

Catalog of Hymenoptera in America North of Mexico



Carl F. W. Muesebeck

This catalog is dedicated to our cherished colleague with affectionate regard for his kindness and with admiration for his distinguished scholarly contributions to our knowledge of North American Hymenoptera for more than half a century.

Catalog of Hymenoptera in America North of Mexico

Prepared cooperatively by
specialists on the various groups of Hymenoptera
under the direction of

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Systematic Entomology Laboratory,
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Symphyla and Apocrita (Parasitica)

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Introduction

By

Karl V. Krombein,

Paul D. Hurd, Jr.,

and

David R. Smith

This catalog, which is an outgrowth of the highly successful Hymenoptera of America North of Mexico Synoptic Catalog (1951), including the first and second supplements (1958, 1967), provides simultaneously, by use of computer technology (Krombein, Mello and Crockett, 1974. Ent. Soc. Amer., Ann. 20 :24-29), a printed version as well as a computer-queriable data base of the basic systematic, biological, and morphological information on the order Hymenoptera as it occurs in America north of Mexico. While the format of the present catalog closely parallels that of the original catalog, every effort has been made to increase the information content to fulfill better the needs of the biological community. This has been accomplished chiefly by the introduction of textbook prose at most higher category levels, by the presentation of explanatory or descriptive comments as appropriate, and by the inclusion of more complete listings of citations to taxonomic, biological, and morphological literature at all hierarchical levels together with parenthetical annotations concerning the content for many of these citations. Similarly, the data about hosts, parasites, prey, predators, and pollen sources are covered more fully than in the original catalog. Since these data have been reported in various ways and under differing names in the primary literature, an

attempt has been made to organize this information and present it, usually, alphabetically even though sometimes such data have been recorded in the literature with scientific or vernacular names or both. Although many of these names have been checked for accuracy, no consistent attempt has been made to verify that the names agree with current usage or status. While those authors of zoological names are usually abbreviated in the citation of hosts, parasites, and the like, the authors of the scientific botanical names are not included. Elsewhere in the catalog, the last name of an author is cited in full, but without initials. Since the technology employed in the preparation of this catalog precluded the use of diacritical marks, these have been omitted and consequently, as in the case of the umlaut, a variant spelling has been substituted as appropriate.

The International Code of Zoological Nomenclature (1961) including the intent and preamble of the Code and of any pertinent opinions usually has been followed. Thus a name in current usage as determined by the code is employed, but mention is made, as appropriate, that an application is pending before the International Commission of Zoological Nomenclature.

An attempt has been made to record all the recent taxa, with their synonyms, described

from, or known to occur in, the political divisions of the conterminous United States, Canada, Alaska, and Greenland. Insofar as known, all species introduced from other countries and liberated in America north of Mexico for biological control purposes have been listed. Some of these have never been recovered and, apparently, were unsuccessful in establishing themselves. For each such species a statement has been included, following the distribution, that the species was liberated but did not become established.

As in the original catalog, the arrangement is systematic for species-groups and higher categories insofar as our present knowledge and the limitations of a linear arrangement permit. The generic and subgeneric concepts represented in this arrangement are based upon what are believed to be the correct type-species. In each instance the type-species is cited together with the authority for the selection. Where designations of type-species have been found to be invalid under the International Code of Zoological Nomenclature, new type-species designations, believed to be valid, are given in the catalog. Generic synonymy is included under the generic headings except where subgenera are recognized, in which cases such synonymy is given under the subgeneric names, and references to revisional or other papers are listed under the appropriate higher category.

The arrangement of species within genera, subgenera, and species groups is alphabetical. Where subspecies are recognized, the subspecific names are placed in alphabetical order under the species to which they belong; and varieties are listed under the particular species or subspecies in which they were described. In each case the specific, subspecific, or infrasubspecific, name is followed by an indication of the known distribution, and by brief statements, as appropriate, of preferred habitats or the like, hosts, parasites, prey, predators, or pollen sources. Much of

this information on synonymy, distribution, ecology, hosts, parasites, prey, and so forth has not been published previously. The type localities are usually recorded for those forms that are known only from the localities where the type specimens were obtained. Otherwise the distribution is usually shown by states and provinces, or by other means such as life zones.

Since unquestionably a catalog is indispensable in the support of systematic and other biological research, no effort has been spared toward making this catalog as useful as possible to all of the scientific community interested in these fascinating insects.

LITERATURE COVERAGE

All authors have attempted to include all pertinent references to synonyms, revisions, taxonomy, biology, and morphology beginning with 1758, the publication date of the 10th edition of "Systema Naturae" by Linnaeus. The cut-off dates vary for the several sections of the catalog and are as follows: Symphyta through 1974; Ichneumonidea through 1976; Chalcidoidea—Torymidae (except Agaoninae) and Encyrtidae through 1976; other families and Agaoninae through 1972; Cynipoidea through 1972; Evanioidea through 1976; Pelecinidea, Proctotrupidea, and Ceraphronidea through 1972; Trigonalidea through 1976; Bethyloidea and Scoliidea through 1975; Formicoidea through mid-1975; Vespoidea, Pompiloidea, and Sphecoidea through 1975; and Apoidea through 1976. All authors have included some references subsequent to the dates listed above.

Abbreviations and Symbols

LITERATURE CITATIONS

The source for journal abbreviations is Whitlock, C., 1939, *Abbreviations used in the Department of Agriculture for titles of publications*, United States Department of Agriculture Miscellaneous Publication No. 337, 278 pages. Abbreviations for other titles and journals not found in Whitlock essentially follow the same format and abbreviations that she recommends. Book titles are usually shortened to omit irrelevant adjectives and include abbreviations, e.g.: Wheeler and Wheeler, 1963. The Ants of North Dakota, p. —, is cited as Wheeler and Wheeler, 1963. Ants of N. Dak., p. —. Certain lengthy non-serial titles are also abbreviated, e.g.: Say, 1824. In Keating, Narr. Long's 2nd Exped., v. 2 (App.), p. —, rather than Say, 1824. In Keating, Narrative of an Expedition to the Source of St. Peter's River, Lake Winnepeek . . . , etc. The titles are intended to be uniform throughout the catalog, but, in a work of this magnitude, there will naturally be some deviations. The abbreviations should be adequate to find the cited publication.

SYMBOLS AND ABBREVIATIONS

Certain symbols and abbreviations are frequently used in this catalog. Though there may be slight variations in some, they are generally as follows:

(!)—lapsus or misspelling of a scientific name.

"♀" = ♂ or "♂" = ♀—incorrect sex determination.

♀ (♂ misdet.) or ♂ (♀ misdet.)—only one of the sexes described belongs to the species cataloged.

♀—female.

♂—male.

W—worker.

S—soldier.

ab.—aberration.

app.—appendix.

cent.—central.

changed status—used after a species-group name to indicate a rank different from that previously accorded to it; not necessarily the same as new status.

desig.—designated; e.g., in type-species designation, "Desig. by Rohwer, 1911."

e., east.—east, eastern.

emend.—emendation.

fasc.—fascicle.

fig., figs.—figure, figures.

h.—heft.

n. comb.—new combination; used after a species-group name to indicate a new generic assignment.

n. name—new name; used after a genus-group or species-group name to indicate a substitute name for a homonym.

N. name—New name; used after a bibliographic citation to indicate a previously proposed name.

Nom. nud.—Nomen nudum.

n. s.—new series.

n. status—new status; used where a taxon is here accorded a rank different from that which it had previously.

N. syn.—New synonymy; used to indicate a synonym newly proposed in this catalog.

n., no., north.—north, northern.

n.e., northeast.—northeast, northeastern.

n.w., northwest.—northwest, northwestern.

orig. desig.—original designation; used to indicate type-species designation.

p., pp.—page, pages.

pl., pls.—plate, plates.

preocc.—preoccupied; used after a genus-group or species-group name to indicate a homonym.

pt.—part.

revised status—revised status; used to denote a taxon that has been removed from synonymy.

ser.—series.

s., so., south.—south, southern.

s.e., southeast.—southeast, southeastern.

s.w., southwest.—southwest, southwestern.

sp., spp.—species.

ssp., sspp.—subspecies.

subg.—subgenus.
transcont.—transcontinental.
v., vol.—volume.
var.—variety.
w., west.—west, western.

FAUNAL ZONES

Bor.	Boreal
Canad.	Canadian
Huds.	Hudsonian
Transit.	Transition
Austr.	Austral
U. Austr.	Upper Austral
L. Austr.	Lower Austral
Alleghan.	Alleghanian
Austrorip.	Austroriparian
Carol.	Carolinian
Sonor.	Sonoran
U. Sonor.	Upper Sonoran
L. Sonor.	Lower Sonoran

GEOGRAPHICAL NAMES

<i>Abbreviation</i>	<i>Political Unit</i>
Ala.	Alabama
Alaska	Alaska
Alta.	Alberta
Ariz.	Arizona
Ark.	Arkansas
B.C.	British Columbia
Calif.	California
Canada	Canada
Colo.	Colorado
Conn.	Connecticut
Del.	Delaware
D.C.	District of Columbia
Fla.	Florida
Ga.	Georgia
Greenland	Greenland
Idaho	Idaho
Ill.	Illinois
Ind.	Indiana
Iowa	Iowa
Kans.	Kansas

Ky.	Kentucky
La.	Louisiana
Labrador	Labrador, Newfoundland (Labrador)
Maine	Maine
Man.	Manitoba
Mass.	Massachusetts
Md.	Maryland
Mexico	Mexico
Mich.	Michigan
Minn.	Minnesota
Miss.	Mississippi
Mo.	Missouri
Mont.	Montana
N. B.	New Brunswick
N. C.	North Carolina
N. Dak.	North Dakota
Nebr.	Nebraska
Nev.	Nevada
Newfoundland	Newfoundland, Newfoundland (insular)
N. H.	New Hampshire
N. J.	New Jersey
N. Mex.	New Mexico
N. S.	Nova Scotia
N. W. T.	Northwest Territories
N. Y.	New York
Ohio	Ohio
Okla.	Oklahoma
Ont.	Ontario
Oreg.	Oregon
Pa.	Pennsylvania
P. E. I.	Prince Edward Island
Que.	Quebec
R. I.	Rhode Island
Sask.	Saskatchewan
S. C.	South Carolina
S. Dak.	South Dakota
Tenn.	Tennessee
Tex.	Texas
U. S.	United States
Utah	Utah
Vt.	Vermont
Va.	Virginia
Wash.	Washington (state)
W. Va.	West Virginia
Wis.	Wisconsin
Wyo.	Wyoming
Yukon	Yukon Territory

TAXONOMIC AND NOMENCLATURAL CHANGES

The catalog contains one undiagnosed new species in the Ichneumonidae, *Pterocormus clasma* Carlson, p. 521, proposed for the taxon misidentified as *Ichneumon canadensis* Cresson by Heinrich (1961).

The catalog contains one undiagnosed new

genus also in the Ichneumonidae, *Woldstedtius* Carlson, type-species *Bassus biguttatus* Gravenhorst, p. 719, proposed for *Syrphoctonus* Foerster *sensu* Dasch (1964).

The following new names are proposed to replace preoccupied names:

Tenthredinidae

<i>Pachynematus gamus</i> Smith for <i>Pachynematus graminis</i> Marlatt (1896)	p. 58
<i>Nematus attus</i> Smith for <i>Amauronematus dyari</i> Marlatt (1896)	p. 68
<i>Amauronematus peralus</i> Smith for <i>Nematus pectoralis</i> Cresson (1880)	p. 80

Ichneumonidae

<i>Oedomopsis davis</i> Carlson for <i>Trophon</i> ? <i>nasutus</i> Cresson (1868)	p. 366
<i>Gelis cushmani</i> Carlson for <i>Hemiteles apantelis</i> Cushman (1927)	p. 405
<i>Oresbius shumaginensis</i> Carlson for <i>Stiboscopus ferrugineus</i> Ashmead (1902)	p. 438
<i>Pterocormus dionymus</i> Carlson for <i>Ichneumon anonymus</i> Heinrich (1961)	p. 522
<i>Casinaria affinis</i> Carlson for <i>Casinaria affinis</i> Walley (1947)	p. 635

Pteromalidae

<i>Mesopolobus fuscipedes</i> Burks for <i>Platiterma fuscipes</i> Ashmead (1896)	p. 816
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Eurytomidae

<i>Harmolita ovatella</i> Burks for <i>Harmolita ovata</i> Phillips and Emery (1919)	p. 840
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Eulophidae

<i>Syntomosphyrum orgyiazele</i> Burks for <i>Teatrastichomyia orgyiae</i> Girault (1916) ..	p.1005
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Diapriidae

<i>Trichopria kiefferi</i> Muesebeck for <i>Diapria montana</i> Kieffer (1906)	p.1147
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Scelionidae

<i>Trimorus contractus</i> Muesebeck for <i>Gryon flavipes</i> Ashmead (1893)	p.1162
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Ceraphronidae

<i>Aphanogmus harringtoni</i> Muesebeck for <i>Aphanogmus salicicola</i> Harrington (1899) ..	p.1190
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Megaspilidae

<i>Deudrocerus obscurus</i> Muesebeck for <i>Atritomus californicus</i> Kieffer (1906) ..	p.1194
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Masaridae

<i>Euparagia richardsi</i> Bohart for <i>Psiloglossa simplicipes</i> Rohwer (1909)	p.1470
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Phlanthidae

<i>Cerceris bolingeriana</i> Krombein for <i>Cerceris bolingeri</i> Scullen (1972)	p.1730
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Anthophoridae

<i>Triepeolus mitchelli</i> Hurd for <i>Triepeolus sublinatus</i> Mitchell (1962)	p.2094
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There are a number of other nomenclatural and taxonomic changes. These are considered of lesser bibliographic importance than the new names, so tabulations of them are deferred to Volume 3 which will also contain the indexes and a table of the number of

valid genera and species for each family and higher category. These nomenclatural and taxonomic changes are as follows:

A number of generic transfers are made. They are usually cited in the text as *xantianum* (Saussure), n. comb. The authority

responsible for the transfer is the author of that section unless the name of another specialist is included.

There are also a number of instances where a taxon formerly considered to be a species is treated here as a subspecies of another taxon, or where a taxon formerly considered to be a subspecies is now raised to specific rank. The authority responsible for the change is the author of that section unless the name of another specialist is included. These are usually cited in the text as *clavatum johannis* (Richards), *n. status* or *alba Rohwer, n. status*.

The words—changed status—occasionally follow the author of a species-group name. This indicates that the taxon has a rank

different from that accorded it elsewhere. It is not the same as new status for it reflects a change which has already been published.

In a few taxa, the words—revised status—follow the author of a species-group name. This denotes a taxon which has been removed from synonymy.

There are a few new synonyms at the genus-group level and numerous new synonyms at the species-group level. These are indicated by the abbreviation *N. syn.* following the bibliographic citation of the new synonym. As noted above, the synonymy is to be attributed to the author of the section unless the name of another specialist appears in parentheses following the abbreviation *N. syn.*

Volume 3

It is intended that Volume 3 will contain separate indexes to the taxa of Hymenoptera, and to their hosts, parasites, prey, predators, and pollen and nectar sources. Preparation of the indexes has already begun, and we anticipate that the tapes for Linotron production will be sent to the Government Printing Office

during 1978. We will also include in Volume 3 a tabulation of the number of valid genera and species for each family and higher category, and lists of the nomenclatural and taxonomic changes other than the new names which are listed above.

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In the Symphyta, H. E. Milliron, formerly of the Biosystematics Research Institute (BRI), Agriculture Canada, Ottawa, reviewed parts of the manuscript and provided information, as did H. R. Wong, Northern Forest Research Centre, Edmonton, Alberta, for *Pristiphora* Latr. H. Greenbaum, University of Florida, Gainesville, furnished data on Florida sawflies.

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O. W. Richards, British Museum (Natural History), London, and R. M. Bohart reviewed the entire manuscript for Vespoidea. J. van der Vecht, Putten, The Netherlands, recommended the systematic sequence adopted in the Eumenidae and reviewed the manuscript.

M. J. West-Eberhard, Universidad del Valle, Cali, Colombia, and R. R. Snelling reviewed the manuscript on Vespidae and supplied data on taxonomy and biology. J. E. Gillaspay, Texas A & I University, Kingsville, provided information on *Polistes* Latr.

H. E. Evans reviewed the manuscript on Pompilidae, and F. E. Kurczewski, University of Syracuse, N. Y., contributed some prey records.

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Order HYMENOPTERA

By KARL V. KROMBEIN AND PAUL D. HURD, JR.

The Hymenoptera is one of the largest orders of insects with more than 20,000 species in America north of Mexico, most of which are beneficial and many of which are of considerable economic importance to agriculture and forestry either as parasites or predators of pests or as pollinators of more than 100 commercially grown crops. Among the relatively few injurious Hymenoptera are the sawflies, some of which are serious defoliators or stem-borers of trees or crops.

Taxonomy: Fabricius, 1804. *Systema Piezatorum*, 439 pp., 1 p. of errata, 3 pp. of index.
—Panzer, 1806. *Kritische Revision der Insektenfauna Deutschlands*, v. 2, Hymenoptera, 271 pp. 2 pls. Cited in text as *Krit. Rev. Insektenf. Deutschlands*. —Andre, 1879-1913, *Species des Hymenopteres d'Europe et d'Algerie*, vols. 1-11. Cited in text as *Spec. Hym. Eur. Alg.* —Cameron, 1883-1900. *In* Godman and Salvin, *Biologia Centrali-Americana*. Hymenoptera; vol. 1, pp. 1-487, 20 pls., 1883-1900; vol. 2, pp. 413, 13 pls., 1888-1900. Cited in text as Cameron, *Biol. Cent.-Amer.*, Hym. —Cresson, 1887. *Amer. Ent. Soc., Trans.*, Sup. Vol., pp. 1-350 (key to No. Amer. families, genera and catalog of spp.). —Dalla Torre, 1892-1902. *Cat. Hym.*, 10 vols. (world spp.). —Schulz, 1906. *Spolia Hymenopterologica*, 355 pp., 11 figs., 1 pl. Cited in text as *Spolia Hym.* —Viereck, *et al.*, 1917 (1916). *Conn. State Geol. and Nat. Hist. Survey*, Bul. 22: 1-824, 10 pls., 15 text figs. (keys to Conn. spp.). —Boerner, 1919. *Biol. Zentbl.* 39: 145-186, 6 figs. (phylogeny). —Schroeder, 1925. *Handb. d. Ent.* 3: 712-825, figs. 593-705. —Tillyard, 1926. *The Insects of Australia and New Zealand*, pp. 252-307, 53 figs., 2 pls. —Schmiedeknecht, 1930. *Die Hymenopteren Nord- und Mitteleuropas*, 2nd ed., 1062 pp., 127 figs. Cited in text as *Hym. Mitteleuropas*. —Brues and Melander, 1932. *Mus. Compar. Zool., Bul.* 73: 471-526, figs. 887-971 (keys to families, adults, and larvae). —Handlirsch and Meixner, 1933. *In* Krumbach, *Handb. d. Zool.*, v. 4, *Insecta* 2, pp. 895-1036. —Comstock, 1940. *An Introduction to Entomology*, pp. 884-1007. —Essig, 1942. *College Entomology*, pp. 619-727. —Imms, 1948. *A General Textbook of Entomology*, ed. 7, pp. 544-615. —Lanham, 1951. *Ent. Soc. Amer., Ann.* 44: 614-628, 27 figs. (phylogeny based on wing venation). —Muesebeck, Krombein, Townes *et al.*, 1951. *U. S. Dept. Agr., Agr. Monog.* 2, 1,420 pp., 1 map (catalog of species north of Mexico). —Michener, 1953. *Kans. Univ. Sci. Bul.* 35: 993-995 (larvae, key to certain families). —Richards, 1956. *Hymenoptera, Introduction and Keys to Families*. *Handbooks Ident. Brit. Ins., Roy. Ent. Soc., London* 6, pt. 1, 94 pp., 197 text figs., 11 pls. —Boucek *et al.*, 1957. *In* Klic Zvireny CSR (keys to the fauna of Czechoslovakia), ed. by Kratochvil, pp. 35-406, 1108 figs. —Bradley, 1958 (1956). *Tenth Internatl. Congr. Ent. Proc.* 1: 265-269 (phylogeny). —Krombein *et al.*, 1958. *U. S. Dept. Agr., Agr. Monog.* 2, Sup. 1, 305 pp.

- (supplement to catalog of species north of Mexico). — Berland, 1958. Atlas des Hyménoptères de France. I. Tenthredines, Parasites, Porte-aiguillon (Bethyloides, pars), 155 pp., 14 pls. II, Porte-aiguillon (Bethyloides (fin), Scolioides, Formicoïdes, Pompiloïdes, Vespoïdes, Sphecoïdes, Apoïdes), 184 pp., 14 pls. — Oeser, 1961. Zool. Mus. Berlin, Mitt. 37: 75-85, figs. 106-107 (phylogeny based on ovipositor). — Krombein, Burks *et al.*, 1967. U. S. Dept. Agr., Agr. Monog. 2, Sup. 2, 584 pp. (supplement to catalog of species north of Mexico). — Malyshev, 1968. Genesis of Hymenoptera and phases of their evolution 319 pp. (English translation by Richards and Uvarov). — Borror and DeLong, 1970. An Introduction to the Study of Insects, ed. 3, pp. 537-616, figs. 495-577. — Riek *et al.*, 1970. In The Insects of Australia, C. S. I. R. O., pp. 867-959, 40 figs. — Richards, 1972 (1971). Ent. Essays to Commemorate Retirement of Prof. K. Yasumatsu, pp. 1-13, 10 figs. (thoracic spiracles in classification). — Rasnitsyn, 1971. XIII Internatl. Congr. Ent., Proc. 1: 289 (origin). — Koenigsmann, 1976. Deut. Ent. Ztschr. (n.f. 23) 4-5: 253-279, 4 figs. (phylogeny).
- Biology: Bishoff, 1927. Biologie de Hyménoptères, 598 pp., 224 figs. — Fulmek, 1957. Naturhist. Mus. Wien, Ann. 61: 110-227 (aphid parasites and predators). — Iwata, 1972 (1971). Evolution of Instinct: comparative Studies of Hymenoptera Behavior, 503 pp. (Japanese edition). — Farish, 1972. Anim. Behavior 20: 662-676 (grooming behavior). — Iwata, 1976. Evolution of Instinct: Comparative Ethology of Hymenoptera, 535 pp., frontisp., 50 figs. (English translation, Natl. Tech. Inform. Serv., PB 257052).
- Morphology: Snodgrass, 1911. U. S. Natl. Mus., Proc. 39: 37-91, 16 pls., 19 text figs. (thorax). — Rohwer and Gahan, 1916. Ent. Soc. Wash., Proc. 18: 20-76, 3 pls. (wing venation). — Comstock, 1918. The Wings of Insects, pp. 362-381, pl. 10, text figs. 380-405. — Snodgrass, 1935. Principles of Insect Morphology, 667 pp., 319 figs. — Ross, 1936. Ent. Soc. Amer., Ann. 29: 99-111, 2 pls. (wing venation). — Snodgrass, 1941. Smithsn. Inst., Misc. Collect. 99 (14): 1-86, 33 pls., 6 text figs. (male genitalia). — Reid, 1941. Roy. Ent. Soc. London, Trans. 91: 367-446, 81 figs. (thorax of wingless and brachypterous spp.). — Richards, 1956. Roy. Ent. Soc. London, Proc. (A) 31: 99-104, 7 figs. (interpretation of thoracic venter). — Short, 1959. Roy. Ent. Soc., London, Trans. 111: 175-203, 11 figs. (abdominal musculature). — Oeser, 1961. Zool. Mus. Berlin, Mitt. 37: 3-119, 107 figs. (female ovipositor). — Daly, 1963. Ent. Soc. Amer., Ann. 56: 295-306 (thoracic musculature). — Smith, 1970. Ent. Soc. Amer., Ann. 63: 1-27 (evolutionary morphology of external genitalia). — Eady, 1974. Jour. Ent., Ser. B, 43: 63-72 (wing venation).

Suborder SYMPHYTA

By DAVID R. SMITH

The suborder Symphyta, commonly known as sawflies and hornails, has also been recorded in the early literature under the names Chalastogastra, Sessiliventria, or Phyllophaga and Xylophaga. The suborder includes about 10,000 world species grouped into about 1,000 genera and 12 families. Representatives are found on all continents except for Antarctica, and they are also absent on many of the more isolated islands of the world such as Hawaii and many other Pacific islands. The most northern record is that for *Pachynematus parvilabris* (Thomson) on Ward Hunt Island in Canada, 83° 05' N., and several species are found as far south as Tierra del Fuego. The North American fauna consists of around 1,000 species in 10 families. The two families that have no living representatives in North America are the Megalodontidae and Blasticotomidae, both of which are Palearctic, though the Blasticotomidae is represented in North America by the fossil species *Paremphytus ostentus* Brues from the Miocene of Florissant, Colorado. The Blasticotomidae contains only several species, very secretive and rarely found, the larvae of which bore in the stems of ferns. Living forms may yet be discovered on this continent. Other than the families discussed here, a number of fossil families have been described, most all from the Old World. These are Anaxyelidae, Gigasiricidae, Karatavitidae, Myrmiciidae, Parapamphiliidae, Pararchexyelidae, Paroryssidae, Pseudosiricidae, Sepulcidae, Xyelotomidae, and Xyelydidae.

The common name sawfly, applied to members of most families, is derived from their flylike appearance and the sawlike female ovipositor which is used to cut open plant tissue for insertion of eggs. The name hornail is usually applied to members of the family Siricidae, the females of which have a long slender ovipositor. Adults of the suborder may be distinguished from other Hymenoptera by the abdomen which is broadly joined to the thorax, the trochanters which are always two-segmented and the hindwing which usually has three closed basal cells. The larvae of most sawflies are entirely different from other Hymenoptera larvae and are most often confused with those of Lepidoptera, though sawfly larvae lack crochets on the prolegs, have only one pair of ocelli, and normally have more than five pairs of prolegs. Some larvae, especially those modified for an internal existence, resemble the grublike larvae of other Hymenoptera but normally have a projection at the apex of the abdomen and vestiges of thoracic legs.

The higher classification of the Symphyta in most universal use at present is that proposed by Ross (1937) and Benson (1938). The suborder is divided into two major series, the Orthandria and Strophandria basically separated by the male genitalia which remains normal in the former but is turned 180° prior to eclosion in the latter. The Strophandria is expressed as the superfamily Tenthredinoidea. The Orthandria have been further divided on the basis of characters of the mesosternum and head capsule into three superfamilies, the Megalodontoidea, Siricoidea, and Cephoidea. Some authors have recognized the superfamily Xyeloidea including only the family Xyelidae. This has some merit, as both positions of male genitalia are found, the orthan-

drous in the Macroxyelinae and strophandrous in the Xyelinae.

All members of this suborder are phytophagous except for the family Orussidae which is parasitic on other wood-boring insects. Host plants and habits are various. Many larvae are external feeders on the foliage of the host, but others are leaf miners, gall formers on twigs, petioles, leaves, or buds, leaf-edge rollers, stem borers, wood borers, or petiole miners. Because of their plant feeding habits, many sawflies are pests of ornamental plants, agricultural crops, or forest stands. Their occurrence is normally local, but outbreaks in forests may be extensive, covering many thousands of acres and resulting in considerable growth loss or death of trees. Appearance in epidemic proportions is commonly sporadic, suddenly appearing for a year or more then practically disappearing for several years, probably being kept under control by their natural parasite-predator-disease complex. Some of the most destructive species are aliens which were accidentally introduced from abroad and found a vacuum for development without natural enemies. Many parasites have been introduced to help combat these pests. Some of the more important sawflies are those that feed on timber species, roses, apples, pears, peaches, and wheat and other grain crops. On the other hand, a few sawflies have been used beneficially, or at least have been attempted for use in the biological control of weeds. One species, *Ucona acacnae* Smith (= *Antholcus varinervis* of authors), was introduced into New Zealand from Chile in the early 1930's to help control the spread of *Acacia*. This attempt was only partially successful. Another species, *Priophorus morio* (Lepeletier), was released in Hawaii from the western United States to help control the spread of *Rubus* on the islands, but this attempt failed.

The life cycle of many sawflies follows a similar pattern, though with many variations. Adults of most species fly in spring and early summer and are very short-lived. It is difficult to keep individual adults alive in captivity for much more than a few days although the actual flight of a species may extend over several weeks or months. Some adults may not feed but some may feed on moisture, nectar and pollen of flowers, leaf pubescence, or other insects. The most productive areas for collecting are in vegetation on edges of rivers or streams, marshes, open and scrubby woodland, or undisturbed meadows. The catkins of willows and alders are especially productive for many groups. Oviposition is in the foliage, stems, twigs, or wood, and the eggs are most always inserted in the plant tissue though some Pamphiliidae may glue their eggs to the leaf surface. Larval feeding time varies, but usually lasts about two weeks. Many larvae, especially Diprionidae, feed gregariously at first but later disperse to other parts of the host. After feeding is completed the larva molts into a non-feeding stage called the prepupa or resting stage. The prepupa normally leaves the host in search of a site for pupation. This may be in a cell in the ground or litter, in a papery cocoon in the ground, in some other substance such as wood, stems of the host or nearby plants, or fruits of other plants. The prepupal stage differs morphologically from the feeding stages, especially in the shape of the mandibles and sometimes color pattern. Some larvae with spines lose these in the final molt. If there is a single generation, the prepupa will remain in its cocoon or cell the rest of the summer and pupate the following spring. However, depending on the species, latitude, or diapause requirements, there may be several generations a year, or it may take several years to complete the cycle.

The following references are to general articles on the Symphyta. Some, such as Maxwell, 1955, in morphology, pertain to many species and the reference is not repeated under each species. Under some species, such as *Pristiphora erichsonii* (Hartig), a listing of all biological references would take many more pages, and the references are selected or pertain to some recent synopsis which contains a good bibliography. Some of the new distribution records, hosts, and taxonomic changes are taken from unpublished notes. Only those taxonomic changes cited as being new have not before appeared in the literature.

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Taxonomy: Norton, 1867-1869. Amer. Ent. Soc., Trans. 1: 31-84, 193-280; 2: 211-242, 321-368

(N. Amer. catalog). —Cresson, 1880. Amer. Ent. Soc., Trans. 8: 53-68 (N. Amer. catalog).

—Dalla Torre, 1894. Cat. Hym., v. 1, 459 pp. (world catalog). —Ashmead, 1898. Canad. Ent. 30: 141-145, 177-183, 205-213, 225-232, 249-257, 281-287, 305-316 (classification, keys to

- genera). — Konow, 1905. *In* Wytzman, Gen. Ins., fasc. 27, 27 pp.; fasc. 28, 14 pp.; fasc. 29, 176 pp. (world catalog). — Dyar, 1893-1895. *Canad. Ent.* 25: 244-248; 26: 42-45, 185-189; 27: 191-196, 208-212 (larvae). — Dyar, 1895 *Amer. Ent. Soc., Trans.* 22: 301-312 (larvae). — Dyar, 1897. *N. Y. Ent. Soc., Jour.* 5: 18-30, 190-201 (larvae). — Dyar, 1898. *Canad. Ent.* 30: 173-176 (larvae). — Dyar, 1898. *N. Y. Ent. Soc., Jour.* 6: 121-138 (larvae). — Dyar, 1900. *N. Y. Ent. Soc., Jour.* 8: 26-31 (larvae). — Rohwer, 1911. *Ent. Soc. Wash., Proc.* 13: 215-224 (classification). — Rohwer, 1911. *U. S. Dept. Agr., Bur. Ent., Tech. Ser.* 20, pt. 2, pp. 69-109 (genotypes and work of Ashmead). — Rohwer, 1911 *Ent. News* 22: 218-219 (additions and correction to "genotypes"). — Enslin, 1912-1918. *Deut. Ent. Ztschr., Beih.* 790 pp. (Tenthredinoidea of middle Europe). — MacGillivray, 1913. *Ent. Soc. Ont., Ann. Rpt.* 44: 54-75 (larvae). — MacGillivray, 1916. *Conn. State Geol. and Nat. Hist. Survey Bul.* 22: 25-175. — Yuasa, 1923. *Ill. Biol. Monog.* 7(4): 1-168 (N. Amer. larvae). — Ross, 1937. *Ill. Biol. Monog.* 15(2): 1-173 (generic revision, N. Amer.). — Benson, 1938. *Roy. Ent. Soc. London, Trans.* 87: 353-384 (world classification). — Benson, 1951. *Handb. for Ident. of Brit. Ins.*, v. 6, pt. 2(a): 1-49; 1952, v. 6, pt. 2(b): 51-137; 1958, v. 6, pt. 2(C): 139-252. — Lorenz and Kraus, 1957. *Die Larvalsystematik der Blattwespen*, 339 pp. (larvae of European species). — Ross, 1960. *Amer. Ent. Soc., Trans.* 85: 315-321 (early history of sawfly study in N. Amer.). — Benson, 1962. *Brit. Mus. (Nat. Hist.) Ent., Bul.* 12: 381-409 (Holarctic sawflies). — Rasnitsyn, 1969. *Origin and evolution of the lower Hymenoptera*, 187 pp. (fossil).
- Biology:** Rohwer, 1915. *Ent. Soc. Wash., Proc.* 17: 195-198 (mating habits). — Benson, 1950. *Soc. Brit. Ent., Trans.* 10: 45-142 (natural history of Brit. sawflies). — Wong, 1954. *Canad. Ent.* 86: 154-158 (sawflies on white birch in Man., Sask.). — Neilson, 1958. *Canad. Ent.* 90: 229-234 (life histories of sawflies in low-bush blueberry fields in N. B.). — Raizenne, 1957. *Canada Dept. Agr. Pub.* 1009, 45 pp. (forest sawflies of s. Ont. and their parasites). — Lindquist, 1959. *Canad. Ent.* 91: 625-627 (leaf mining sawflies on birch). — Lindquist and Miller, 1970. *Ent. Soc. Ont., Proc.* 100: 117-123 (free-feeding sawflies on birch and alder in Ont.). — Lindquist and Miller, 1971. *Ent. Soc. Ont., Proc.* 102: 118-122 (larvae feeding on spruce and balsam fir in Ont.).
- Morphology:** Marlatt, 1891. *Ent. Soc. Wash., Proc.* 2: 115-117 (final molting of larvae). — Marlatt, 1894. *Ent. Soc. Wash., Proc.* 3: 78-82 (neurulation of wings). — MacGillivray, 1906. *U. S. Natl. Mus., Proc.* 29: 569-654 (wings). — Van Dine, 1906. *Hawaii. Ent. Soc., Proc.* 1: 19-22 (comparative anatomical study of mouthparts). — Crampton, 1919. *Ent. Soc. Wash., Proc.* 21: 129-155 (genitalia and terminal abdominal structure of males and larvae). — Middleton, 1921. *Ent. Soc. Wash., Proc.* 23: 139-144 (terminal abdominal structures). — Middleton, 1921. *Ent. Soc. Wash., Proc.* 23: 173-192 (suggested homologies between larvae and adults). — Boulange, 1924. *Mem. et Travaux des Facultés Catholiques de Lille* 28: 1-444 (genitalia). — Taylor, 1931. *Roy. Phys. Soc., Proc.* 22: 41-70 (morphology of the tenthredinid head). — Taylor, 1931. *Ent. Soc. Amer., Ann.* 24: 451-466 ("Dyar's Rule", its application to sawfly larvae). — Malloch, 1936. *Inaugural-Dissertation, Erlangung der Doktorwürde, Philosophischen Fakultät der Friedrich-Wilhelms-Universität zu Berlin*, 55 pp. (thorax and cenchri). — Parker, 1934. *Bol. Lab. Zool. Gen. e Agr. Portici* 28: 159-191 (anatomy of larvae, with special reference to head). — Ross, 1936. *Ent. Soc. Amer., Ann.* 29: 99-111 (ancestry of wing venation). — Ross, 1945. *Ent. News* 56: 261-268 (genitalia: terminology and study techniques). — Maxwell, 1955. *Canad. Ent.* 87 (sup. 1): 1-132 (comparative internal larval anatomy). — Arora, 1956. *Panjab Univ., Res. Bul., Zool.* 90: 85-119 (relationship of Symphyta to other insect orders based on adult external morphology). — Togashi, 1965. *Kontyu* 33: 230-234 (rectal papillae). — Togashi, 1970. *Mushi* 43 (sup.): 1-114 (comparative morphology of internal reproductive organs). — Kennington, 1972. *Jour. Ent.* 46: 111-116 (variations in silk gland morphology among larvae).

Superfamily MEGALODONTOIDEA

Family XYELIDAE

A small family of primitive sawflies better represented in North America than in other parts of the northern hemisphere. Most of the family is associated with conifers; only members of the tribe Macroxyelini are associated with deciduous trees.

Revision: Ross, 1932. Ent. Soc. Amer., Ann. 25: 153-169 (Nearctic).

Taxonomy: Klima, 1937. In Hedicke, Hym. Cat. pt. 4, 12 pp. (catalog). — Benson, 1945. Roy.

Ent. Soc. London, Proc., Ser. B: Taxonomy 14: 34-37 (generic classification, world).

— Burdick, 1959. Kans. Ent. Soc., Jour. 32: 120-122 (fossil). — Rasnitsyn, 1964. Paleontol.

Jour. No. 1, pp. 88-96 (fossil). — Rasnitsyn, 1965. Polski Pismo Ent. 35: 483-519 (Xyelinae of world). — Rasnitsyn, 1966. Paleontol. Jour. No. 4, pp. 69-85 (fossil). — Smith, 1967. Ent. Soc.

Amer., Ann. 60: 376-384 (larvae).

SUBFAMILY XYELINAE

TRIBE XYELINI

Genus XYELA Dalman

Pinicola Brebisson, 1818. Soc. Philomath. de Paris, Bul. des Sci., p. 116. Preocc.

Type-species: *Pinicola julii* Brebisson. Desig. by Rohwer, 1911.

Xyela Dalman, 1819. Svenska Vetensk. Akad., Handl. 40: 122.

Type-species: *Xyela pusilla* Dalman. Desig. by Curtis, 1824.

Mastigocera Klug, 1827. In Berthold, Latreille's Nat. Fam. Thierr. p.442.

Tritokreion Schilling, 1825. Schles. Gesell. f. Vaterland. Kult. Ubers., Arb. 2: 43. No included species.

Neoxyela Curran, 1923. Canad. Ent. 55: 20.

Type-species: *Neoxyela alberta* Curran. Monotypic.

Xyelatana Benson, 1938. Roy. Ent. Soc. London, Proc., Ser. B: Taxonomy 7: 35.

Type-species: *Xyela longula* Dalman. Orig. desig.

Larvae of most species of *Xyela* live and feed in the developing staminate cones of *Pinus* species. One species, *gallicaulis*, forms shoot galls. Adults fly early in the spring and are commonly found in large numbers on the catkins of *Salix* or *Alnus* near their host plants.

Revision: Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 265-281. — Burdick, 1961. Calif. Univ., Pubs., Ent. 17: 285-353 (also biology).

alberta (Curran). Alta., Mont., Wyo., Calif. Host: *Pinus contorta*.

Neoxyela alberta Curran, 1923. Canad. Ent. 55: 20. ♀, ♂.

alpigena (Strobl). Que. and Maine to Md. w. to Utah and N. Mex.; Holarctic. Host: *Pinus strobus*.

Pinicola alpigena Strobl, 1895. Wien. Ent. Ztg. 14: 277. ♀, ♂.

Xyela brunneiceps Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 269. ♀.

Xyela kamtschatica Gussakovskij, 1935. Fauna URSS, Ins. Hym., T. 2, 1: 133. ♀.

Xyela middlekuffi Burdick, 1961. Calif. Univ., Pubs., Ent. 17: 343. ♀.

Taxonomy: Benson, 1962. Brit. Mus. (Nat. Hist.) Bul. Ent. 12: 385.

bakeri Konow. Que. to Fla. w. to B. C. and Calif. Ecology: Widespread. Host: *Pinus elliottii*, *P. palustris*, *P. ponderosa*, *P. sabiniana*, *P. virginiana*.

Xyela bakeri Konow, 1898. Ent. Nachr. 24: 328.

Xyela negundinis Cockerell, 1907. Canad. Ent. 39: 324.

Xyela salicis Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 271. ♂.

Xyela intrabilis MacGillivray, 1923. Brooklyn Ent. Soc., Bul. 18: 53. ♂.

Biology: Ebel, 1966. Ent. Soc. Amer., Ann. 59: 127-129.

californica Rohwer. Calif.

Xyela californica Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 272. ♂.

cheloma Burdick. Idaho, Nev., B. C., Wash., Oreg. Host: *Pinus ponderosa*.

Xyela cheloma Burdick, 1961. Calif. Univ., Pubs., Ent. 17: 336. ♀, ♂.

concava Burdick. Utah, Nev., Calif. Host: *Pinus monophylla*, *P. ponderosa*.

Xyela concava Burdick, 1961. Calif. Univ., Pubs., Ent. 17: 342. ♀, ♂.

deserti Burdick. Nev., Calif. Host: *Pinus monophylla*.

Xyela deserti Burdick, 1961. Calif. Univ., Pubs., Ent. 17: 347. ♀, ♂.

dodgei Greenbaum. Fla. (Cedar Key).

Xyela dodgei Greenbaum, 1973. Fla. Ent. 57: 104-106. ♂.

gallicaulis Smith. Va., Ga. Ecology: Larva feeds inside and forms galls on shoots. Host: *Pinus echinata*, *P. elliottii*, *P. taeda*.

Xyela gallicaulis Smith, 1970. Ga. Ent. Soc., Jour. 5: 69-72. ♀, ♂. larva.

linsleyi Burdick. Idaho, B. C., Wash., Calif. Host: *Pinus ponderosa* (?).

Xyela linsleyi Burdick, 1961. Calif. Univ., Pubs., Ent. 17: 344. ♀, ♂.

lunata Burdick. Calif. Host: *Pinus coulteri*, *P. sabiniana*.

Xyela lunata Burdick, 1961. Calif. Univ., Pubs., Ent. 17: 334. ♀, ♂.

minor Norton. Que. to Fla. w. to B. C. and Calif. Ecology: Widespread. Host: *Pinus coulteri*, *P. elliottii*, *P. muricata*, *P. palustris*, *P. ponderosa*, *P. sabiniana*, *P. taeda*, *P. virginiana*.

Xyela minor Norton, 1868. Amer. Ent. Soc., Trans. 2: 349. ♀.

Xyela luteopicta Cockerell, 1902. Canad. Ent. 34: 194. ♂.

Xyela alni Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 268. ♀, ♂.

Xyela winnemanae Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 268. ♀.

Xyela errans Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 269. ♀.

Xyela dissimilis Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 270. ♀.

Xyela nevadensis Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 271. ♀.

Xyela coloradensis Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 272. ♂. N. syn.

Biology: Ebel, 1966. Ent. Soc. Amer., Ann. 59: 127-129.

Morphology: Daly, 1963. Ent. Soc. Amer., Ann. 56: 299.

obscura (Strobl). Newfoundland to Fla. w. to N. W. T., B. C. and Calif.; Holarctic. Ecology: Widespread. Host: *Pinus banksiana*, *P. palustris*, *P. ponderosa*, *P. virginiana*.

Pinicola julii var. *obscura* Strobl, 1895. Wien. Ent. Ztg. 14: 277. ♀.

Xyela japonica Rohwer, 1910. U. S. Natl. Mus., Proc. 39: 99. ♀.

Xyela pini Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 267. ♀, ♂.

Xyela slossonae Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 270. ♀, ♂.

Xyela similis Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 271. ♂.

Taxonomy: Benson, 1962. Brit. Mus. (Nat. Hist.) Bul. Ent. 12: 385.

Biology: Ebel, 1966. Ent. Soc. Amer., Ann. 59: 127-129.

priceae Burdick. Calif. Host: *Pinus coulteri*.

Xyela priceae Burdick, 1961. Calif. Univ., Pubs., Ent. 17: 339. ♀, ♂.

radiatae Burdick. Calif. Host: *Pinus radiata*(?)

Xyela radiatae Burdick, 1961. Calif. Univ., Pubs., Ent. 17: 337. ♀, ♂.

serrata Burdick. Calif. Host: *Pinus muricata*.

Xyela serrata Burdick, 1961. Calif. Univ., Pubs., Ent. 17: 341. ♀.

styrax Burdick. D. C., Ga., Md., N. Y., Va. Host: *Pinus virginiana*.

Xyela styrax Burdick, 1961. Calif. Univ., Pubs., Ent. 17: 345 ♀, ♂.

TRIBE PLERONEURINI

Genus PLERONEURA Konow

Pleroneura Konow, 1897. Ent. Nachr. 23: 56.

Type-species: *Xyela dahlia* Hartig. Desig. by Rohwer, 1911.

Pleroneura Ashmead, 1898. Psyche 8: 214. Emend.

Manoxyela Ashmead, 1898. Psyche 8: 214.

Type-species: *Manoxyela californica* Ashmead. Orig. desig.

Larvae of this genus live in the developing shoots and buds of *Abies*.

Revision: Rohwer, 1910. Canad. Ent. 42: 88-93. — Ross, 1932. Ent. Soc. Amer., Ann. 25: 156-159.

Taxonomy: Smith, 1967. Ent. Soc. Amer., Ann. 60: 382-383 (larvae). — Smith, 1967. Ent. Soc. Wash., Proc. 69: 182-183 (species synonymy).

aldrichi Ross. Idaho, Oreg., Nev., Calif. Host: *Abies*.

Pleroneura aldrichi Ross, 1932. Ent. Soc. Amer., Ann. 25: 158-159. ♀, ♂.

brunneicornis Rohwer. N. S., N. B., Maine, Que., Ont., N. Y., Minn. Host: *Abies balsamea*, *A. concolor*.

Pleroneura brunneicornis(!) Rohwer, 1910. Canad. Ent. 42: 89. ♀.

Pleroneura brunneicornis Rohwer, 1910. Canad. Ent. 42: 220.

Pleroneura borealis Felt, 1917. Canad. Ent. 49: 220. ♀, ♂.

Biology: Webb and Forbes, 1951. Canad. Ent. 83: 181-183.

californica (Ashmead). Wyo., Alta., Utah, B. C., Oreg., Calif. Host: *Abies* spp.

Manoxyela californica Ashmead, 1898. Psyche 8: 214. ♂.

Pleroneura fulvicornis Rohwer, 1910. Canad. Ent. 42: 89. ♂.

Pleroneura schwarzi Rohwer, 1910. Canad. Ent. 42: 220. ♀.

koebelei Rohwer. Idaho, Oreg., Calif. Host: *Abies* spp.

Pleroneura koebelei Rohwer, 1910. Canad. Ent. 42: 90. ♂.

lutea Rohwer. Idaho, Oreg., Nev., Calif.

Pleroneura lutea Rohwer, 1910. Canad. Ent. 42: 90. ♂.

SUBFAMILY MACROXYELINAE

TRIBE XYELECIINI

Genus XYELECIA Ross

Xyelecia Ross, 1932. Ent. Soc. Amer., Ann. 25: 159.

Type-species: *Xyelecia nearctica* Ross. Orig. desig.

nearctica Ross. "Mont. and Colo.", Idaho, Oreg., Calif. Ecology: Larvae live in shoots. Host: *Abies* spp.

Xyelecia nearctica Ross, 1932. Ent. Soc. Amer., Ann. 25: 160. ♀.

Taxonomy: Smith, 1964. Pan-Pacific Ent. 40: 54-56 (male). — Smith, 1967. Ent. Soc. Amer., Ann. 60: 381-382 (larva).

TRIBE MACROXYELINI

Genus MACROXYELA Kirby

Macroxyela Kirby, 1882. List Hym. Brit. Mus. v. 1, p. 351.

Type-species: *Xyela ferruginea* Say. Orig. desig.

Protoxyela MacGillivray, 1912. Canad. Ent. 44: 295.

Type-species: *Xyela aenea* (!) Norton. Orig. desig.

Larvae of this genus feed on the leaves of deciduous trees.

Revision: Ross, 1932. Ent. Soc. Amer., Ann. 25: 164-166.

aenea (Norton). La., Mo., Tex.

Xyela aenea Norton, 1872. Amer. Ent. Soc., Trans. 4: 86. ♂.

bicolor MacGillivray. Ohio, Ill.

Macroxyela bicolor MacGillivray, 1912. Canad. Ent. 44: 294. ♂.

Macroxyela bicolor var. *harti* Ross, 1932. Ent. Soc. Amer., Ann. 25: 166. ♂.

ferruginea (Say). Ont. and Mass. s. to Va. w. to Nebr., Kans. and Okla.; one record from Moscow, Idaho. Host: *Ulmus*.

Xyela ferruginea Say, 1824. In Keating, Narr. Long's 2nd Exped. v.2, (App.), p. 310. ♀.

Xyela infusca Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 224. ♂.

Macroxyela obsoleta MacGillivray, 1912. Canad. Ent. 44: 294. ♀.

Macroxyela distincta MacGillivray, 1912. Canad. Ent. 44: 295. ♀.

Taxonomy: Smith, 1967. Ent. Soc. Amer., Ann. 60: 379-380 (larva).

Biology: Garlick, 1923. Canad. Ent. 55: 256-257.

Genus MEGAXYELA Ashmead

Megaxyela Ashmead, 1898. Psyche 8: 214.

Type-species: *Xyela major* Cresson. Orig. desig.

Odontophyes Konow, 1899. Wien. Ent. Ztg. 18: 42.

Type-species: *Pleroneura aviingrata* Dyar. Monotypic.

Paraxyela MacGillivray, 1912. Canad. Ent. 44: 294.

Type-species: *Xyela tricolor* Norton. Orig. desig.

Larvae of this genus feed on the leaves of deciduous trees.

Revision: Ross, 1932. Ent. Soc. Amer., Ann. 25: 161-164.

bicoloripes (Rohwer). Pa., Va., Miss.

Odontophyes bicoloripes Rohwer, 1924. Ent. Soc. Wash., Proc. 26: 215. ♀.

major (Cresson). N. Y. to Fla. w. to Kans., Okla., Tex. Host: *Carya illinoensis*.

Xyela major Cresson, 1880. Amer. Ent. Soc., Trans. 8: 34. ♀, ♂.

Odontophyes ferruginea Bridwell, 1906. Ent. News 17: 94. ♀.

Megaxyela langstoni Ross, 1936. Ent. News 47: 131. ♀, ♂. N. syn.

Taxonomy: Smith, 1967. Ent. Soc. Amer., Ann. 60: 380-381 (larva).

tricolor (Norton). N. Y., Ill., Kans. Host: *Carya*, *Juglans cinerea*.

Xyela tricolor Norton, 1862. Ent. Soc. Phila., Proc. 1: 114. ♂.

Pleroneura aviingrata Dyar, 1898. Psyche 8: 213. ♀, larva. N. syn.

Taxonomy: Smith, 1967. Ent. Soc. Amer., Ann. 60: 381 (larva).

Family PAMPHILIIDAE

Commonly called web-spinning sawflies, the larvae live solitarily or socially in a web or in a rolled leaf held by silk. The subfamily Cephalciinae is associated with conifers, and the subfamily Pamphiliinae is associated with deciduous trees or shrubs. Adults of most species are large, dorsoventrally flattened insects, and are sometimes common around the flowers of their host plants in the spring.

Taxonomy: Klima, 1937. In Hedicke, Hym. Cat., pt. 3, 84 pp. (catalog). — Benson, 1945. Roy.

Ent. Soc. London, Proc. Ser. B: Taxonomy 14: 25-33 (generic classification, world).

SUBFAMILY CEPHALCIINAE

Members of this subfamily are associated with conifers. There are two tribes and one, the Cephalciini, occurs in North America; the other, Caenolydini, is Palearctic.

TRIBE CEPHALCIINI

Genus CEPHALCIA Panzer

Cephalcia Jurine, 1801. Intell. Blatt Litt.-Ztg. Erlangen 1: 163. Suppressed, Internatl. Comm. Zool. Nomencl. Op. 135, 1939.

Cephalcia Panzer, 1805. Faunae Ins. German. heft 86, pls. 8, 9.

Type-species: *Cephalcia arvensis* Panzer. Desig. by Rohwer, 1911.

Cephalcia Jurine, 1807. Nouv. Meth. Class. Hym. Dipt. 67, t. 2, f. 7.

Liolyda Ashmead, 1898. Canad. Ent. 30: 209.

Type-species: *Lyda frontalis* Westwood. Orig. desig.

Revision: Middlekauff, 1958. Calif. Univ., Pubs., Ent. 14: 132-149. — Eidt, 1969. Canad. Ent. Soc., Mem. No. 59, 56 pp. (taxonomy, morphology, larval descriptions, life histories for most of North American species).

californica Middlekauff. Alta., Mont., Wyo., B. C., Calif. Host: *Pinus contorta*, *P. ponderosa*.

Cephalcia californica Middlekauff, 1958. Calif. Univ., Pubs., Ent. 14: 135. ♀.

distincta (MacGillivray). Newfoundland to N. Y., w. to Ont. and Mich. Host: *Abies balsamea*, *Tsuga canadensis*.

Cephalcia distincta MacGillivray, 1912. Canad. Ent. 44: 296. ♂.

Cephalcia rossi Middlekauff, 1958. Calif. Univ., Pubs., Ent. 14: 147. ♀.

fascipennis (Cresson). Que., N. S., Maine, N. H. w. to B. C. Host: *Picea engelmanni*, *P. glauca*, *P. mariana*, *P. pungens*, *P. rubens*.

Lyda fascipennis Cresson, 1880. Amer. Ent. Soc., Trans. 8: 31. ♀.

Pamphilus fascipennis Dalla Torre, 1894. Cat. Hym., v. 1, p. 427. Emend.

Cephalcia criddlei MacGillivray, 1912. Canad. Ent. 44: 296. ♀.

Cephalcia dissipator MacGillivray, 1923. Ill. Univ., Bul. 20(50): 8. ♂.

Biology: Eidt, 1965. Canad. Ent. 97: 148-153.

frontalis (Westwood). Ont. and Mich. s. to Ga. Host: *Pinus resinosa*, probably other pines.

Lyda frontalis Westwood, 1874. Thesaurus Ent. Oxon., p. 110, pl. 20, fig. 7. ♂.

Caenolyda onekama MacGillivray, 1923. Ill. Univ., Bul. 20(50): 8. ♀.

fulviceps (Rohwer). Que., N. B., N. H., Conn., N. J., Ont., Ark. Host: *Pinus resinosa*, *P. banksiana*.

Cephalcia fulviceps Rohwer, 1910. Canad. Ent. 42: 90. ♀.

hopkinsi (Rohwer). Ariz. Host: *Pinus ponderosa*(?). An adult collection record.

Cephalcia hopkinsi Rohwer, 1910. Canad. Ent. 42: 217. ♂.

marginata Middlekauff. N. S. and Que. s. to Va., W. Va. Host: *Pinus resinosa*, *P. strobus*.

Cephalcia marginata Middlekauff, 1953. Pan-Pacific Ent. 29: 133. ♀, ♂.

Biology: Daviault, 1956. Canad. Ent. 88: 488-492.

Morphology: Rivard, 1955. Canad. Ent. 87: 382-399.

nigra Middlekauff. N. S., N. B., Maine, Mich. Host: *Picea glauca*.

Cephalcia nigra Middlekauff, 1958. Calif. Univ., Pubs., Ent. 14: 143. ♀.

provancheri (Huard). Newfoundland s. to N. C., w. to Yukon, Alaska and s. in w. mountains to Colo., Utah, Nev., and Calif. Ecology: Widespread. Host: *Picea engelmanni*, *P. glauca*, *P. mariana*, *P. rubens*, *P. sitchensis*.

Lyda provancheri Huard, 1879. Nat. Canad. 11: 148. ♂.

Lyda nigropectus Cresson, 1880. Amer. Ent. Soc., Trans. 8: 32. ♀.

Pamphilus mathematicus Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 348. ♂.

Cephalcia punctata Rohwer, 1908. Canad. Ent. 40: 177. ♀.

semidea (Cresson). Que., N. B., Maine, N. H., Conn., N. Y., Ont., Mich. Host: *Picea glauca*, *P. mariana*.

Lyda semidea Cresson, 1880. Amer. Ent. Soc., Trans. 8: 31. ♀.

Caenolyda nortoni Rohwer, 1910. *Canad. Ent.* 42: 91. ♀.
Cephaleia jenseni MacGillivray, 1912. *Canad. Ent.* 44: 297. ♀.

Genus ACANTHOLYDA Costa

Revision: Middlekauff, 1958. *Calif. Univ., Pubs., Ent.* 14: 1-132.

Genus ACANTHOLYDA Subgenus ACANTHOLYDA Costa

Acanthocnema Costa, 1859. In Costa, *Fauna Regno. Napoli*, Imen. v. 3, p. 2. No included species. Suppressed, Internatl. Comm. Zool. Nomencl. Op. 290, 1954.

Type-species: *Tenthredo erythrocephala* Linnaeus. Desig. by Benson, 1945.

Acantholyda Costa, 1894. *Prosp. Imen. Ital.*, v. 3, p. 232.

Type-species: *Tenthredo erythrocephala* Linnaeus. Desig. by Rohwer, 1910.

apicalis (Westwood). N. C., Ga., Fla., Miss. Host: *Pinus taeda*.

Lyda apicalis Westwood, 1874. *Thesaurus Ent. Oxon.* p. 11, pl. 20, fig. 8. ♂.

atripes (Cresson). N. J., Pa., Md., N. C., Ga., Ark.

Lyda atripes Cresson, 1880. *Amer. Ent. Soc., Trans.* 8: 27. ♀.

erythrocephala (Linnaeus). Conn., N. Y., N. J., Pa., Ont.; Europe to Japan and Korea. Introd., first found in Pa. in 1925. Host: *Pinus austriaca*, *P. densiflora*, *P. montana*, *P. mughus*, *P. nigra*, *P. pungens*, *P. resinosa*, *P. strobus*, *P. sylvestris*. Pine false webworm.

Tenthredo erythrocephala Linnaeus, 1758. *Syst. Nat. Ed.* 10, v. 1, p. 558.

Biology: Griswold, 1939. *Jour. Econ. Ent.* 32: 467-468. —Eidt and McPhee, 1963. *Canad. Dept. For., For. Ent. Path. Branch, Bimonthly Prog. Rpt.* 19: 2.

marginiventris (Cresson). Mass., N. Y., N. J., Va., N. C.

Lyda marginiventris Cresson, 1880. *Amer. Ent. Soc., Trans.* 8: 29. ♀.

pini Rohwer. Que., Ont., and Mich. s. to Ga. Host: *Pinus resinosa*(?). An adult collection record.

Acantholyda pini Rohwer, 1911. *U. S. Natl. Mus., Proc.* 41: 377. ♀.

Acantholyda modesta MacGillivray, 1923. *Brooklyn Ent. Soc., Bul.* 18: 53. ♀.

poepigii (Brischke and Zaddach). Pa., N. C., Ga.

Lyda Poppigii Brischke and Zaddach, 1865. *Phys. Okonom. Gesell. Königsberg., Schr.* 6: 123. ♀.

runcinata Middlekauff. Tex., Colo., N. Mex., Ariz.

Acantholyda (Acantholyda) runcinata Middlekauff, 1958. *Calif. Univ., Pubs., Ent.* 14: 89. ♀, ♂.

tesselata (Klug). Que. and Mass. s. to Ga. and w. to Minn. Host: *Pinus banksiana*, *P. resinosa*.

Lyda tesselata Klug, 1808. *Mag. Gesell. Naturf. Freunde Berlin* 2: 276. ♀.

Lyda abdominalis Norton, 1862. *Ent. Soc. Phila., Proc.* 1: 199. ♀.

Genus ACANTHOLYDA Subgenus ITYCORISIA Konow

Itycorsia Konow, 1897. *K. K. Naturhist. Hofmus., Ann.* 12: 13.

Type-species: *Tenthredo hieroglyphica* Christ. Desig. by Rohwer, 1910.

aequorea Middlekauff. Calif.

Acantholyda (Itycorsia) aequorea Middlekauff, 1958. *Calif. Univ., Pubs., Ent.* 14: 93. ♀, ♂.

albomarginata (Cresson). Mich. w. to Colo., Alaska and Calif. Host: *Pinus monophylla*, *P. muricata*, *P. ponderosa*.

Lyda albomarginata Cresson, 1880. *Amer. Ent. Soc., Trans.* 8: 30. ♀.

Itycorsia Kincaidi Rohwer, 1910. *Canad. Ent.* 42: 91. ♀.

angulata (MacGillivray). N. B. and Que. s. to N. C. and w. to Minn. Host: *Pinus austriaca*, *P. banksiana*, *P. densiflora*, *P. rigida*, *P. strobus*.

Itycorsia angulata MacGillivray, 1912. *Canad. Ent.* 44: 295. ♀.

atrata (Cresson). Idaho, Nev., B. C., Wash., Oreg., Calif. Host: *Tsuga heterophylla*, *Abies concolor*(?).

Lyda atrata Cresson, 1880. *Amer. Ent. Soc., Trans.* 8: 30. ♂.

Itycorsia balata MacGillivray, 1923. *Ill. Univ., Bul.* 20(50): 18. ♀.

aurigera Middlekauff. Calif.

Acantholyda (Itycorsia) aurigera Middlekauff, 1958. Calif. Univ., Pubs., Ent. 14: 100. ♀.

balanata (MacGillivray). Alaska, B.C., Oreg., Calif. Host: *Pseudotsuga menziesii*, *Picea sitchensis*, *Picea* sp., *Abies* sp., *Tsuga* sp.

Itycorsia balanata MacGillivray, 1923. Ill. Univ., Bul. 20(50): 18. ♀.

bicolorata (Norton). Maine, N. Y., Md., Ark.

Lyda bicolorata Norton, 1869. Amer. Ent. Soc., Trans. 2: 332. ♀.

brunnicans (Norton). Mont., Wyo., and Colo. w. to B. C. and Calif. Host: *Pinus contorta*, *P. ponderosa*, *P. radiata*, *P. sabiniana*.

Lyda brunnicans Norton, 1864. Ent. Soc. Phila., Proc. 3: 15. ♀.

Lyda discolor Cresson, 1880. Amer. Ent. Soc., Trans. 8: 26. ♀.

Lyda morrisoni Cresson, 1880. Amer. Ent. Soc., Trans. 8: 27. ♀.

Lyda nevadensis Cresson, 1880. Amer. Ent. Soc., Trans. 8: 28. ♂.

Pamphilus brunneicans Dalla Torre, 1894. Cat. Hym., v. 1, p. 423. Emend.

brunniceps (Cresson). N. B., Que., Mass., N. Y., Ont., Minn.

Lyda brunniceps Cresson, 1880. Amer. Ent. Soc., Trans. 8: 29. ♀.

Pamphilus brunneiceps Dalla Torre, 1894. Cat. Hym., v. 1, p. 423. Emend.

bucephala (Cresson). Mont., B. C., Wash., Oreg., Calif. Host: *Pseudotsuga menziesii*, *Abies concolor*(?).

Lyda bucephala Cresson, 1880. Amer. Ent. Soc., Trans. 8: 29. ♂.

Lyda olympia MacGillivray, 1893. Canad. Ent. 25: 243. ♂.

burkei Middlekauff. Calif. Host: *Pinus radiata*.

Acantholyda (Itycorsia) burkei Middlekauff, 1958. Calif. Univ., Pubs., Ent. 14: 108. ♀, ♂.

chicoutimiensis (Huard). Ont., Que. Host: *Picea mariana*; *Pinus banksiana*(?).

Lyda chicoutimiensis Huard, 1879. Nat. Canad. 11: 149. ♀.

Taxonomy: Comeau, 1957. Nat. Canad. 84: 29 (nomenclature).

circumcincta (Klug). N. B., Que., Pa., Ga., Fla. Host: *Pinus banksiana*, *P. clausa*.

Lyda circumcincta Klug, 1808. Mag. Gesell. Naturf. Freunde Berlin 2: 279. ♀.

crocina Middlekauff. Idaho, Calif. Host: *Pinus muricata*, *P. sabiniana*.

Acantholyda (Itycorsia) crocina Middlekauff, 1958. Calif. Univ., Pubs., Ent. 14: 113. ♀, ♂.

depressa Middlekauff. Ariz.

Acantholyda (Itycorsia) depressa Middlekauff, 1958. Calif. Univ., Pubs., Ent. 14: 115. ♂.

floridana Greenbaum. North. Fla. Host: *Pinus elliottii* var. *elliottii*, *P. clausa*(?).

Acantholyda (Itycorsia) floridana Greenbaum, 1975. Fla. Ent. 58: 47-51. ♀, larva.

luteomaculata (Cresson). N. B. to Conn. w. to Ohio and Minn. Host: *Pinus banksiana*, *P. strobus*, *P. sylvestris*.

Lyda luteomaculata Cresson, 1880. Amer. Ent. Soc., Trans. 8: 28. ♀.

maculiventris (Norton). Labrador s. to N. C., w. to Wyo., B. C. and Calif. Ecology:

Widespread. Host: *Abies balsamea*, *Picea glauca*, *P. mariana*(?), *Pinus strobus*(?).

Lyda maculiventris Norton, 1869. Amer. Ent. Soc., Trans. 2: 333. ♂.

Itycorsia nivea Rohwer, 1910. Canad. Ent. 42: 92. ♀.

Acantholyda ferruginea Felt, 1917. Canad. Ent. 49: 192. ♂.

nigripes (Cresson). Nev., Oreg., Calif.

Lyda nigripes Cresson, 1880. Amer. Ent. Soc., Trans. 8: 28. ♂.

nigrita (Cresson). Nev., Calif.

Lyda nigrita Cresson, 1880. Amer. Ent. Soc., Trans. 8: 30. ♂.

ochrocera (Norton). Que. to Pa. w. to Wis.

Lyda ochrocera Norton, 1869. Amer. Ent. Soc., Trans. 2: 332. ♀, ♂.

ruficeps (Harrington). Que. s. to N. C. and w. to Minn.; B. C. Host: *Pinus banksiana*, *P. contorta*, *P. resinosa*.

Pamphilus ruficeps Harrington, 1893. Canad. Ent. 25: 62. ♀.

terminalis (Cresson). Colo., Nev., Wash., Oreg., Calif.

Lyda terminalis Cresson, 1880. Amer. Ent. Soc., Trans. 8: 29. ♀.

Itycorsia ballista MacGillivray, 1923. Ill. Univ., Bul. 20(50): 19. ♀.

thalictra Middlekauff. Tex., N. Mex. Host: *Pinus edulis*(?).

Acantholyda (Itycorsia) thalictra Middlekauff, 1958. Calif. Univ., Pubs., Ent. 14: 126. ♀.

verticalis (Cresson). Minn., Nebr., and Colo. w. to B. C. and Calif. Host: *Pinus contorta*, *P. monticola*, *P. ponderosa*, *P. radiata*.

Lyda verticalis Cresson, 1880. Amer. Ent. Soc., Trans. 8: 26. ♀.

Lyda similis Cresson, 1880. Amer. Ent. Soc., Trans. 8: 27. ♀.

Lyda montivaga Cresson, 1880. Amer. Ent. Soc., Trans. 8: 28. ♂.

Lyda rufiventris Cresson, 1880. Amer. Ent. Soc., Trans. 8: 29. ♂.

Itycorsia luteopicta Rohwer, 1910. Canad. Ent. 42: 92. ♀.

zappei (Rohwer). Que. to N. J. w. to Mich. Host: *Pinus austriaca*, *P. rigida*, *P. strobus*.

Itycorsia zappei Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 209. ♀, ♂.

SUBFAMILY PAMPILIINAE

Members of this subfamily are associated with deciduous trees and shrubs. The Nearctic species of Neurotomini are confined to plants of the family Rosaceae. There are two tribes, and both tribes are Holarctic.

TRIBE NEUROTOMINI

Genus NEUROTOMA Konow

Neurotoma Konow, 1897. K. K. Naturhist. Hofmus., Ann. 12: 18.

Type-species: *Tenthredo flaviventris* Retzius. Desig. by Rohwer, 1910.

Neurotoma subg. *Gongylocorsia* Konow, 1897. K. K. Naturhist. Hofmus., Ann. 12: 19.

Type-species: *Lyda mandibularis* Zaddach. Monotypic.

Gongylocorsia(!) Ashmead, 1898. Canad. Ent. 30: 208.

Revision: Middlekauff, 1940. Canad. Ent. 72: 201-206 (adults and larvae). — Middlekauff, 1958. Calif. Univ., Pubs., Ent. 14: 149-158.

crataegi Middlekauff. Mass., N. Y., Mich., Ill., Wis., Man. Host: *Crataegus succulenta*, *C. brainerdi*.

Neurotoma crataegi Middlekauff, 1940. Canad. Ent. 72: 202. ♀.

fasciata (Norton). Que. to Fla. w. to Wis. and Mo. Host: *Prunus serotina*, *P. pennsylvanica*.

Lyda fasciata Norton, 1862. Ent. Soc. Phila., Proc. 1: 200. ♀.

Biology: Pearsall, 1902. Canad. Ent. 34: 214-216.

inconspicua (Norton). Que. and Mass. to Pa. w. to S. Dak., Mont. and B. C., Ark. and Kans.

Host: *Prunus americana*, *P. cerasus*, *P. besseyi*, *P. davidiana*, *P. domestica*, *P. nana*, *P. nigra*, *P. pennsylvanica*, *P. virginiana*, and probably other species of *Prunus*. Plum web-spinning sawfly.

Lyda inconspicua Norton, 1869. Amer. Ent. Soc., Trans. 2: 350. ♀.

Lyda spoliata Williams, 1896. S. Dak. Agr. Expt. Sta., Bul. 48: 14-17. ♀, ♂.

Lyda rufipes Marlatt, 1896. In Williams, S. Dak. Agr. Expt. Sta., Bul. 48: 17. ♀, ♂.

Biology: Severin, 1920. S. Dak. State Ent. Tech. Bul. 1, 53 pp. — Severin, 1920. S. Dak. Agr. Expt. Sta., Bul. 190: 224-251.

willi Middlekauff. N. Y., Pa. Host: *Crataegus* sp.(?). An adult collection record.

Neurotoma willi Middlekauff, 1958. Calif. Univ., Pubs., Ent. 14: 158. ♂.

Taxonomy: Middlekauff, 1965. N. Y. Ent. Soc., Jour. 73: 238 (female, distribution, host).

TRIBE PAMPILIINI

Genus PAMPILIUS Latreille

Pamphilus Latreille, 1802. Hist. Nat. Crust. Ins., v. 8, p. 303.

Type-species: *Tenthredo sylvatica* Linnaeus. Monotypic.

Lyda Fabricius, 1804. Systema Piezatorum, p. 43.

Type-species: *Tenthredo sylvatica* Linnaeus. Desig. by Curtis, 1831.

Anoplolyda Costa, 1894. Prosp. Imen. Ital., v. 3, p. 233.

Type-species: *Lyda alternans* Costa. Desig. by Rohwer, 1910.

Kelidoptera Konow, 1897. K. K. Naturhist. Hofmus., Ann. 12: 20.

Type-species: *Lyda maculipennis* Stein. Monotypic.

Bactrocera Konow, 1897. K. K. Naturhist. Hofmus., Ann. 12: 21.

Type-species: *Tenthredo vafer* Linnaeus. Desig. by Rohwer, 1910.

Pseudocephaleia Zirngiebl, 1937. Embrik Strand 60. Geburtsf. Festschr. (Riga) 3: 339.

Type-species: *Pseudocephaleia brachycerus* Zirngiebl. Monotypic.

Pamphilus subg. *Onycholyda* Takeuchi, 1938. *Tenthredo* 2: 218.

Type-species: *Pamphilus sulphureipes* Kirby. Orig. desig.

Since this section was completed, Benes (1972) defined the genera of the Pamphiliini. He recognized four genera: *Pseudocephaleia* Zirngiebl, *Kelidoptera* Konow, *Pamphilus* Latreille, and *Onycholyda* Takeuchi. The latter two genera are found in North America, and, of the species listed below in *Pamphilus*, the following would belong in *Onycholyda*: *amplectus*, *excavatus*, *luteicornis*, *multisignatus*, *nigritibialis*, *quebecensis*, *rufofasciatus*, and *silkensis*. These species that belong in *Onycholyda* are the ones that are found in couplets 2 to 9 and 24 to 31 in Middlekauff's (1964) key.

Revision: Middlekauff, 1964. Calif. Univ., Pubs., Ent. 38: 1-80.

Taxonomy: Benes, 1972. Acta Ent. Bohem. 69: 378-395 (generic classification of the Pamphiliini). — Benes, et al., 1973. Bul. Zool. Nomencl. 30: 95-96 (request for designation of *Pamphilus viriditibialis* Takeuchi as type-species of *Onycholyda* Takeuchi).

amplectus (Fabricius). Maine to Fla. w. to Ill. and Tex. Host: *Rubus*.

Lyda amplecta Fabricius, 1804. Systema Piezatorum, p. 46.

Lyda plagiata Klug, 1808. Mag. Gesell. Naturf. Freunde Berlin, 2: 278. ♀.

Lyda insignis Brischke and Zaddach, 1865. Phys. Okonom. Gesell. Königsberg, Schr. 6: 179. ♂.

burquei (Provancher). Que., Ont., Va.

Lyda burquei Provancher, 1878. Nat. Canad. 10: 204. ♀.

cinctus Harrington. Que., N. Y., Ont., Mich., Wis.

Pamphilus cinctus Harrington, 1893. Canad. Ent. 25: 62. ♀.

excavatus (Norton). Que. to Va. w. to Minn.; B. C. Host: *Cornus stolonifera*.

Lyda excavata Norton, 1869. Amer. Ent. Soc., Trans. 2: 337. ♂.

greenei Rohwer. Conn., Pa., Mich.

Pamphilus greenei Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 273. ♀.

infuscatus Middlekauff. Maine, Que., Ont., Alta., B. C. Host: *Populus tremuloides*.

Pamphilus infuscatus Middlekauff, 1964. Calif. Univ., Pubs., Ent. 38: 24. ♀, ♂.

luteicornis (Norton). N. S. and N. B. s. to Fla. w. to Ill., Minn. and Alta. Host: *Rubus*.

Lyda luteicornis Norton, 1869. Amer. Ent. Soc., Trans. 2: 339. ♀.

Lyda harringtoni Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym. p. 17. ♀.

Pamphilus ocellatus Rohwer, 1910. Canad. Ent. 42: 218. ♀.

Pamphilus rubi Rohwer, 1910. Canad. Ent. 42: 219. ♀.

Pamphilus dentatus MacGillivray, 1912. Canad. Ent. 44: 297. ♀, ♂.

Pamphilus fletcheri MacGillivray, 1912. Canad. Ent. 44: 298. ♀, ♂.

Biology: Fletcher, 1900. Rpt. Ent. Bot. Dom. Expt. Farm Ottawa, Sess. Paper 8a: 180-181 (*multisignatus*, nec Norton). — Walden, 1913. Conn. (State) Agr. Expt. Sta., Ann. Rpt., 36: 236-240 (*dentatus*). — Britton, 1913. Jour. Econ. Ent. 6: 197-199 (*dentatus*).

multisignatus (Norton). Ont., Mich., Ill. w. to Colo., N. Mex. and B. C.

Lyda multisignata Norton, 1864. Ent. Soc. Phila., Proc. 3: 15. ♀.

Lyda cavifrons Cresson, 1865. Ent. Soc. Phila., Proc. 4: 246. ♂.

Lyda multineata (!) Norton, 1869. Amer. Ent. Soc., Trans. 2: 332.

Bactrocera pugnax Rohwer, 1908. N. Y. Ent. Soc., Jour. 16: 103. ♀. Preocc.

Anoplolyda saeva Rohwer, 1910. Canad. Ent. 42: 218. N. name.

nigritibialis Rohwer. Que. to N. C. w. to S. D., Colo., and Alta.

Pamphilus nigritibialis Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 205. ♂.

Pamphilus transversus MacGillivray, 1912. Canad. Ent. 44: 297. "♀" = ♂.

ochreipes (Cresson). Que. to N. C. and Ala., w. to Alaska and B. C. Host: *Viburnum opulus*.

Lyda ochreipes Cresson, 1880. Amer. Ent. Soc., Trans. 8: 30. ♀.

- Lyda perplexa* Cresson, 1880. Amer. Ent. Soc., Trans. 8: 31. ♀.
 Biology: Lindquist and Harnden, 1970. Canad. Ent. 102: 95-97.
ocreatus (Say). Que. to N. C. w. to Ill., Man., Minn. Host: *Corylus*, *Cornus*(?).
Lyda ocreata Say, 1836. Boston Jour. Nat. Hist. 1: 222. ♀.
 Biology: Dyar, 1895. Ent. News 6: 199-200 (with larva description).
pacificus (Norton). Colo., Idaho, w. to B. C. and Calif. Host: *Rosa californica*.
Lyda pacifica Norton, 1869. Amer. Ent. Soc., Trans. 2: 338. ♀.
Lyda melliventris Cresson, 1880. Amer. Ent. Soc., Trans. 8: 32. ♂.
 Biology: Middlekauff, 1964. Calif. Univ. Pubs., Ent. 38: 41-42.
palachei (Ashmead). Alaska (Kodiak).
Bactrocera palachei Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 254. ♀.
pallimaculus (Norton). Que. to Ga., w. to Colo. and B. C. Host: *Rosa*(?). An adult collection record.
Lyda pallimacula Norton, 1869. Amer. Ent. Soc., Trans. 2: 337. ♀.
Lyda pallidimacula Dalla Torre, 1894. Cat. Hym., v. 1, p. 435. Emend.
persicum MacGillivray. Que. to Fla. w. to Minn., Nebr., Tex. Ecology: A pest of peach. Host: *Prunus persica*, *Prunus serotina*.
Pamphilius persicum MacGillivray, 1907. Canad. Ent. 39: 308. ♀.
Pamphilius perseae Rohwer, 1926. In Leonard, Cornell Univ. Agr. Expt. Sta., Mem. 101: 872. Emend.
Pamphilius persicus Klima, 1937. Hym. Cat., pt. 3, p. 45. Emend.
Pamphilius unalutatus MacGillivray, 1920. Brooklyn Ent. Soc., Bul. 15: 112. ♀.
 Biology: Walden, 1907. U. S. Dept. Agr., Bur. Ent. Bul. 67: 85-87. — Walden, 1908. Conn. (State) Agr. Expt. Sta., Ann. Rpt., pp. 285-300.
 Morphology: Crampton, 1919. Ent. Soc. Wash., Proc. 21: 219 (genitalia).
phyllisae Middlekauff. N. B. to N. C. w. to Ill. and Minn. Host: *Quercus rubra*.
Pamphilius phyllisae Middlekauff, 1964. Calif. Univ., Pubs., Ent. 38: 49. ♀, ♂.
 Biology: Eidt and Nichols, 1970. Canad. Ent. 102: 53-63.
pullatus (Cresson). Newfoundland to Va., w. to Ill., Mo. Host: *Viburnum dentatum*.
Lyda pullata Cresson, 1880. Amer. Ent. Soc., Trans. 8: 31. ♀.
quebecensis (Provancher). Que. to N. C., w. to Mich.
Lyda quebecensis Provancher, 1878. Nat. Canad. 10: 205. ♀.
rileyi (Cresson). Conn. to W. Va., w. to Mich., Iowa, Mo. Host: *Amelanchier*.
Lyda rileyi Cresson, 1880. Amer. Ent. Soc., Trans. 8: 32. ♀.
Pamphilius subcavifrons Rohwer, 1910. Canad. Ent. 42: 219. ♂.
rufofasciatus (Norton). Newfoundland to Ga. w. to Minn., Man., Colo., Alta.; Siberia.
Lyda rufo-fasciata Norton, 1869. Amer. Ent. Soc., Trans. 2: 340. ♀.
Lyda rufocincta Cresson, 1880. Amer. Ent. Soc., Trans. 8: 32. ♂.
 Taxonomy: Benes, 1972. Acta Ent. Bohem. 69: 388 (in *Onycholyda*; a holarctic sp.).
semicinctus (Norton). Que. to N. C. w. to Tenn. and Ind. Host: *Amelanchier canadensis*, *Amelanchier* sp., *Pyrus malus*, *Prunus virginiana*. Some may not represent true hosts.
Lyda semicincta Norton, 1862. Ent. Soc. Phila., Proc. 1: 144. ♀.
sitkensis (Kincaid). Idaho, Nev., Alaska, B. C., Wash., Oreg., Calif. Host: *Rubus parviflorus*, *R. vitifolius*, and probably other species of *Rubus*.
Bactrocera sitkensis Kincaid, 1900. Wash. Acad. Sci., Proc. 2: 344. ♀.
Pamphilius fulvifrons Rohwer, 1910. Canad. Ent. 42: 218. ♀.
Pamphilius fortuitus MacGillivray, 1923. Ill. Univ., Bul. 20(50): 27. ♀.
 Biology: Middlekauff, 1964. Calif. Univ., Pubs., Ent. 38: 62-63.
uniunguis Middlekauff. N. C., Man., Minn.
Pamphilius uniunguis Middlekauff, 1964. Calif. Univ., Pubs., Ent. 38: 65. ♀.
vernalis Middlekauff. Man., Nebr.
Pamphilius vernalis Middlekauff, 1964. Calif. Univ., Pubs., Ent. 38: 66. ♀.

UNPLACED TAXA OF PAMPHILIIDAE

Lyda canadensis Norton, 1869. Amer. Ent. Soc., Trans. 2: 336. ♂. No locality given.

Tarpa scripta Say, 1824. *In* Keating, Narr. Long's 2nd Exped., v. 2, (App.), p. 312. N. W. T. and Ark.

Superfamily TENTHREDINOIDEA

Family PERGIDAE

This is a highly diversified and large family in the Neotropical and Australian regions. Only one genus is found for certain in North America north of Mexico.

Taxonomy: Benson, 1938. Roy. Ent. Soc. London, Trans. 87: 376-382 (key to subfamilies of world).

SUBFAMILY ACORDULECERINAE

Genus ACORDULECERA Say

Acordulecera Say, 1836. Boston Jour. Nat. Hist. 1: 209.

Type-species: *Acordulecera dorsalis* Say. Monotypic.

Thulea Say, 1836. Boston Jour. Nat. Hist. 1: 213.

Type-species: *Thulea nigra* Say. Monotypic.

Perantherix Westwood, 1874. Thesaurus Ent. Oxon., p. 109.

Type-species: *Perantherix pumilio* Westwood. Monotypic.

Acorduleceros Konow, 1898. Ent. Nachr. 24: 250.

This genus is confined to the New World where the largest number of species are found in South America. In the United States and Canada, species of this genus are most abundant in the eastern deciduous forests though several species are found as far west as Arizona. These western forms have not been identified and are not listed below. The adults are small with short, six-segmented antennae, and the larvae feed externally on the foliage of the host plants.

dorsalis Say. Que. to Fla. w. to Iowa, Okla., Tex. Host: *Quercus*, *Carya*, *Juglans*, *Castanea*.

Either a species highly variable in coloration or a species complex.

Acordulecera dorsalis Say, 1836. Boston Jour. Nat. Hist. 1: 209. ♀, ♂.

Acordulecera saginata Provancher, 1882. Nat. Canad. 13: 290. ♀.

Acorduleceros biclinius Konow, 1898. Ent. Nachr. 24: 253. ♀.

Acordulecera media MacGillivray, 1908. Canad. Ent. 40: 168. ♀.

Acordulecera minima MacGillivray, 1908. Canad. Ent. 40: 168. ♀.

Acordulecera maxima MacGillivray, 1908. Canad. Ent. 40: 168. ♀.

Acordulecera maura MacGillivray, 1908. Canad. Ent. 40: 168. ♀.

Acordulecera marina MacGillivray, 1908. Canad. Ent. 40: 170. ♂.

Acordulecera munda MacGillivray, 1908. Canad. Ent. 40: 169. ♀.

Acordulecera antennata Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 246. ♂. N. syn.

Acordulecera foveata Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 247. ♀, ♂.

Acordulecera erythrogastra Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 248. ♀. N. syn.

Acordulecera parva Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 248. ♂. N. syn.

Acordulecera caryae Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 248. ♀, ♂.

- Acordulecera nigrata* Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 249. ♀. N. syn.
Acordulecera portiae Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 249. ♀.
Acordulecera basirufa Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 250. ♀. N. syn.
Acordulecera flavipes Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 250. ♀.
Acordulecera nigratarsis Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 250. ♀.
Acordulecera quercus Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 251. ♀. N. syn.
Acordulecera hicoloriae Rohwer, 1917. U. S. Natl. Mus., Proc. 53: 157. ♀. N. syn.
Acordulecera melega MacGillivray, 1921. Brooklyn Ent. Soc., Bul. 16: 23. ♂.
Acordulecera musta MacGillivray, 1921. Brooklyn Ent. Soc., Bul. 16: 23. ♂.
maculata MacGillivray. N. Y., Pa., Ill.
Acordulecera maculata MacGillivray, 1908. Canad. Ent. 40: 169. ♀, ♂.
mellina MacGillivray. Conn. to Ga. w. to Mich., Ill., Okla.
Acordulecera mellina MacGillivray, 1908. Canad. Ent. 40: 169. ♀.
Acordulecera mixta MacGillivray, 1908. Canad. Ent. 40: 169. ♀, ♂.
pellucida (Konow). Mass. and Pa. w. to Nebr., Kans., Tex.
Acordulecera pellucidus Konow, 1898. Ent. Nachr. 24: 253. ♀.
Acordulecera minuta MacGillivray, 1908. Canad. Ent. 40: 169. ♀.
Acordulecera scutellata Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 247. ♀, ♂. N. syn.
 Taxonomy: Smith, 1973. Ent. Soc. Wash., Proc. 75: 30.

SUBFAMILY LOBOCERATINAE

Genus SKELOSZYGONIA Malaise

Skeloszygonia Malaise, 1935. Ent. Tidskr. 56: 161.

Type-species: *Skeloszygonia spinipes* Malaise. Orig. desig.

The single species in this genus was recorded from Texas; this is a dubious record for this Brazilian form.

spinipes Malaise. "Tex."; Brazil (Rio de Janeiro).

Skeloszygonia spinipes Malaise 1935. Ent. Tidskr. 56: 161. ♂.

Taxonomy: Conde, 1939 Deut. Ent. Gesell., Mitt. 9: 49 ("Tex." record).

Family ARGIDAE

This family is cosmopolitan. It is the second largest sawfly family, with over 800 species. The tropical regions of the world contain the largest number of species, over 100 species of *Arge* alone having been described from tropical Africa. Over 300 species of the family have been described from the Neotropical Region, even though the fauna there is virtually unexplored. In America north of Mexico, the greater number of species is found in the southwestern United States. Hosts and habits are various, but most species feed externally on the foliage of the host plant in the larval stage. Only one North American species is known to be a leafminer, *Schizocerella pilicornis* (Holmgren) in purslane.

Taxonomy: Benson, 1938. Roy. Ent. Soc. London, Trans. 87: 371-375 (key to subfamilies, world). —Malaise, 1941. Ent. Tidskr. 62: 131-140 (key to world genera). —Wong, 1951. Ont. Ent. Soc., 82nd Ann. Rpt., p. 53 (cocoons). —Benson, 1963. Ann. and Mag. Nat. Hist. (13) 5: 631 (tribes of Arginae and genera of Scobini). —Smith, 1969. Amer. Ent. Soc., Trans. 95: 439-457 (Nearctic genera). —Smith, 1972. Amer. Ent. Soc., Trans. 98: 163-184 (N. Amer. larvae).

SUBFAMILY ARGINAE

Genus ARGE Schrank

Cryptus Jurine, 1801. Intell. Blatt. Litt.-Ztg. Erlangen, v. 1, p. 163. Suppressed by Internatl. Comm. Zool. Nomencl., Op. 135, 1936.

Arge Schrank, 1802. Fauna Boica, p. 209.

Type-species: *Tenthredo enodis* Linnaeus. Desig. by Rohwer, 1911.

Hylotoma Latreille, 1802. Hist. Nat. Crust. Ins., v. 3, p. 302.

Type-species: *Tenthredo rosae* Linnaeus. Monotypic.

Corynia Imhof and Labram, 1836. Ins. Schweiz., p. 23.

Type-species: *Corynia rosarum* Imhof and Labram. Desig. by Rohwer, 1911.
Acanthoptenos Ashmead, 1898. Canad. Ent. 30: 212.

Type-species: *Acanthoptenos weithii* Ashmead. Orig. desig.

Rhopalospiria Enderlein, 1920. Gesell. f. Naturf. Freunde, Sitzber. 9: 116. N. syn.

Type-species: *Rhopalospiria rubiginosa* (Beauvois). Orig. desig.

A large genus not represented only in the Neotropical and Australian regions. This is the most widespread genus in North America and is found from Canada and Alaska south to northern Mexico. The larvae feed on the foliage of their hosts. Several of the segregates below are species complexes, the taxonomy of which is yet to be worked out.

abdominalis (Leach). Ga., Fla.

Hylotoma abdominalis Leach, 1817. Zool. Misc., v. 3, p. 123. ♀.

borealis (Kirby). N. B., Maine, Mass., Ont. (St. Martin Falls, Hudson's Bay).

Hylotoma borealis Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 66. ♀.

caerulea (Dalla Torre). Maine to Md.

Hylotoma caerulea Norton, 1864. Ent. Soc. Phila., Proc. 3: 5. ♀. Preocc. by Latreille, 1805.

Hylotoma caerulea Dalla Torre, 1894. Cat. Hym., v. 1, p. 327. N. name.

clavicornis (Fabricius). Newfoundland to Alaska s. to Ga., N. Mex., Calif.; Holarctic (?).

Ecology: Widespread. Host: *Amelanchier*, *Azalea*, *Betula*, *Carpinus*, *Corylus*, *Crataegus*, *Prunus*, *Salix*. A species complex.

Tenthredo clavicornis Fabricius, 1793. Ent. System., v. 2, p. 108. ♀.

Hylotoma virescens Klug, 1814. Mag. Gesell. Naturf. Freunde Berlin 6: 296. ♀, ♂.

Hylotoma MacLeayi Leach, 1817. Zool. Misc., v. 3, p. 122. ♀.

Hylotoma analis Leach, 1817. Zool. Misc., v. 3, p. 123. ♂.

Hylotoma mellina Cresson, 1880. Amer. Ent. Soc., Trans. 8: 3. ♀.

Hylotoma cyra Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 66. ♀.

Hylotoma mentzeliae Cockerell, 1898. Ann. and Mag. Nat. Hist. (7)2: 456. N. syn.

Acanthoptenos weithii Ashmead, 1898. Canad. Ent. 30: 212.

Arge inops Konow, 1906. Ztschr. System. Hym. Dipt. 6: 181. ♂.

Hylotoma nigrescens Rohwer, 1909. Canad. Ent. 41: 13. ♂. N. syn.

Hylotoma onerosa MacGillivray, 1923. Psyche 30: 80. ♀, ♂.

Hylotoma sparta MacGillivray, 1923. Ill. Univ., Bul. 20(50): 18. ♀, ♂.

Arge criddlei Garlick, 1927. Canad. Ent. 59: 182. ♀, ♂.

Arge imitans Garlick, 1927. Canad. Ent. 59: 182. ♀, ♂.

Biology: Jack, 1891. Psyche 6: 11 (*macleayi*). —Will, 1947. Pa. Acad. Sci., Proc. 16: 47-49 (*macleayi*). —Will, 1959. Pa. Acad. Sci., Proc. 33: 219 (*macleayi*).

coccinea (Fabricius). Conn. to Fla. w. to Tex. Host: *Rhus* spp.

Hylotoma coccinea Fabricius, 1804. Systema Piezatorum, p. 24.

Tenthredo rubiginosa Beauvois, 1805. Ins. Afr. Amer., v. 2, p. 98. ♀. N. syn.

Hylotoma miniata Klug, 1814. Mag. Gesell. Naturf. Freunde Berlin 6: 298. ♂.

Hylotoma rubra Klug, 1814. Mag. Gesell. Naturf. Freunde Berlin 6: 299. ♀.

Hylotoma erythrosoma Leach, 1817. Zool. Misc., v. 3, p. 124. ♀. N. syn.

Hylotoma scutellata Lepeletier, 1823. Monog. Tenthred., p. 47.

Hylotoma sphinx Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 68. ♂. N. syn.

humeralis (Beauvois). Maine to Fla. w. to Minn., Kans., Tex. Host: Poison-ivy.

Tenthredo humeralis Beauvois, 1805. Ins. Afr. Amer., v. 2, p. 99. ♀.

Hylotoma sanguinea Klug, 1814. Mag. Gesell. Naturf. Freunde Berlin 6: 299. ♀.

Hylotoma scutellata Say, 1836. Boston Jour. Nat. Hist. 1: 211. ♀. N. syn.

Hylotoma grandis Rohwer, 1909. Canad. Ent. 41: 14. ♂. N. syn.

ochropa (Gmelin). Ont.; Europe to Siberia, Middle East. Introduced (?) into N. Amer. Host: *Rosa*.

Tenthredo ochropa Gmelin, 1790. In Linnaeus, Syst. Nat., Ed. 13, v. 1, pt. 5, p. 2657.

Taxonomy: Malaise and Benson, 1934. Archiv for Zool. 26A: 7-8, 13 (= *rosae* of authors, *nec* Linnaeus).

pectoralis (Leach). Maine to Fla. w. to Ont., Sask., Mich., Ill., Mo., Tex. Host: *Alnus*, *Betula*, *Corylus*, *Crataegus*, *Salix*. Birch sawfly. Probably a species complex.
Hylotoma pectoralis Leach, 1817. Zool. Misc., v. 3, p. 124. ♀.
Hylotoma dulciaria Say, 1824. In Keating, Narr. Long's 2nd Exped., (App.). p. 314. ♀.
Arge salicis Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 206. ♀, ♂.

Biology: Schwarz, 1909. Ent. Soc. Wash., Proc. 11: 106-108. —Wong, 1954. Canad. Ent. 86: 154. —Smirnov, 1971. Ent. Soc. Quebec, Ann. 16: 86-88 (protozoan parasite).

scapularis (Klug). Maine to Fla. w. to Ont., Minn., Mo., Tex. Host: *Alnus*, *Betula*, *Quercus*, *Ulmus*. Probably a species complex.

Hylotoma scapularis Klug, 1814. Mag. Gesell. Naturf. Freunde Berlin 6: 299. ♂.
Hylotoma xanthothorax Leach, 1817. Zool. Misc., v. 3, p. 124. ♀.
Hylotoma calcanea Say, 1836. Boston Jour. Nat. Hist. 1: 211.

Biology: Jack, 1891. Psyche 6: 11.

spiculata (MacGillivray). Ariz.; Mexico.

Hylotoma spiculata MacGillivray, 1907. Canad. Ent. 39: 308. ♀.

SUBFAMILY ATOMACERINAE

Genus ATOMACERA Say

Atomacera Say, 1836. Boston Jour. Nat. Hist. 1: 212.

Type-species: *Atomacera debilis* Say. Desig. by Malaise, 1937.

Micrarage Ashmead, 1898. Canad. Ent. 30: 213.

Type-species: *Atomacera ruficollis* Norton. Orig. desig.

Braunsiola Konow, 1899. Ent. Nachr. 25: 312.

Type-species: *Braunsiola truculenta* Konow. Monotypic.

Spegazziniella Jorgensen, 1913. Buenos Aires Mus. Nac. de Hist. Nat., An. 25: 260.

Type-species: *Spegazziniella ovata* Jorgensen. Monotypic.

Argina Forsius, 1925. Arkiv for Zool. 17A: 2. Preocc.

Type-species: *Argina nubilipennis* Forsius. Monotypic.

Arginella Forsius, 1926. Notulae Ent. 5: 207. N. name for *Argina*.

A genus distributed throughout most of the New World but more highly developed in the tropics. Larvae feed on the foliage of the host plant.

Revision: Malaise, 1942. Ent. Tidskr. 63: 107-110 (Neotropical species). —Smith, 1969. Amer. Ent. Soc., Trans. 95: 440-446 (Nearctic species).

debilis Say. Ont., Mass. to Fla. w. to Minn., Kans., Ark. Host: *Desmodium canadense*, *D. glutinosum*, and probably other species; *Lespedeza*.

Atomacera debilis Say, 1836. Boston Jour. Nat. Hist. 1: 212. ♂.

Atomacera ruficollis Norton, 1864. Ent. Soc. Phila., Proc. 3: 6. ♀.

Atomacera desmodii Dyar, 1900. N. Y. Ent. Soc., Jour. 8: 26. ♀, ♂. Larva.

Taxonomy: Smith, 1972. Amer. Ent. Soc., Trans. 98: 167 (larva).

Biology: Dyar, 1900. N. Y. Ent. Soc., Jour. 8: 26. —Weiss and Lott, 1923. Ent. News 34: 167.

—Lindquist and Trinnell, 1965. Canad. Ent. 97: 181-184.

decepta Rohwer. Conn. to Fla. w. to Mo., Tex. Host: *Hibiscus militaris*, *H. moscheutos* hybrid.

Atomacera decepta Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 382. ♀.

Taxonomy: Smith, 1972. Amer. Ent. Soc., Trans. 98: 167 (larva).

Biology: Dyar, 1900. N. Y. Ent. Soc., Jour. 8: 26 (*ruficollis*, nec Norton). —Tippins, 1965. Jour. Econ. Ent. 58: 161.

ebena Smith. S. Ariz.

Atomacera ebena Smith, 1969. Amer. Ent. Soc., Trans. 95: 445. ♀.

SUBFAMILY STERICTIPHORINAE

Genus STERICTIPHORA Billberg

Sterictiphora Billberg, 1820. Enum. Ins. Mus. Billberg, p. 99.

Type-species: *Hylotoma furcata* Fabricius. Monotypic.

Schizocerus Berthold, 1827. Nat. Fam. Thierr., p. 441.

Type-species: *Hylotoma furcata* Villers. Desig. by Westwood, 1840.

Cyphona Dahlbom, 1835. Conspectus Tenthred., Siricid., Oryssin. Scan., p. 8.

Type-species: *Hylotoma furcata* Villers. Desig. by Rohwer, 1911.

A small Holarctic genus. Larvae feed on the foliage of the host plants most of which appear to be species of *Prunus*.

Revision: Smith, 1969. Amer. Ent. Soc., Trans. 95: 446-455.

cruenta Smith. Maine to N. C. w. to Mich. Host: *Prunus pennsylvanicus*.

Stictiphora cruenta Smith, 1969. Amer. Ent. Soc., Trans. 95: 450. ♀.

maura (Cresson). Utah, Nev., Oreg., Calif. Host: *Prunus*

Schizocera maura Cresson, 1880. Amer. Ent. Soc., Trans. 8: 3. ♂.

prunivora (Dyar). Maine s. to N. Y., Pa. Host: *Prunus*, *Amelanchier*.

Schizocerus prunivorus Dyar, 1897. N. Y. Ent. Soc., Jour. 5: 23. larva.

sericea (Norton). Maine to N. J., Pa. w. to Ill.

Schizocerus sericeus Norton, 1867. Amer. Ent. Soc., Trans. 1: 55. ♀.

serotina Smith. Maine to Va. Host: *Prunus serotina*.

Stictiphora serotina Smith, 1969. Amer. Ent. Soc., Trans. 95: 452. ♀, ♂.

Taxonomy: Smith, 1972. Amer. Ent. Soc., Trans. 98: 169 (larva).

transversa Smith. Md., Alta., Alaska.

Stictiphora transversa Smith, 1969. Amer. Ent. Soc., Trans. 95: 454. ♀.

Genus APROSTHEMA Konow

Aprosthemina Konow, 1899. Ent. Nachr. 25: 149.

Type-species: *Hylotoma brevicornis* Fallen. Desig. by Rohwer, 1911.

Lyrola Ross, 1937. Ill. Biol. Monog. 15(2): 55.

Type-species: *Schizocera brunniventris* Cresson. Orig. desig.

A small Holarctic genus with two Nearctic representatives, both of which are found in western North America.

Revision: Smith, 1971. Amer. Ent. Soc., Trans. 97: 546-549.

breviantennatum Smith. Oreg., Calif.

Aprosthemina brevantennatum Smith, 1971. Amer. Ent. Soc., Trans. 97: 546. ♀, ♂.

brunniventris (Cresson). Wash., Oreg., Nev., Calif. Host: *Hosackia*.

Schizocera brunniventris Cresson, 1880. Amer. Ent. Soc., Trans. 8: 2. ♀, ♂.

Schizocera tristis Cresson, 1880. Amer. Ent. Soc., Trans. 8: 52. ♀, ♂.

Schizocera tristis var. *fumipennis* Dyar, 1893. Canad. Ent. 25: 195. ♀, ♂, larva.

Taxonomy: Smith, 1972. Amer. Ent. Soc., Trans. 98: 170 (larva).

Biology: Dyar, 1893. Canad. Ent. 25: 195.

Genus NEOPTILIA Ashmead

Neoptilia Ashmead, 1898. Canad. Ent. 30: 213.

Type-species: *Neoptilia mexicana* Ashmead. Orig. desig.

Pseudocypophona Ashmead, 1898. Canad. Ent. 30: 211.

Type-species: *Pseudocypophona mexicana* Ashmead. Orig. desig.

Rhagonyx Konow, 1903. Ztschr. System. Hym. Dipt. 3: 108.

Type-species: *Rhagonyx lituratus* Konow. Monotypic.

A small genus known only from southwestern United States south to Ecuador.

Revision: Smith, 1971. Amer. Ent. Soc., Trans. 97: 537-543.

malvacearum (Cockerell). Tex., N. Mex., Ariz.; Mexico. Host: *Althaea rosea*, *Malvastrum*,

Malva, *Sphaeralcea*.

Nematoneura malvacearum Cockerell, 1894. U. S. Dept. Agr., Insect Life 7: 253. ♀, ♂.

Taxonomy: Smith, 1972. Amer. Ent. Soc., Trans. 98: 179 (larva).

- Biology: Cockerell, 1894. U. S. Dept. Agr., Insect Life 7: 251-253.
tor Smith. S. Tex.
Neoptilia tor Smith, 1971. Amer. Ent. Soc., Trans. 97: 540. ♀, ♂.

Genus PTENUS Kirby

- Ptenos* Norton, 1872. Amer. Ent. Soc., Trans. 4: 77. Preocc. by Gray, 1843.
 Type-species: *Ptenos niger* Norton. Desig. by Rohwer, 1911.
Ptenus Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 51. N. name.
Ptenellus Malaise, 1937. Ent. Tidskr. 58: 56.
 Type-species: *Ptenos nigripictus*(!) Norton. Orig. desig.
 This genus is found only in the New World and is distributed from southwestern United States to northern South America.
 Revision: Smith, 1970. Amer. Ent. Soc., Trans. 96: 79-101.
apulatus Greenbaum. Ariz.
Ptenus apulatus Greenbaum, 1975 (1974). Pan-Pacific Ent. 50: 423-425. ♀.
bicolor Smith. Tex.; Mexico. Host: *Acacia farnesiana*.
Ptenus bicolor Smith, 1970. Amer. Ent. Soc., Trans. 96: 83. ♀, ♂.
 Taxonomy: Smith, 1972. Amer. Ent. Soc., Trans. 98: 176 (larva).
imus Smith. Tex.; Mexico.
Ptenus imus Smith, 1970. Amer. Ent. Soc., Trans. 96: 84. ♀.
jocus Smith. Ariz. (Patagonia Mts.).
Ptenus jocus Smith, 1970. Amer. Ent. Soc., Trans. 96: 86. ♀.
magnus Smith. W. Tex., N. Mex., Ariz.
Ptenus magnus Smith, 1970. Amer. Ent. Soc., Trans. 96: 86. ♀, ♂.
modestius Smith. Tex., Ariz., s. Calif. Host: Adults collected from mesquite.
Ptenus modestius Smith, 1970. Amer. Ent. Soc., Trans. 96: 88. ♀, ♂.
nigropectus (Norton). Miss., La., Tex. Host: *Acacia angustissima*, *Desmanthus*(?).
Ptenus nigropectus Norton, 1872. Amer. Ent. Soc., Trans. 4: 77. ♂.
parvus Smith. W. Tex., Ariz. Host: Adults collected from *Acacia*.
Ptenus parvus Smith, 1970. Amer. Ent. Soc., Trans. 96: 92. ♀, ♂.
patulus Smith. Ariz.
Ptenus patulus Smith, 1970. Amer. Ent. Soc., Trans. 96: 94. ♀, ♂.
texanus (Norton). Tex.; Mexico.
Ptilia texana Norton, 1869. Amer. Ent. Soc., Trans. 2: 367. ♂.
Ptenos niger Norton, 1872. Amer. Ent. Soc., Trans. 4: 77. ♂.
torridus Smith. Ariz.
Ptenus torridus Smith, 1970. Amer. Ent. Soc., Trans. 96: 96. ♀.
vanus Smith. N. Mex., Ariz.; Mexico.
Ptenus vanus Smith, 1970. Amer. Ent. Soc., Trans. 96: 96. ♀, ♂.
vargus Smith. Tex.; Mexico.
Ptenus vargus Smith, 1970. Amer. Ent. Soc., Trans. 96: 98. ♀.

Genus SCHIZOCERELLA Forsius

- Schizocerella* Forsius, 1927. Notulae Ent. 7: 19.
 Type-species: *Schizocerella axillaris* Forsius. Orig. desig.
Sofus Malaise, 1937. Ent. Tidskr. 58: 137.
 Type-species: *Schizocera pilicornis* Holmgren. Orig. desig.
Sterictiphora subg. *Leston* Ross, 1937. Ill. Biol. Monog. 15(2): 54.
 Type-species: *Schizocerus zabriskei* Webster and Malley. Orig. desig.
 Taxonomy: Benson, 1963. Ann. and Mag. Nat. Hist. (13) 5: 631. —Smith, 1971. Ar. Soc., Trans. 97: 543-546.

pilicornis (Holmgren). N. Y. and Ont. to Fla. w. to Wash., Oreg., Calif. and to Argentina.

Ecology: Leafminer. A larva of this species may mine a *Portulaca* leaf, leave it, and then mine a succession of leaves before becoming full grown. The mature larva pupates in the soil. Host: *Portulaca*. Introduced into Australia.

Schizocera pilicornis Holmgren, 1868. Eug. Resa I, Zool. I, Ins. p. 391. ♀, ♂.

Schizoceros lateralis Konow, 1899. Buenos Aires Mus. Nac. de Hist. Nat., An. 6: 404. ♀.

Shizocerus zabriskei Webster and Malley, 1900. Canad. Ent. 32: 51.

Schizocerus sericeiformis Rohwer, 1908. N. Y. Ent. Soc., Jour. 16: 112. ♂.

Schizocerus lineatus Rohwer, 1909. Canad. Ent. 41: 12. ♀.

Schizocerus collaris Rohwer, 1909. Canad. Ent. 41: 13. ♀.

Schizocerus johnsoni MacGillivray, 1909. Canad. Ent. 41: 403. ♀.

Schizocercella axillaris Forsius, 1927. Notulae Ent. 7: 19.

Schizocercella scapularis Forsius, 1927. Notulae Ent. 7: 19. ♀.

Taxonomy: Smith, 1972. Amer. Ent. Soc., Trans. 98: 171 (larva).

Biology: Webster and Malley, 1900. Canad. Ent. 32: 51-54. —Garlick, 1922. Canad. Ent. 54: 240. —Force, 1965. Calif. Dept. Agr. Bul., v. 54, pp. 157-160.

Genus SPHACOPHILUS Provancher

This genus is found only in the New World, where most of its representatives are found from southwestern United States to South America. A few species extend north through the central plains region to central Canada.

Revision: Smith, 1971. Amer. Ent. Soc., Trans. 97: 549-580.

Genus SPHACOPHILUS Subgenus SPHACOPHILUS Provancher

Sphacophilus Provancher, 1889. Addit. Corr. Faune Ent. Canada Hym., Sup., p. 427.

Type-species: *Sphacophilus crawii* Provancher. Monotypic.

crawii Provancher. Idaho, Oreg. s. to N. Mex., Ariz., Calif.

Sphacophilus crawii Provancher, 1889. Addit. Corr. Faune Ent. Canada Hym., Sup., p. 427. ♀.

invitus (Cresson). Wash. s. to Colo., Ariz., Calif.

Schizocera invita Cresson, 1880. Amer. Ent. Soc., Trans. 8: 3. ♀.

Genus SPHACOPHILUS Subgenus LITOCOLUS Smith

Sphacophilus subg. *Litocolus* Smith, 1971. Amer. Ent. Soc., Trans. 97: 556.

Type-species: *Atomacera cellularis* Say. Orig. desig.

Known hosts for this subgenus are members of the plant family Convolvulaceae.

apiculus Smith. S. Ariz.

Sphacophilus (Litocolus) apiculus Smith, 1971. Amer. Ent. Soc., Trans. 97: 556. ♀.

cellularis (Say). Conn. to Fla. w. to Ont., Minn., Nebr., Ark. Host: *Ipomoea*, *Convolvulus*.

Atomacera cellularis Say, 1836. Boston Jour. Nat. Hist. 1: 213. ♀.

Schizocerus ebenus Norton, 1867. Amer. Ent. Soc., Trans. 1: 55. ♂.

Schizocerus privatus Norton, 1867. Amer. Ent. Soc., Trans. 1: 56. ♀.

Taxonomy: Smith, 1972. Amer. Ent. Soc., Trans. 98: 174 (larva).

Biology: Riley and Howard, 1888. U. S. Dept. Agr., Insect Life 1: 43-45. —Marlatt, 1892. U. S. Dept. Agr., Insect Life 5: 24-27.

orthius Smith. Ariz.

Sphacophilus (Litocolus) orthius Smith, 1971. Amer. Ent. Soc., Trans. 97: 558. ♀.

orus Smith. Ariz.

Sphacophilus (Litocolus) orus Smith, 1971. Amer. Ent. Soc., Trans. 97: 559. ♀, ♂.

partitus Smith. Ariz. (Chiricahua Mts.).

Sphacophilus (Litocolus) partitus Smith, 1971. Amer. Ent. Soc., Trans. 97: 560. ♀.

quixus Smith. Tex., Ariz. Host: *Ipomoea*(?).

Sphacophilus (Litocolus) quixus Smith, 1971. Amer. Ent. Soc., Trans. 97: 561. ♀, ♂.

Genus SPHACOPHILUS Subgenus CEOCOLUS Smith

Sphacophilus subg. *Ceocolus* Smith, 1971. Amer. Ent. Soc., Trans. 97: 562.

Type-species: *Schizocerus abdominalis* Cresson. Orig. desig.

Known hosts for species of this subgenus are members of the plant family Leguminosae. These sawflies appear to be most common in the prairie regions of central North America.

abdominalis (Cresson). N. C.; S. Dak., Ill. w. to Colo., N. Mex. Host: *Psoralea*.

Schizocerus abdominalis Cresson, 1865. Ent. Soc. Phila., Proc. 4: 243. ♂.

albicosta Smith. Idaho, Wash., Oreg. Host: *Psoralea*.

Sphacophilus (Ceocolus) albicosta Smith, 1971. Amer. Ent. Soc., Trans. 97: 563. ♀, ♂.

apios (Ross). N. C., Ill., Kans. Host: *Desmodium*, *Psoralea*.

Sterictiphora apios Ross, 1933. Ent. Soc. Wash., Proc. 35: 13. ♀, ♂, larva.

Sterictiphora apios form atrescens Ross, 1933. Ent. Soc. Wash., Proc. 35: 14. ♀, ♂.

Biology: Ross, 1933. Ent. Soc. Wash., Proc. 35: 13-19.

argutus Smith. Ariz. (Tucson Mts.).

Sphacophilus (Ceocolus) argutus Smith, 1971. Amer. Ent. Soc., Trans. 97: 566. ♀.

crenus Smith. W. Tex.

Sphacophilus (Ceocolus) crenus Smith, 1971. Amer. Ent. Soc., Trans. 97: 567. ♀, ♂.

dissensus Smith. Ariz. (Indian Pine).

Sphacophilus (Ceocolus) dissensus Smith, 1971. Amer. Ent. Soc., Trans. 97: 568. ♀.

hamus Smith. S. Ariz.

Sphacophilus (Ceocolus) hamus Smith, 1971. Amer. Ent. Soc., Trans. 97: 568. ♀, ♂.

memmonius Smith. S. Calif. (Algodones Sand Dune, Imperial Co.).

Sphacophilus (Ceocolus) memmonius Smith, 1971. Amer. Ent. Soc., Trans. 97: 570. ♀.

nigriceps (Konow). Man., Minn., Ill. w. to Alta., Wyo., Colo., N. Mex., Tex. Host: *Petalostemum*.

Brachyphatnus nigriceps Konow, 1906. Ztschr. System. Hym. Dipt. 6: 251. ♀.

Schizocerus nortoni Rohwer, 1909. Canad. Ent. 41: 11. ♂.

Taxonomy: Smith, 1972. Amer. Ent. Soc., Trans. 98: 175 (larva).

oblatus Smith. N. Mex., Ariz.

Sphacophilus (Ceocolus) oblatus Smith, 1971. Amer. Ent. Soc., Trans. 97: 576. ♀.

plumiger (Klug). N. C., Ga., Fla. Host: *Petalostemum*.

Hylotoma plumiger Klug, 1814. Mag. Gesell. Naturf. Freunde Berlin 6: 306. ♀. "New York" (!).

Cryptus Klugii Leach, 1817. Zool. Misc., v. 3, p. 125. ♀, ♂.

Taxonomy: Smith, 1973. Ent. Soc. Wash., Proc. 75: 28-29.

precarious Smith. Ga., Fla.

Sphacophilus (Ceocolus) precarious Smith, 1971. Amer. Ent. Soc., Trans. 97: 578. ♀.

rallus Smith. Ariz. (Santa Catalina Mts.).

Sphacophilus (Ceocolus) rallus Smith, 1971. Amer. Ent. Soc., Trans. 97: 578. ♀.

triangularis Smith. Ariz. (Douglas).

Sphacophilus (Ceocolus) triangularis Smith, 1971. Amer. Ent. Soc., Trans. 97: 580. ♀.

Family CIMBICIDAE

These are large, robust sawflies, and the larvae are all external leaf feeders. The family is found in most of the world except for the Ethiopian and Australian regions and contains about 130 species.

Taxonomy: Benson, 1938. Roy. Ent. Soc. London, Trans. 87: 369-372 (key to world subfamilies). — Townes, 1962. U. S. Natl. Mus., Bul. 216, p. 67 (Clavellariidae).

SUBFAMILY ABIINAE

Genus ZARAEA Leach

Zaraea Leach, 1817. Zool. Misc., v. 3, p. 113.

Type-species: *Tenthredo fasciata* Linnaeus. Monotypic.

Members of this Holarctic genus are associated with the plant family Caprifoliaceae.

americana Cresson. Quebec to Alaska s. to Pa., Nebr., N. Mex., Calif. Ecology: Widespread.

Host: *Symphoricarpos*, *Lonicera*.

Zaraea americana Cresson, 1880. Amer. Ent. Soc., Trans. 8: 1. ♀.

Biology: Britton, 1925. Conn. Agr. Expt. Sta., Bul. 265: 341. — Kieffer, 1933. Jour. Econ. Ent. 26: 293. — Middlekauff, 1956. Jour. Econ. Ent. 49: 701.

inflata Norton. Mass. to Pa. w. to Nebr., Colo. Host: *Lonicera*. Honeysuckle sawfly.

Zaraea inflatus Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 151. ♀.

Abia caprifolium Norton, 1867. Amer. Ent. Soc., Trans. 1: 46. ♀.

Biology: Thomas, 1881. Tenth Rpt., State Ent. Ill. 1880 p. 66.

kennicotti (Norton). N. Y., Ill., Mo., Kans., Tex.

Abia Kennicotti Norton, 1867. Amer. Ent. Soc., Trans. 1: 47. ♀, ♂.

loniceræ (Linnaeus). N. Y. to Md. w. to Ohio; Europe. Introduced into N. Amer. Host:

Lonicera, *Symphoricarpos*.

Tenthredo loniceræ Linnaeus, 1758. Syst. Nat., Ed. 10, p. 559.

Abia nigricornis Leach, 1817. Zool. Misc., v. 3, p. 113. ♀, ♂.

Taxonomy: Benson, 1946. Ent. Monthly Mag. 82: 101-102.

SUBFAMILY CIMBICINAE

Genus TRICHIOSOMA Leach

Trichiosoma Leach, 1817. Zool. Misc., v. 3, p. 108.

Type-species: *Tenthredo lucorum* Linnaeus. Desig. by Curtis, 1825.

A Holarctic genus with about 20 species. Adults are large and densely hairy sawflies and may girdle twigs of their host plant with their powerful mandibles. This genus is in need of study. Adults show extreme variation in color and external structure and a thorough study will be necessary to determine the correct status of the segregates listed below.

aleutianum Cresson. Alaska (Aleutian Islands).

Trichiosoma triangulum var. *aleutiana* Cresson, 1880. Amer. Ent. Soc., Trans. 8:1. ♀.

arcticum Kirby. N. W. T. (Ft. Simpson, MacKenzie R.).

Trichiosoma arcticum Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 10. ♂.

lanuginosum Norton. Calif.

Trichiosoma lanuginosum Norton, 1867. Amer. Ent. Soc., Trans. 1: 44. ♀.

triangulum Kirby. Que. to Alaska s. to Pa., Colo., Calif. Ecology: Widespread. Host: *Alnus*,

Betula, *Populus*, *Fraxinus*, *Prunus*, *Salix*.

Trichiosoma triangulum Kirby, 1837. Fauna Bor.-Amer., v. 4, p. 254.

Abia cerasi Fitch, 1857. N. Y. State Agr. Soc., Trans. 1856, 16: 385.

Trichiosoma bicolor Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 150. ♂.

Trichiosoma crassum Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 11. ♀.

Trichiosoma Taylora Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 20. ♀, ♂.

Trichiosoma confusum MacGillivray, 1916. Conn. State Geol. and Nat. Hist. Survey Bul.

22: 103. ♀, ♂.

Trichiosoma spicatum MacGillivray, 1916. Conn. State Geol. and Nat. Hist. Survey Bul. 22: 103. ♂.

Trichiosoma confundum MacGillivray, 1923. Canad. Ent. 55: 161. ♀.

Genus **CIMBEX** Olivier

Crabro Geoffroy, 1762. Hist. Abregee des Insectes, v. 2, p. 261. Suppressed by Internatl. Comm. Zool. Nomencl., Op. 144, 1936. Publication unavailable for nomenclatorial purposes, Internatl. Comm. Zool. Nomencl., Op. 228, 1954.

Type-species: *Crabro humeralis* Fourcroy. Desig. by Bradley, 1919.

Clavellarius Olivier, 1789. Encycl. Meth., Dict. Ins., v. 4, p. 22. Suppressed by Internatl. Comm. Zool. Nomencl., Op. 216, 1954.

Type-species: *Tenthredo lutea* Linnaeus. Desig. by Latreille, 1810.

Cimbex Olivier, 1790. Encycl. Meth., Dict. Ins., v. 5, p. 762. N. name for *Clavellarius* Olivier.

Clavellaria Lamarck, 1801. Systeme Anim. Sans Vert., p. 264. Emend.

A Holarctic genus with about 17 species whose members are the largest of sawflies. Adults have large, powerful mandibles with which they may sometimes girdle the twigs of their host. Members of this genus show considerable variation in color and structure, and an intensive study is required to determine the validity of the segregates listed below.

Taxonomy: Ross and Burke (!), 1947. Bul. Zool. Nomencl., pp. 201-202 (status of the name *Clavellarius* Olivier, 1789).

americana Leach. Newfoundland to Alaska s. to N. C., Colo., Oreg. Ecology: Widespread.

Host: *Acer*, *Alnus*, *Betula*, *Ostrya*, *Populus*, *Prunus*, *Salix*, *Tilia*, *Ulmus*. Elm sawfly.

Cimbex americana Leach, 1817. Zool. Misc., v. 3, p. 105. ♂.

Cimbex violacea Lepeletier, 1823. Monog. Tenthred., p. 27. ♀.

Cimbex luctifera Klug, 1829. Gesell. Naturf. Freunde Berlin 1(2): 85. ♀, ♂.

Cimbex La Portei Lepeletier, 1833. Soc. Ent. France, Ann. 2: 454. ♀.

Cimbex Viardi Lepeletier, 1833. Soc. Ent. France, Ann. 2: 454. ♀.

Cimbex ulmi Harris, 1841. Rpt. Ins. Mass. Injurious to Veg., p. 374.

Cimbex Dahlbomi Guerin 1845. Inconogr. Regne Anim., v. 7 (Ins.), p. 398. ♀.

Cimbex lateralis Guerin, 1845. Inconogr. Regne Anim., v. 7 (Ins.), p. 398. ♀.

Cimbex kirbyi Brulle, 1846. In Lepeletier, Hist. Nat. Ins., Hym. v. 4, p. 672. ♀.

Cimbex americana var. *alba* Norton, 1867. Amer. Ent. Soc., Trans. 1: 42. ♀.

Cimbex americana var. *nortoni* MacGillivray, 1916. Conn. State Geol. and Nat. Hist.

Survey Bul. 22: 104. ♀.

Crabro americana var. *rubrosa* Ross, 1932. Canad. Ent. 64: 250. ♂.

Biology: Harris, 1841. Rpt. Ins. Mass. Injurious to Veg., p. 374. —Webster, 1890. U. S. Dept.

Agr., Insect Life 2: 228-230. —Townsend, 1892. Canad. Ent. 24: 126. —Aldrich, 1892.

Canad. Ent. 24: 144. —Severin and Severin, 1908. Wis. Acad. Sci., Arts and Letters, Trans.

16: 61-76. —Severin, 1920. S. Dak. State Ent., Circ. 22, 4 pp. —Wong, 1954. Canad. Ent. 86:

154. —Lipa and Smirnov, 1971. Bul. Acad. Pol. Sci., Ser. Sci. Biol. 19: 269-274 (a protozoan parasite). —Stein, 1974. U. S. Dept. Agr., Forest Pest Leaflet 142, 6 pp.

Morphology: Severin and Severin, 1908. Ent. Soc. Amer., Ann. 1: 87-101 (female reproductive organs). —Severin and Severin, 1908. Ent. Soc. Amer., Ann. 1: 196-205 (male reproductive organs). —Severin and Severin, 1908. Wis. Acad. Sci., Arts and Letters, Trans. 16: 39-60 (digestive canal).

pacifica Cresson. Colo., Wash., Oreg., Calif. Host: *Salix*.

Cimbex pacifica Cresson, 1880. Amer. Ent. Soc., Trans. 8: 1. ♀, ♂.

Biology: Schuh and Mote, 1948. Oreg. State Coll. Agr., Expt. Sta. Bul. 449: 128.

rubida Cresson. Nev., Calif. Host: *Salix*.

Cimbex rubida Cresson, 1880. Amer. Ent. Soc., Trans. 8: 1. ♀.

semidea Cresson. Maine, N. H., Ont., Mich.

Cimbex semidea Cresson, 1880. Amer. Ent. Soc., Trans. 8: 1. ♀.

Cimbex hudsonica Kirby, 1882. List. Hym. Brit. Mus., v. 1, p. 8. ♀.

Family DIPRIONIDAE

A small family found in the coniferous forests of the Northern Hemisphere with about 91 world species in 11 genera. Though more common in the cool northern regions, representatives are found as far south as north Africa, Pakistan, north India, Thailand, El Salvador, and Cuba. Hosts are restricted to conifers; consequently, they are commonly called conifer sawflies. Larvae defoliate the host, and sporadic outbreaks may occur in forest stands resulting in loss of growth and sometimes tree mortality. Many are also a nuisance in plantations, nurseries, and ornamental plantings. All larvae feed on the needles except for those of *Augomonotenus libocedrii* Rohwer which feeds in the developing cones of incense cedar. In addition to the foliage, some may also feed on the tender bark of new twigs. Most larvae are gregarious at first but later disperse on the tree in search of new food. Overwintering is either as an egg in the needles or as a prepupa in a cocoon in the forest litter. Adults are short-lived and are most easily obtained by rearing. Depending on the species and sometimes the latitude, there may be from one to five generations a year; however, sometimes it takes more than one year to complete a life cycle. Diapause is common in many species.

Because this is an economically important group, literature references are numerous. The literature cited here for many species is not complete and would take many more pages. Some early literature, especially prior to 1943, is not reliable because the taxonomy has changed to such an extent that it is impossible to tell to which species the articles refer. The taxonomy of some groups, *Neodiprion* in particular, is still flexuous.

Taxonomy: Benson, 1939. Bul. Ent. Res. 30: 339-342 (genera of world). — Benson, 1945. Bul. Ent. Res. 36: 163-164 (world classification). — Gussakovskii, 1947. Faune de L'URSS, Ins. Hym., v. 2, 234 pp. (Palearctic species). — Benson, 1954. Roy. Ent. Soc. London, Proc., Ser. B: Taxonomy 23: 115-118 (world genera of Monotenerinae). — Wong, 1951. Ont. Ent. Soc., Ann. Rpt. 82, pp. 63, 66 (cocoons). — Smith, 1974. Ent. Soc. Wash., Proc. 76: 409-418 (key to N. Amer. genera; list world spp.).

Biology: Craighead, 1950. U. S. Dept. Agr., Misc. Pub. 657, pp. 542-591 (eastern forests). — Raizenne, 1957. Canad. Dept. Agr., Pub. 1009, pp. 11-24 (sawflies of s. Ont. and their parasites). — Bird, 1955. Canad. Ent. 87: 124-127 (virus diseases). — Atwood, 1961. Ont. Ent. Soc., Proc. 1960, 91: 205-215 (current status in Ont.). — Coppel and Benjamin, 1965. Ann. Rev. Ent. 10: 69-96 (binomics of Nearctic pine-feeding diprionids). — Ryvkin, 1969. Beitr. Ent. 19: 595-605 (complexes of natural enemies). — Philogene, 1971. Ent. Soc. Quebec, Ann. 16: 112-119 (diapause). — Baker, 1972. U. S. Dept. Agr., Misc. Pub. 1175, pp. 439-453 (eastern forests). — Knerer and Atwood, 1973. Science 179: 1090-1099 (polymorphism and speciation).

SUBFAMILY MONOTENINAE

Larvae of this subfamily feed on Cupressaceae.

Genus MONOTENUS Dahlbom

Monotenus Dahlbom, 1835. Conspectus Tenthred., Siricid., Oryssin. Scand., p. 7.

Type-species: *Tenthredo juniperi* Linnaeus. Monotypic.

A small holarctic genus with about 10 species. The genus also extends into Mexico.

fulvus (Norton). Ont., Ill., Kans., Okla., Tex. Host: *Juniperus virginiana*.

Lophyrus fulvus Norton, 1872. Amer. Ent. Soc., Trans. 4: 86. ♀.

Lophyrus (Monotenus) juniperi Marlatt, 1888. Kans. Acad. Sci., Trans. 10: 82. ♀, ♂.

Preocc. by Linnaeus, 1758.

Monotenus unicolor Marlatt, 1890. Ent. Soc. Wash., Proc. 2: 125. N. name for *juniperi* Marlatt.

Biology: Marlatt, 1888. Kans. Acad. Sci., Trans. 10: 80-82. — Smith, 1943. Kans. State Bd. Agr., Rpt. 62: 385.

melliceps (Cresson). Mass., Ont.

Lophyrus melliceps Cresson, 1880. Amer. Ent. Soc., Trans. 8: 26. ♀.

suffusus (Cresson). Que., Maine, Mass., Conn., Ont., N. Y. Host: *Juniperus virginiana*, *Thuja occidentalis*.

Lophyrus suffusus Cresson, 1880. Amer. Ent. Soc., Trans. 8: 26. ♀.

Monoctenus juniperinus MacGillivray, 1894. Canad. Ent. 26: 328. ♀. N. syn.

Biology: Britton, 1925. Conn. (State) Agr. Expt. Sta., Bul. 265: 336. —Brown, 1940. Canada Dept. Agr., Forest Ins. Survey, 4th Ann. Rpt. for 1939, p. 18.

Genus AUGOMONCTENUS Rohwer

Augomonctenus Rohwer, 1918. Ent. Soc. Wash., Proc. 20: 81.

Type-species: *Augomonctenus libocedrii* Rohwer. Orig. desig.

An exclusively North American genus, where it is found in Oregon, California, and Arizona. The Arizona species is unidentified.

libocedrii Rohwer. Oreg., Calif. Ecology: Larvae feed inside cones. Host: *Libocedrus decurrens*.

Augomonctenus libocedrii Rohwer, 1918. Ent. Soc. Wash., Proc. 20: 81. ♀.

Biology: Middlekauff, 1967. Pan-Pacific Ent. 43: 272.

pilosus Middlekauff. Calif. (Cholame, San Luis Obispo Co.).

Augomonctenus pilosus Middlekauff, 1967. Pan-Pacific Ent. 43: 272. ♀.

SUBFAMILY DIPRIONINAE

Larvae of this subfamily feed on Pinaceae.

Genus ZADIPRION Rohwer

Neodiprion subg. *Zadiprion* Rohwer, 1918. Ent. Soc. Wash., Proc. 20: 83.

Type-species: *Diprion grandis* Rohwer. Orig. desig.

A small genus of four or five species, two of which are found in the United States, the others in Mexico.

Revision: Middleton, 1931. Ent. Soc. Wash., Proc. 33: 165-170. —Smith, 1971. Ent. Soc. Wash., Proc. 73: 187-197.

Taxonomy: Smith, 1974. Ent. Soc. Wash., Proc. 76: 415 (key to spp.).

rohweri (Middleton). Colo., N. Mex., Utah, Nev., Calif. Host: *Pinus monophylla*, *P. edulis*.

Neodiprion (*Zadiprion*) *rohweri* Middleton, 1931. Ent. Soc. Wash., Proc. 33: 166. ♀, ♂.

townsendi (Cockerell). S. Dak., Nebr., Colo., N. Mex., Ariz. Host: *Pinus ponderosa*.

Lophyrus townsendi Cockerell, 1898. Ann. and Mag. Nat. Hist. (ser. 7) 2: 457. ♀.

Diprion grandis Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 208. ♀, ♂.

Biology: Swenk, 1911. Nebr. Agr. Expt. Sta., Ann. Rpt. 24, pp. 1-33 ("bull pine sawfly").

Genus NEODIPRION Rohwer

Neodiprion Rohwer, 1918. Ent. Soc. Wash., Proc. 20: 83.

Type-species: *Lophyrus lecontei* Fitch. Orig. desig.

All species of *Neodiprion* are found in North America. The only Palearctic species, *N. sertifer*, was accidentally introduced. In North America, representatives of this genus are found as far south as El Salvador. *Neodiprion* contains most of the destructive species of Diprionidae in North America. Damage is caused by larval defoliation of valuable timber species in forest stands, plantations, and ornamental plantings. Outbreaks occur sporadically, sometimes over extensive areas and result in loss of growth and occasionally tree mortality. Life cycles differ between species. In general, oviposition is in the needles of the host and the larvae feed gregariously at first but later spread out in search of new food. Feeding may be on the new or old growth, or both. Mature larvae go into the ground and spin a tough, papery cocoon in which they pupate. Overwintering is either as an egg in the foliage or in a cocoon in the ground, and there may be from one to five generations per year depending on the species and climate.

The taxonomy of this genus is based on female genitalia, though in many cases it is necessary to have larvae and accompanying biological data for correct determination. Determination of a single stage is sometimes not possible. Characters have not been found for separation of males. A number of confusing species complexes remain to be studied, and the listing below is not so clear-cut as it appears. Some complexes may represent a single species with a number of geographic or food plant races or may represent a number of separate species units. Complications arise when apparently similar larvae produce different adults and different larvae produce similar adults. Further taxonomic work on *Neodiprion* will have to involve studies of all stages and biologies of each form from different parts of their ranges. Those who encounter *Neodiprion* in the field are urged to rear adults, keep associated larvae of each instar, and take notes on their life cycles.

Revision: Atwood and Peck, 1943. *Canad. Jour. Res., Sect. D., Zool. Sci.* 21: 109-144 (pine feeding species of e. Canada). — Ross, 1955. *Forest Sci.* 1: 196-209 (N. Amer. species).

Taxonomy: West, Horwood, Bourns, and Hudson, 1959. *Ent. Soc. Ont. Rpt.* 89: 58-68 (serological and chromatographic studies). — Wallace, 1964. *Canad. Ent.* 96: 162 (spectrophotometry in taxonomy). — Schaefer and Wallace, 1967. *Canad. Ent.* 99: 574-577 (larval hemolymph amino acids as a taxonomic character).

Biology: Keen, 1938. U. S. Dept. Agr., Misc. Pub. 273 (rev. 1952), pp. 116-120 (western forests). — Schaffner, 1943. *Jour. Forestry* 41: 580-588 (conifer sawflies in n. e. states). — Atwood, 1943. *In* Atwood and Peck, *Canad. Jour. Res., Sect. D., Zool. Sci.* 21: 123-137 (pine feeding species in e. Canada). — Craighead, 1950. U. S. Dept. Agr., Misc. Pub. 657, pp. 550-557 (eastern forests). — McCormick and Andresen, 1961. *Amer. Mus. Nov.* 2032, 6 pp. (in s. N. J.). — MacAloney and Schmiede, 1962. U. S. Dept. Agr., Forest Service, Lake States Forest Expt. Sta. Paper 100, 42 pp. (conifer insects). — Baker, 1972. U. S. Dept. Agr., Misc. Pub. 1175, pp. 439-450 (eastern forests).

SPECIES GROUP LECONTEI

abbotii (Leach). Que., Ont. to Fla. w. to Wis. Host: *Pinus caribaea*, *P. echinata*, *P. elliotii* var. *densa*, *P. heterophylla*, *P. palustris*, *P. resinosa*, *P. taeda*.

Lophyrus Abbotii Leach, 1817. *Zool. Misc.*, v. 3, p. 120. ♀.

Lophyrus Fabricii Leach, 1817. *Zool. Misc.*, v. 3, p. 120. ♀.

Lophyrus americanus Leach, 1817. *Zool. Misc.*, v. 3, p. 120. ♀.

Lophyrus rileyi Cresson, 1880. *Amer. Ent. Soc., Trans.* 8: 25. ♀.

Neodiprion (*Neodiprion*) *eximina* Rohwer, 1921. U. S. Natl. Mus., Proc. 59: 92. ♀.

Neodiprion (*Neodiprion*) *ferrugineum* Middleton, 1933. *Canad. Ent.* 65: 82. ♀.

Neodiprion flemingi Peck, 1943. *In* Atwood and Peck, *Canad. Jour. Res., Sect. D., Zool. Sci.* 21: 121. ♀.

Biology: Atwood, 1943. *In* Atwood and Peck, *Canad. Jour. Res., Sect. D., Zool. Sci.* 21: 132-133 (larva, biology of *flemingi*). — Hetrick, 1956. *Forest Sci.* 2: 181 (as *abbotii*). — Finlayson, 1963. *Canad. Ent.* 95: 475-476 (parasites). — Baker, 1972. U. S. Dept. Agr., Misc. Pub. 1175, p. 447.

compar (Leach). N. B., Que., Ont., Va., N. C., Ga., Fla. Host: *Pinus banksiana*, *P. resinosa*, and probably other pines.

Lophyrus compar Leach, 1817. *Zool. Misc.*, v. 3, p. 120. ♀.

Lophyrus lateralis Cresson, 1880. *Amer. Ent. Soc., Trans.* 8: 25. ♀.

Neodiprion laniensis Peck, 1943. *In* Atwood and Peck, *Canad. Jour. Res., Sect. D., Zool. Sci.* 21: 115. ♀, ♂.

Biology: Atwood, 1943. *In* Atwood and Peck, *Canad. Jour. Res., Sect. D., Zool. Sci.* 21: 132 (larva, biology of *laniensis*).

dubiosus Schedl. Ont., Wis. and probably adjacent states and provinces. Host: *Pinus banksiana*.

Neodiprion dubiosus Schedl, 1933. *Ztschr. f. Angew. Ent., Beihefte* 20: 449. Larva.

Taxonomy: Schedl, 1935. *Deut. Ent. Gesell. Mitt.* 6: 39-44 (adults). — Becker, Wilkinson, and Benjamin, 1966. *Ent. Soc. Amer., Ann.* 59: 173-178 (female, larva; separation from related species).

- Biology: Schedl, 1937. Ztschr. f. Angew. Ent., Beihefte 24: 51-54. — Schedl, 1939. Internatl. Kong. Ent., Berlin 1938, sect. 7, bd. 3, pp. 2053-2103.
- excitans** Rohwer, Del., Va. to Fla. w. to Ill., Okla., Tex.; Brit. Honduras(?), El Salvador(?).
Host: *Pinus clausa*, *P. echinata*, *P. elliottii*, *P. glabra*, *P. palustris*, *P. rigida*, *P. serotina*, *P. taeda*.
Neodiprion (Neodiprion) excitans Rohwer, 1921. U. S. Natl. Mus., Proc. 59: 93. ♀, ♂.
- Biology: Hetrick, 1956. Forest Sci. 2: 182 ("exitans"). — Hetrick, 1959. Fla. Ent. 42: 159.
— Fatzinger, 1964. Jour. Econ. Ent. 57: 412 (larval survival of subfreezing temperatures).
— Wilkinson, 1964. Jour. Econ. Ent. 57: 786 (collection of cocoons in tree bands).
— Wilkinson, 1964. Canad. Ent. 96: 1142 (development in relation to oviposition and pine needle growth). — Thatcher, 1967. U. S. Dept. Agr., Forest Pest Leaflet 105, 4 pp.
— Wilkinson, 1968. Fla. Ent. 51: 199. — Wilkinson, 1971. Fla. Ent. 54: 343-344 (on *Pinus clausa* in Fla.). — Baker, 1972. U. S. Dept. Agr., Misc. Pub. 1175, pp. 449-450. — Doggett, 1972. Jour. Econ. Ent. 65: 701-702 (in N. C.).
- hetricki** Ross, Va., S. C. Host: *Pinus taeda*, *P. serotina*.
Neodiprion hetricki Ross, 1955. Forest Sci. 1: 202. ♀, ♂.
- Biology: Hetrick, 1956. Forest Sci. 2: 182. — Baker, 1972. U. S. Dept. Agr., Misc. Pub. 1175, p. 450 (hosts).
- lecontei** (Fitch). N. B., Que., Ont. to Fla. w. to Minn., Mo., Ark., Tex. Ecology: Larvae feed on many species of native and exotic pines, but adults oviposit only on hard pines. This species shows a preference for trees less than 15 ft. high and is often a problem in nurseries and plantations. Larvae may feed on the tender bark of young twigs as well as on pine needles. Host: *Pinus banksiana*, *P. sylvestris*, *P. clausa*, *P. echinata*, *P. elliottii*, *P. palustris*, *P. resinosa*, *P. rigida*, *P. taeda*, *P. virginiana* are preferred hosts. The following are sometimes attacked when growing with the preferred hosts: *Pinus contorta*, *P. densiflora*, *P. monticola*, *P. mugho*, *P. nigra*, *P. ponderosa*, *P. strobus*, *P. thunbergii*, *Cedrus deodara*, *Larix laricina*, *Picea abies*, *Thuja occidentalis*. Redheaded pine sawfly.
Lophyrus lecontei Fitch, 1858. N. Y. State Agr. Soc., Trans. 17: 744.
- Biology: Middleton, 1921. Jour. Agr. Res. 20: 741-760. — Middleton, 1922. U. S. Dept. Agr., Farmers' Bul. 1259, 3 pp. — Beal, 1942. Jour. Forestry 40: 562-563 (host mortality). — Schaffner, 1951. U. S. Dept. Agr., Leaflet 296, 4 pp. — Baldwin and House, 1954. Canad. Jour. Zool. 32: 9-15 (effects of thermal conditioning in larva). — Green, 1954. Canad. Ent. 86: 261-274 (humidity reactions and water balance of larva). — Green, 1954. Canad. Ent. 86: 371-376 (function of eyes and antenna in orientation). — Benjamin, 1955. U. S. Dept. Agr., Tech. Bul. 1118, 57 pp. (biology, control, literature prior to 1954). — MacAloney, 1957. U. S. Dept. Agr., Forest Pest Leaflet 14, 4 pp. — Griffiths, 1960. Canad. Ent. 92: 430-435 (oviposition). — Finlayson, 1963. Canad. Ent. 95: 478-480 (parasites). — Wilson, 1970. U. S. Dept. Agr., Forest Pest Leaflet 14 (rev.), 6 pp. — Baker, 1972. U. S. Dept. Agr., Misc. Pub. 1175, pp. 439-441.
- maurus** Rohwer, Ont., Wis., Minn. Host: *Pinus banksiana*.
Neodiprion (Neodiprion) maurus Rohwer, 1918. Ent. Soc. Wash., Proc. 20: 89. ♀, ♂.
- Biology: Atwood, 1943. In Atwood and Peck, Canad. Jour. Res., Sect. D, Zool. Sci. 21: 131. — Tripp and Wallace, 1965. Canad. Dept. Forestry, Forest Ent. and Path. Branch Ann. Rpt. 1965, p. 95.
- merkeli** Ross, Ga., Fla. Host: *Pinus elliottii* var. *densa*. Slash pine sawfly.
Neodiprion merkeli Ross, 1961. Ent. Soc. Amer., Ann. 54: 452. ♀, ♂.
- Biology: Wilkinson, 1965. Fla. Ent. 48: 271. — Wilkinson, 1968. Fla. Ent. 51: 199. (a hybrid of *N. warreni* X *N. excitans* ?). — Wilkinson, 1971. Ent. Soc. Amer., Ann. 64: 241-247 (oviposition pattern; descriptions of stages).
- nigroscutum** Middleton, Ont., Mich., Wis. Host: *Pinus banksiana* is preferred, but also on *P. resinosa*, *P. strobus*.
Neodiprion (Neodiprion) nigroscutum Middleton, 1933. Canad. Ent. 65: 80. ♀.
- Taxonomy: Wallace and Sipple, 1958. Jour. Econ. Ent. 51: 125 (distribution).

Biology: Becker and Benjamin, 1967. Canad. Ent. 99: 146-159.

pinetum (Norton). Newfoundland to N. C. w. to Ill., Iowa, Mo. Ecology: Found especially in ornamental plantings of white pine. Host: *Pinus strobus*, to a much lesser extent *Pinus echinata*, *P. mugho*, *P. resinosa*, *P. rigida*. White pine sawfly.

Lophyrus pinetum Norton, 1869. Amer. Ent. Soc., Trans. 2: 328. ♀.

Lophyrus pinetorum Dalla Torre, 1894. Cat. Hym., v. 1, p. 297. Emend.

Biology: Britton, 1925. Conn. (State) Agr. Expt. Sta., Bul. 265: 337. —Brown, 1938. Ont. Ent. Soc., Ann. Rpt. 1937, p. 14. —Pierson, 1943. Maine Forestry Comm., Ed. 5, p. 55. —Atwood, 1943. In Atwood and Peck, Canad. Jour. Res., Sect. D, Zool. Sci. 21: 128. —Reeks and Smith, 1945. Acad. Nat. 2: 10. —Finlayson, 1963. Canad. Ent. 95: 481-482 (parasites). —Baker, 1972. U. S. Dept. Agr., Misc. Pub. 1175, p. 446.

pinusrigidae (Norton). Maine, Mass., N. Y., N. J. Host: *Pinus rigida*, *P. echinata*.

Lophyrus pinus-rigida Norton, 1868. In Packard, Guide Study Ins., p. 228.

Lophyrus Akhursti Norton, 1869. Amer. Ent. Soc., Trans. 2: 234. ♀.

Lophyrus pini-rigidae Packard, 1881. Ins. Injurious Trees, pp. 399-400. Emend.

Biology: Schaffner, 1943. Jour. Forestry 41: 587.

pratti banksianae Rohwer. N. B., Que. w. to Man., Mich., Wis., Minn. Host: *Pinus banksiana*; also on *Pinus resinosa* and *P. sylvestris* if grown with preferred host. Jack pine sawfly.

Neodiprion (Neodiprion) banksianae Rohwer, 1925. Ent. Soc. Wash., Proc. 27: 115. ♀, ♂.

Neodiprion (Neodiprion) ontarioensis Middleton, 1933. Canad. Ent. 65: 83. ♀.

Biology: Atwood, 1943. In Atwood and Peck, Canad. Jour. Res., Sect. D, Zool. Sci. 21: 130.

—Green, 1954. Canad. Ent. 86: 261-274 (humidity reactions and water balance of larva).

—Ghent, 1955. Canad. Ent. 87: 229-238 (oviposition). —Shenefelt and Benjamin, 1955. Wis.

Agr. Col., Ext. Cir. 500: 30-31. —Green and de Freitas, 1955. Canad. Ent. 87: 427 (frass

drop studies). —Ghent, 1957. Canad. Jour. Zool. 36: 175-183 (feeding orientation). —Ewan,

1957. U. S. Dept. Agr., Forest Pest Leaflet 17, 4 pp. —Ghent, 1960. Behaviour 16: 110-148

(group feeding behavior of larvae). —Griffiths, 1960. Canad. Ent. 92: 653-658 (parasites).

—Finlayson, 1963. Canad. Ent. 95: 482-483 (parasites). —Moens and Atwood, 1963. Canad.

Ent. 95: 779-782 (inheritance of larva color pattern). —McLeod, 1968. Canad. Bi-Monthly

Res. Notes 24: 5-6 (in Que.). —Tostowaryk, 1971. Ent. Soc. Amer., Ann. 64: 1424-1427

(relationship between parasitism and predation). —Baker, 1972. U. S. Dept. Agr., Misc.

Pub. 1175, pp. 442-443.

Morphology: Ghent, 1956. Canad. Ent. 88: 17-23 (linear increment in width of head capsule).

pratti paradoxicus Ross. N. S., N. B., Maine s. to Md. Host: *Pinus banksiana*, *P. rigida*, *P. sylvestris*, *P. echinata*.

Neodiprion pratti paradoxicus Ross, 1955. Forest Sci. 1: 199. ♀, ♂.

Biology: Forbes, Underwood, Cuming, and Eidt, 1961. Canad. Dept. Forestry, Forest Ent. and Path. Branch, Ann. Rpt. 1961, p. 27. —Baker, 1972. U. S. Dept. Agr., Misc. Pub. 1175, p. 443.

pratti pratti (Dyar). N. J. to N. C. w. to Ohio, Ind., Ill., Ky. Host: *Pinus virginiana*, *P. echinata* are preferred hosts, but also on *Pinus rigida*, *P. taeda*, *P. palustris*, *P. resinosa*, and *Picea abies*.

Lophyrus pratti Dyar, 1899. Ent. Soc. Wash., Proc. 4: 262. ♀.

Neodiprion (Neodiprion) dyari Rohwer, 1918. Ent. Soc. Wash., Proc. 20: 85. ♀, ♂.

Biology: Hetrick, 1956. Forest Sci. 2: 183. —McIntyre and Dutky, 1961. Jour. Econ. Ent. 54: 809-810 (virus for control). —Bobb, 1963. Jour. Econ. Ent. 56: 618-621. —Morris,

Schroeder, and Bobb, 1963. Pine sawfly in Va., Va. Div. Forestry, 42 pp. —Schaefer, 1964.

U. S. Forest Service, Res. Paper WO-2, 8 pp. —Bobb, 1965. Jour. Econ. Ent. 58: 925-926

(parasites, predators). —Baker, 1972. U. S. Dept. Agr., Misc. Pub. 1175, pp. 441-442.

Morphology: Schaefer, 1965. Canad. Ent. 97: 941-945 (fatty acids). —Schaefer, Kaplanis, and

Robbins, 1965. Jour. Ins. Physiol. 11: 1013-1021 (relations of sterols to two host plants).

rugifrons Middleton. Ont., Wis. Host: *Pinus banksiana*.

Neodiprion (Neodiprion) rugifrons Middleton, 1933. Canad. Ent. 65: 79. ♀.

Taxonomy: Becker, Wilkinson, and Benjamin, 1966. Ent. Soc. Amer., Ann. 59: 173-178.

- Biology: Wilkinson, Becker, and Benjamin, 1966. Ent. Soc. Amer., Ann. 59: 786-792. — Baker, 1972. U. S. Dept. Agr., Misc. Pub. 1175, p. 447.
- swainei** Middleton. N. B., Que. w. to Man., Mich., Wis., Minn. Host: *Pinus banksiana* is preferred, but also on *Pinus resinosa*, *P. strobus*, and *P. sylvestris* if near preferred host. Swaine jack pine sawfly.
- Neodiprion (Neodiprion) swainei* Middleton, 1931. Ent. Soc. Wash., Proc. 33: 171. ♀, ♂.
- Biology: Atwood, 1943. In Atwood and Peck, Canad. Jour. Res., Sect. D. Zool. Sci. 21: 137. — Ghent and Wallace, 1958. Forest Sci. 4: 264-272 (oviposition). — Wallace and Sipple, 1958. Jour. Econ. Ent. 51: 125 (in Mich.). — Franklin, 1959. Ent. News 70: 62. — Smirnov, 1959. Canad. Ent. 91: 246-248 (predators). — Smirnov, 1960. Canad. Ent. 92: 957-958 (migration phenomenon). — Smirnov, 1961. Jour. Ins. Path. 3: 29-46 (virus diseases). — McLeod, 1961. Canad. Ent. 93: 888 (extracting cocoons from soil). — Tripp, 1961. Canad. Ent. 93: 40 (parasites). — Benjamin and Underwood, 1953. Jour. Econ. Ent. 46: 703. — Tripp, 1962. Canad. Ent. 94: 908 (parasites). — Lyons, 1962. Canad. Ent. 94: 49-58 (effect of aggregation on egg and larval survival). — Finlayson, 1963. Canad. Ent. 95: 483-484 (parasites). — Pilon, Tripp, McLeod, and Ilnitzky, 1964. Canad. Ent. 96: 1450 (temperature influence on pre-spinning eonymphs). — Becker and Benjamin, 1964. Canad. Ent. 96: 589-599. — Lyons, 1964. Canad. Ent. 96: 1373-1407 (spatial distribution, sampling). — Lyons, 1964. Ont. Ent. Soc., Proc. 94: 5-37. — Tripp, 1965. Canad. Ent. 97: 92. — McLeod, 1966. Canad. Ent. 98: 430-447 (cocoon distribution). — Pilon, 1966. Canad. Ent. 98: 789 (temperature and humidity influence on life span of adults). — Smirnov, 1967. Canad. Ent. 99: 242-248 (virus diseases). — Smirnov, 1967. Jour. Ins. Path. 9: 269-271 (virus diseases). — Smirnov, 1967. Canad. Ent. 99: 214-216 (detecting viruses). — Smirnov, 1968. Canad. Ent. 100: 313-318 (cysts in pupae). — Lyons, 1970. Canad. Ent. 102: 68-84 (reproductive capacity). — McLeod, 1970. Forestry Chronicle 46: 1-8 (epidemiology). — Tostowaryk, 1971. Ent. Soc. Amer., Ann. 64: 1424-1427 (relationship between parasitism and predation). — Philogene and Benjamin, 1971. Jour. Ins. Physiol. 17: 1711-1716 (diapause as influenced by temperature and photoperiod). — Philogene, 1971. Canad. Jour. Zool. 49: 449-450 (sensitivity of larvae to light). — Smirnov, 1971. Phytoprotection 52: 24-27 (management of blueberry fields to protect surrounding jack pine stands against *swainei*). — Smirnov, 1971. Canad. Ent. 103: 356-362 (transmission of disease by means of *swainei* parasites). — Philogene and Benjamin, 1971. Canad. Ent. 103: 1705-1715 (temperature and photoperiod effect on immature stages and adults). — Baker, 1972. U. S. Dept. Agr., Misc. Pub. 1175, pp. 444-445.
- taedae linearis** Ross. Ohio, S. C. w. to Ill., Mo., Tex. Host: *Pinus taeda*, *P. echinata*.
- Neodiprion taedae linearis* Ross, 1955. Forest Sci. 1: 199, 204. ♀, ♂.
- Biology: Warren and Coyne, 1958. Ark. Agr. Expt. Sta., Bul. 602, 23 pp. — Coyne, 1959. U. S. Dept. Agr., Forest Pest Leaflet 34, 4 pp. — Wingfield and Warren, 1971. Kans. Ent. Soc., Jour. 44: 491-500 (effect of temperature on cocoon stage). — Wingfield and Warren, 1972. Kans. Ent. Soc., Jour. 45: 1-6 (effect of photoperiod on development). — Baker, 1972. U. S. Dept. Agr., Misc. Pub. 1175, pp. 443-444.
- taedae taedae** Ross. Va. and probably adjacent states. Host: *Pinus taeda*, to a lesser extent *Pinus echinata*, *P. virginiana*.
- Neodiprion taedae taedae* Ross, 1955. Forest Sci. 1: 199, 204. ♀, ♂.
- Biology: Hetrick, 1941. Jour. Econ. Ent. 34: 373-377 (*americanum*, nec Leach). — Hetrick, 1956. Forest Sci. 2: 183. — Baker, 1972. U. S. Dept. Agr., Misc. Pub. 1175, p. 443.
- virginiana** Rohwer. Va., W. Va., N. C., Tenn., Fla. Host: *Pinus virginiana*, *P. clausa*. Records in literature, especially from Canada and the North Central states, pertaining to *virginiana* are probably not this species. Species limits for this probable complex are not yet settled.
- Neodiprion (Neodiprion) virginiana* Rohwer, 1918. Ent. Soc. Wash., Proc. 20: 87. ♀, ♂.
- Neodiprion (Neodiprion) affinis* Rohwer, 1918. Ent. Soc. Wash., Proc. 20: 88. ♀, ♂.
- warreni** Ross. Fla., La., Ark. Host: *Pinus echinata*, *P. glabra*.
- Neodiprion warreni* Ross, 1961. Ent. Soc. Amer., Ann. 54: 451. ♀, ♂.
- Biology: Wilkinson, 1968. Fla. Ent. 51: 199.

SPECIES GROUP SERTIFER

abietis (Harris). Newfoundland to Alaska s. to Maine, Mich., Minn., Calif. Ecology: Widespread. Host: *Abies balsamea*, *A. concolor*, *A. magnifica*, *Picea glauca*, *P. mariana*, *P. engelmannii*, *P. sitchensis*, *Tsuga heterophylla*, *Pseudotsuga menziesii*. Biologically different material has been reared from different hosts, and there are slight differences in structure and color between populations of this species complex. Balsam fir sawfly. *Lophyrus abietis* Harris, 1841. Rpt. Ins. Mass. Injurious to Veg., p. 376. Larva.

Biology: Bird, 1929. Ont. Ent. Soc., Ann. Rpt. 1929, pp. 76-82. —Brown, 1933. Canad. Dept. Agr., Forest Biol. Pub. 2, 4 pp. —Brown, 1941. Canad. Dept. Agr., Pub. 712: 50. —Schaffner, 1943. Jour. Forestry 41: 583. —Pierson, 1943. Maine Forest Comm., Ed. 5, p. 17. —Reeks and Smith, 1945. Acad. Nat. 2: 10. —Struble, 1957. Forest Sci. 3: 306-310 (in Calif.). —Struble, 1959. Jour. Forestry 57: 510-511 (egg sampling). —Finlayson, 1963. Canad. Ent. 95: 476-478 (parasites). —Tripp and Wallace, 1965. Canad. Dept. Forestry, Forest Ent. and Path. Br., Ann. Rpt. 1965, p. 95. —Baker, 1972. U. S. Dept. Agr., Misc. Pub. 1175, pp. 446-447. —Knerer and Atwood, 1973. Science 179: 1090-1099 (behavior; splitting the *N. abietis* complex).

burkei Middleton. Mont., Wyo. Host: *Pinus contorta*. Lodgepole sawfly. *Neodiprion (Neodiprion) burkei* Middleton, 1931. Ent. Soc. Wash., Proc. 33: 174. ♀, ♂.

Biology: Burke, 1932. U. S. Dept. Agr., Cir. 224: 11-19.

deleoni Ross. Wash. (North Port). Host: *Abies grandis*.

Neodiprion deleoni Ross, 1955. Forest Sci. 1: 200, 205. ♀, ♂.

demoides Ross. Calif. (Yosemite Natl. Pk.). Host: *Pinus albicaulis*.

Neodiprion demoides Ross, 1955. Forest Sci. 1: 201, 205. ♀, ♂.

eduliculus Ross. Colo., N. Mex., Utah, Nev. Host: *Pinus eduliculus*, *P. monophylla*.

Neodiprion eduliculus Ross, 1955. Forest Sci. 1: 201, 206. ♀, ♂.

Biology: McGregor and Sandin, 1968. Canad. Ent. 100: 51-57.

fulviceps (Cresson). Mont., Colo. w. to Oreg., Calif.; Mexico. Host: *Pinus ponderosa*, *P. jeffreyi*, *P. lambertiana*, *P. radiata*, *P. coulteri*. Either a variable species or a confusing species complex.

Lophyrus fulviceps Cresson, 1880. Amer. Ent. Soc., Trans. 8: 25. ♀.

Biology: Dahlsten, 1961. Canad. Ent. 93: 182-195 (*Neodiprion* sp.). —Stark and Dahlsten, 1961. Canad. Ent. 93: 443-450 (cocoon distribution). —Stark and Dahlsten, 1965. Canad. Ent. 97: 550-552 (egg distribution). —Dahlsten, 1966. Canad. Ent. 98: 1055-1083 (biological differences indicate several distinct populations). —Dahlsten, 1967. Ecology 48: 275.

Morphology: Daly, 1963. Ent. Soc. Amer., Ann. 56: 303.

gillettei (Rohwer). Colo., N. Mex., Ariz.; Mexico. Host: *Pinus ponderosa*.

Lophyrus gillettei Rohwer, 1908. N. Y. Ent. Soc., Jour. 16: 113. ♀, ♂.

mundus Rohwer. Oreg., Calif. Host: *Pinus ponderosa*.

Neodiprion (Neodiprion) mundus Rohwer, 1918. Ent. Soc. Wash., Proc. 20: 86. ♀.

nanulus contortae Ross. Alta., Idaho, Oreg. Host: *Pinus contorta*, *P. ponderosa*.

Neodiprion nanulus contortae Ross, 1955. Forest Sci. 1: 201, 207. ♀, ♂.

nanulus nanulus Schedl. N. S., N. B. to N. J. w. to Man., Sask., Wis. Host: *Pinus resinosa*, *P. banksiana*, *P. contorta*, *P. rigida*, *P. echinata*, *P. mugho*. Red pine sawfly.

Neodiprion nanulus Schedl, 1933. Ztschr. f. Angew. Ent., Beihefte 20: 449. Larva.

Taxonomy: Schedl, 1935. Deut. Ent. Gesell., Mitt. 6: 41-44 (adults).

Biology: Schedl, 1937. Ztschr. f. Angew. Ent., Beihefte 24: 51. —Schedl, 1939. Internatl. Kong. Ent., Berlin 1938, sect. 7, bd. 3, pp. 2053-2056. —Atwood, 1943. In Atwood and Peck, Canad. Jour. Res., Sect. D, Zool. Sci. 21: 134. —Cannola, Waters, and Nason, 1959. Jour. Econ. Ent. 52: 600 (sequential sampling of eggs). —Kapler and Benjamin, 1960. Forest Sci. 6: 253 (biology in Wis.). —Underwood, 1960. Canad. Ins. Pest Rev. 38: 32. —McCormick and Andresen, 1961. Amer. Mus. Nov. 2032, 6 pp. —Finlayson, 1963. Canad. Ent. 95: 480-481 (parasites). —Tripp and Wallace, 1965. Canad. Dept. Forestry, Forest Ent. and Path. Br., Ann. Rpt. 1965, p. 95. —Underwood, 1967. Canad. Ent. 99: 1114-1116 (parasites). —Baker, 1972. U. S. Dept. Agr., Misc. Pub. 1175, pp. 445-446.

scutellatus Rohwer. Idaho, Wash. Host: *Pseudotsuga menziesii*.

Neodiprion (Neodiprion) scutellatus Rohwer, 1918. Ent. Soc. Wash., Proc. 20: 86. ♀.

Biology: Smith, 1962. Pan-Pacific Ent. 38: 189 (parasites; as *scutellaris*(?)).

sertifer (Geoffroy). Maine, Ont. to N. J. w. to S. Dak., Iowa, Mo.; Europe to Japan, Korea.

Accidentally introduced, first found in N. J. in 1925. Host: *Pinus austriaca*, *P. cembra*, *P. banksiana*, *P. densiflora*, *P. echinata*, *P. montana*, *P. mugho*, *P. nigra*, *P. ponderosa*, *P. resinosa*, *P. rigida*, *P. strobus*, *P. sylvestris*, *P. thunbergii*, and many other pines in Eurasia. European pine sawfly.

Tenthredo sertifera Geoffroy, 1785. In Fourcroy, Ent. Paris. v. 2, p. 378.

Tenthredo pectinata rufa Retzius, 1783. Genera et Species Insectorum, p. 74. Preocc. on pg. 71.

Tenthredo pini rufa Villers, 1789. Linn. Ent. 3: 88.

Tenthredo juniperi Christ, 1791. Naturgesch. Class. Nomencl., Ins. p. 432.

Tenthredo rufa Latreille, 1807. Gen. Crust. Ins., v. 3, p. 230.

Lophyrus piceae Lepeletier, 1823. Monog. Tenthred., p. 56. ♀, ♂.

Lophyrus basalis Matsumura, 1915. Dai-Nippon Gaityu Zensho 2: 288.

Biology: Soraci, 1939. N. Y. Ent. Soc., Jour. 47: 124. —Schaffner, 1939. Jour. Econ. Ent. 32: 887-888. —Hamilton, 1941. Natl. Shade Tree Conf., Proc. 17: 110-118. —Schaffner, 1943.

Jour. Forestry 41: 583. —Girth and McCoy, 1946. N. J. Dept. Agr., Cir. 363, 18 pp. —Bird

and Whalen, 1953. Canad. Ent. 85: 433 (virus). —Bird, 1953. Canad. Ent. 85: 437-446 (virus diseases). —Baldwin and House, 1954. Canad. Jour. Zool. 32: 9 (thermal conditioning effects on larva). —Benjamin, Larson, and Drooz, 1955. Jour. Forestry 53: 359. —Finlayson

and Finlayson, 1958. Canad. Ent. 90: 223-225 (parasites). —Wilson, 1966. Jour. Econ. Ent. 59: 1043-1049 (effect of population levels on young scotch pines). —Griffiths, 1959. Canad.

Ent. 91: 501-512. —Ghent, 1959. Canad. Jour. Zool. 37: 267 (oviposition). —Will, 1960. Pa. Acad. Sci., Proc. 34: 229. —Finlayson, 1960. Canad. Ent. 92: 20-40 (parasites). —Lyons and

Griffiths, 1962. Canad. Ent. 94: 994 (development in cocoons). —Wallace and Sullivan, 1963. Canad. Ent. 95: 1051-1066 (effect of temperature on development in cocoon). —Lyons,

1964. Ont. Ent. Soc., Proc. 95: 5-37. —Lyons, 1964. Canad. Ent. 96: 1373 (spatial distribution). —Wilson, 1965. U. S. Dept. Agr., Forest Pest Leaflet 98, 8 pp. —Henson,

1965. Canad. Ent. 97: 773 (rearing techniques). —Sullivan, 1965. Canad. Ent. 97: 970 (ability of eggs to withstand low winter temperatures). —Sullivan and Wallace, 1965.

Canad. Jour. Zool. 43: 233-245 (photoperiodism in development). —Austara, 1966. Norske Skogsforsoksv. Meddel. 21: 5-15. —Rose and Sipple, 1966. Canad. Ent. 98: 39-45 (cocoon and parasite distribution). —Wilson, 1966. U. S. Dept. Agr., Forest Pest Leaflet 99, 4 pp.

—Wallace and Sullivan, 1966. Canad. Jour. Zool. 44: 147 (geographic variation in photoperiod reaction). —Sullivan and Wallace, 1967. Canad. Ent. 99: 834-850 (temperature and photoperiod effect on diapause). —Griffiths, 1968. Canad. Ent. 100: 1095-1099

(parasites). —Sullivan and Wallace, 1968. Canad. Jour. Zool. 46: 959-963. —Sullivan and Wallace, 1968. Canad. Jour. Zool. 46: 1082-1083 (photoperiod response). —Griffiths, 1969.

Canad. Ent. 101: 673-713 (parasites). —Wilson, 1971. U. S. Dept. Agr., Forest Pest Leaflet (rev.), 6 pp. —Austara 1971. Norsk. Ent. Tidsskr. 18: 45-48 (cold hardiness in eggs).

—Baker, 1972. U. S. Dept. Agr., Misc. Pub. 1175, pp. 447-448. —Eisner, et al. 1974. Science 184: 996-999 (defensive use of a plant resin).

Morphology: Watson, 1955. Canad. Ins. Pest Rev. 33: 229 (gynandromorphs). —Togashi, 1958. Kontyu 25: 6-12 (internal reproductive organs). —Marek, 1963. Ceskoslov. Spolec. Zool.

Vest. 27: 115-124 (physiology). —Pschorn-Walcher, 1970. Ztschr. f. Angew. Ent. 66: 63-68 (morphological differences between alpine and lowland populations).

tsugae Middleton. Mont., Idaho, Alaska, B. C., Wash., Oreg. Host: *Tsuga heterophylla* is preferred, but also on *Tsuga mertensiana*, *Picea sitchensis*, and *Abies amabilis* when adjacent to preferred host. Hemlock sawfly.

Neodiprion (Neodiprion) tsugae Middleton, 1933. Canad. Ent. 65: 77. ♀, ♂.

Biology: Hopping and Leech, 1936. Canad. Ent. 68: 71-91. —Furniss and Dowden, 1941 Jour. Econ. Ent. 34: 46-52. —Downing, 1959. U. S. Dept. Agr., Forest Pest Leaflet 31, 4 pp.

—Torgersen, 1969. Ent. Soc. Brit. Columbia, Proc. 66: 53-62 (parasites). —Schmiege, 1970.

- U. S. Dept. Agr., Forest Pest Leaflet 31, 4 pp. —Hard and Schmiede, 1968. U. S. Dept. Agr., Forest Service Paper, PNW-65, 11 pp. (in s. e. Alaska). —Hard, 1971. U. S. Dept. Agr., Forest Service, Res. Note, Pacific Northwest Forest and Range Expt. Sta. 157, 8 pp.
- ventralis** Ross. Colo. Host: *Pinus ponderosa*.
Neodiprion ventralis Ross, 1955. Forest Sci. 1: 201, 206. ♀, ♂.
- werner** Ross. Ariz. (Pinelino Mts., Hospital Flat, 9000 ft.).
Neodiprion werner Ross, 1955. Forest Sci. 1: 200, 205. ♀.

UNPLACED TAXA OF NEODIPRION ROHWER

Two of the following species were described from males. Because the taxonomy of *Neodiprion* is based primarily on females, they cannot be placed.

abdominalis (Say), n. comb. "North-west Territory."

Lophyrus abdominalis Say, 1824. In Keating, Narr. Long's 2nd Exped., v. 2 (App.), p. 315. ♀.

edwardsii (Norton). Calif.

Lophyrus edwardsii Norton, 1869. Amer. Ent. Soc., Trans. 2: 330. ♂.

hypomelas (Rohwer). Colo.

Lophyrus hypomelas Rohwer, 1908. N. Y. Ent. Soc., Jour. 16: 113. ♂.

Genus DIPRION Schrank

Pteronus Jurine, 1801. Intell. Blatt. Litt.-Ztg. Erlangen, v. 1, p. 163. Suppressed by Internatl. Comm. Zool. Nomencl., Op. 157, 1936.

Diprion Schrank, 1802. Fauna Bioca, v. 2, p. 209.

Type-species: *Tenthredo pini* Linnaeus. Desig. by Rohwer, 1910.

Lophyrus Latreille, 1802. Hist. Nat. Crust. Ins., v. 3, p. 302. Preocc. by Poli, 1791.

Type-species: *Tenthredo pini* Linnaeus. Monotypic.

Anachoreta Gistel, 1848. Naturgesch. Thierr. f. hoh. Schul., p. 9. N. name for *Lophyrus* Latreille.

Cristiger Gistel, 1848. Naturgesch. Thierr. f. hoh. Schul., p. 144.

Type-species: *Tenthredo pini* Linnaeus. Monotypic.

A Palaearctic genus of five or six species, one of which has been introduced into North America.

similis (Hartig). Que., Maine, Ont. to Va. w. to Minn., Ind.; Europe. Introduced, first recorded in Conn. in 1914, probably entering on imported nursery stock. Host: *Pinus banksiana*, *P. cembra*, *P. divaricata*, *P. flexilis*, *P. montana*, *P. monticola*, *P. mugho*, *P. resinosa*, *P. rigida*, *P. strobus*, *P. sylvestris*, *P. taeda*, *P. virginiana*, and many other pines in Europe. Introduced pine sawfly.

Lophyrus similis Hartig, 1834. Forstl. Convers.-Lex., p. 987 b.

Lophyrus eremita Thomson, 1871. Hym. Scand., v. 1, p. 62.

Diprion simile var. *atroscutellatum* Enslin, 1916. Forstl. Naturw. Ztschr. 14: 9.

Diprion simile var. *claristernis* Enslin, 1916. Forstl. Naturw. Ztschr. 14: 9.

Biology: Britton, 1916. Jour. Econ. Ent. 9: 281-282. —Zappe, 1917. Jour. Econ. Ent. 10: 188-190. —Middleton, 1923. U. S. Dept. Agr., Bul. 1182, 21 pp. —Hartley, 1923. Jour. Econ. Ent. 16: 386-388 (in Pa.; parasites). —Munro, 1935. Canad. Ent. 67: 137-140. —Peirson, 1943. Maine Forest Comm., Ed. 5, p. 15. —Schaffner, 1943. Jour. Forestry 41: 587. —Will, 1944. Pa. Acad. Sci., Proc. 18: 49. —Tsao and Hodson, 1956. Jour. Econ. Ent. 49: 400. —Coppel, 1960. Ent. Soc. Amer., Ann. 53: 847 (cocoons as habitats for other Arthropods). —Coppel, Casida, and Dauterman, 1960. Ent. Soc. Amer., Ann. 53: 510-512 (sex attractants). —Anderson and Schmiede, 1961. U. S. Dept. Agr., Forest Service, Lake States Forest Expt. Sta. Paper 88, p. 7. —Mertins, 1961. Wis. Acad. Sci. Arts and Letters, Trans. 59: 127-168. —Finlayson, 1962. Canad. Ent. 271-282 (parasites). —Casida, Coppel, and Watanabe, 1963. Jour. Econ. Ent. 56: 18-24. —Wilson, 1966. U. S. Dept. Agr., Forest Pest Leaflet 99, 4 pp. —Mertins and Coppel, 1971. Ann. Ent. Soc., Amer. 64: 1191-1192 (sexual behavior in gynandromorphs). —Baker, 1972. U. S. Dept. Agr., Misc. Pub. 1175, pp. 450-451.

Morphology: Mertins and Coppel, 1972. Ent. Soc. Amer., Ann. 65: 33-38 (abdominal glands in female).

Genus GILPINIA Benson

Gilpinia Benson, 1939. Bul. Ent. Res. 30: 341.

Type-species: *Lophyrus polytomus* Hartig. Orig. desig.

A Palaearctic genus of about 24 species, two of which have been introduced into North America. In Asia, representatives of this genus are found as far south as Pakistan, northern India, and Thailand. In many references, the species below have been assigned to the genus *Diprion*.

frutetorum (Fabricius). Que., Maine, Ont. s. to N. J., Pa.; Europe to Siberia. Accidentally introduced, first found in Mass. and R. I. in 1932. Host: *Pinus sylvestris*, *P. resinosa* are favored, but also found on *Pinus banksiana*, *P. strobus*, *P. mugho*, *P. nigra*, and *P. cembra* in North America, and other pines in Eurasia.

Tenthredo frutetorum Fabricius, 1793. Ent. System., v. 2, p. 111.

Lophyrus variegatus Hartig, 1834. Forstl. Convers.-Lex., p. 990.

Lophyrus thomsoni Konow, 1884. Deut. Ent. Ztschr. 28: 312.

Diprion frutetorum var. *lutescens* Enslein, 1916. Forstl. Naturw. Ztschr. 14: 13.

Diprion frutetorum var. *luteolum* Enslein, 1916. Forstl. Naturw. Ztschr. 14: 13.

Biology: Gray, 1938. Ent. Soc. Ann. Rpt. 1937, pp. 50-51. —Schaffner, 1943. Jour.

Forestry 41: 586. —Schaffner, 1944. Conn. State Ent., 43rd Rpt., 1943, Bull. 481, pp. .

310-311. —Hsin, 1935. Ztschr. f. Angew. Ent., Beihefte 22: 254, 255-260, 267-271, 289-292

(biological study in Germany). —de Oliveira and Juliet, 1969. Phytoprotection 50: 59-69.

—Baker, 1972. U. S. Dept. Agr., Misc. Pub. 1175, pp. 451-452.

hercyniae (Hartig). Newfoundland, Que., Ont. to Pa. w. to Man.; Europe. Accidentally introduced, first found in Ont. in 1922 and in N. H. in 1929; first serious infestation was at Gaspe, Que. in 1930. Host: *Picea glauca*, *P. rubens*, *P. mariana*, *P. abies*, *P. excelsa*, *P. pungens*, *P. sitchensis*, and other species of spruce in infested areas here and in Europe. European spruce sawfly. Prior to 1941, the species found in North America was referred to under the name *polytomus* (Hartig).

Lophyrus hercyniae Hartig, 1837. Fam. Blattwespen und Holzwespen, nebst Einleitung Naturgesch. Hym., p. 123.

Taxonomy: Smith, 1938. Nature 141: 121. —Smith, 1941. Sci. Agr. 21: 245-305 (cytology and parthenogenesis). —Reeks, 1941. Canad. Ent. 73: 181-187 (*hercyniae* and *polytomus* as distinct species). —Balch, Reeks, and Smith, 1941. Canad. Ent. 73: 198-202. —Forster, 1949. Canad. Ent. 81: 112.

Biology: Dowden, 1931. Tree Pest Leaflet 34, 4 pp. —Balch and Simpson, 1932. Canad. Ent. 64: 162-163. —Balch, 1934. Canad. Dept. Agr., Div. Forest Ins., Special Cir., 6 pp. —Balch, 1936. Canad. Ent. 68: 23-31. —MacAloney, 1936. Tree Pest Leaflet 6, 4 pp. —MacAloney, 1936. Jour. Forestry 34: 125-129. —Atwood, 1938. Ont. Ent. Soc., Ann. Rpt. 1937, pp. 48-50. —Peirson and Nash, 1939. Maine Forest Comm., 22nd Bien. Rpt. 1937-1938, pp. 79-96. —Balch, 1939. Jour. Econ. Ent. 32: 412-418. —Dowden, 1939. Jour. Econ. Ent. 32: 619-624. —Prebble, 1941. Canad. Jour. Res. 19: 295-322, 323-346, 350-362 (diapause). —Brown, 1941. Canad. Dept. Agr., Pub. 712, 5 pp. —Goebeil, 1941. Canad. Jour. Res. 19: 363-382 (diapause). —Goebeil, 1942. Jour. Econ. Ent. 35: 677-679 (diapause). —Schaffner, 1943. Jour. Forestry 41: 585-586. —Balch and Bird, 1944. Sci. Agr. 25: 65-80. —Reeks and Smith, 1945. Acad. Nat. 2: 10. —Morris, 1949. Mich. Univ. School Forestry and Conserv., Bul. 12, 58 pp. —Morris, 1951. Canad. Ent. 83: 133-147. —Finlayson and Finlayson, 1958. Canad. Ent. 90: 584 (parasites). —Finlayson, 1960. Canad. Ent. 92: 922-941 (parasites). —Balch, 1960. Canad. Ent. 92: 301. —Martineau, 1963. Canad. Ent. 95: 317. —Neilson and Morris, 1964. Canad. Ent. 96: 773-784 (regulation in Maritime Provinces, 1937-1963). —Monteith, 1967. Canad. Ent. 99: 682-685 (responses to food plant and tachinid parasite). —Baker, 1972. U. S. Dept. Agr., Misc. Pub. 1175, pp. 452-453. —Wong, 1972. Canad. Ent. 104: 755-756 (spread in Man.).

Morphology: Reeks, 1937. Canad. Ent. 69: 257-264 (adult).

Family TENTHREDINIDAE

This is the largest sawfly family with over 5,000 world species. Representatives of the Tenthredinidae are found in all regions of the world, but it is a dominant family only in the Northern Hemisphere where their predominance increases northwards. Most members of this family are cylindrical, wasplike insects ranging in size from 2.5 mm. to about 15 mm. in length. Most have nine-segmented antennae though some have fewer and some more. Habits and host plants are diverse. Most larvae feed externally on the foliage of the host plant, but some are leafminers, gallformers, or shootborers. Most larvae are caterpillarlike.

The division of the family into subfamilies has always been controversial, and there are nearly as many different arrangements as authors. There are current differences between North American and European workers. Eight subfamilies are utilized in this catalog, most of the units being the same as those previously recognized in the North American literature. Most are readily separated on the basis of wing venational differences.

For general references to this family, see those listed under Suborder Symphyta.

SUBFAMILY SELANDRIINAE

Members of this subfamily are associated with ferns, grasses, and sedges. The Selandriinae are poorly represented in the northern regions of the world, but it is one of the dominant groups in the tropics; for example, nearly 200 species have been described from the Americas south of the United States.

Revision: Smith, 1969. U. S. Dept. Agr. Tech. Bul. 1398, 48 pp. (Nearctic species).

Taxonomy: Malaise, 1963. Ent. Tidskr. 84: 159-215 (key to world genera).

TRIBE STRONGYLOGASTRINI

Genus ERIOCAMPIDEA Ashmead

Eriocampidea Ashmead, 1898. Canad. Ent. 30: 256.

Type-species: *Eriocampidea arizonensis* Ashmead. Orig. desig.

Cockerellonis MacGillivray, 1908. Canad. Ent. 40: 365.

Type-species: *Cockerellonis occidentalis* MacGillivray. Orig. desig.

A small genus found from southwestern United States into Mexico.

arizonensis Ashmead. N. Mex., Ariz.; Mexico.

Eriocampidea arizonensis Ashmead, 1898. Canad. Ent. 30: 256. ♀.

Cockerellonis occidentalis MacGillivray, 1908. Canad. Ent. 40: 365. ♀ (?).

Genus HEMITAXONUS Ashmead

Hemitaxonus Ashmead, 1898. Canad. Ent. 30: 311.

Type-species: *Taxonus dubitatus* Norton. Orig. desig.

Epitaxonus MacGillivray, 1908. Canad. Ent. 40: 365.

Type-species: *Taxonus albidopictus* Norton. Orig. desig.

Sahlbergia Forsius, 1910. Meddel. Soc. Fauna et Flora Fenn. 36: 49.

Type-species: *Sahlbergia strathiopteridis* Forsius. Monotypic.

Larvae of this holarctic genus feed on ferns. Mature larvae may bore into soft wood or other substances where they pupate or overwinter.

Revision: Smith, 1966. Ent. Soc. Wash., Proc. 68: 113-120.

albidopictus (Norton). N. S., N. B., Que. to Ala. w. to Minn., Iowa, Kans. Host: *Onoclea sensibilis*.

Taxonus albido-pictus Norton, 1868. Amer. Ent. Soc., Trans. 2: 213. ♀, ♂.

Taxonus amicus Norton, 1868. Amer. Ent. Soc., Trans. 2: 213. ♀, ♂.

Hemitaxonus rufopictus Rohwer, 1910. U. S. Natl. Mus., Proc. 41: 204. ♀.

dubitatus (Norton). N. S., N. B., Que. to N. C. w. to Minn., Ill., Tex. Host: *Onoclea sensibilis*.

Taxonus dubitatus Norton, 1862. Boston Soc. Nat. Hist., Proc. 9: 119. ♀, ♂.

Biology: Dyar, 1897. N. Y. Ent. Soc., Jour. 5: 20. — Krombein, 1960. Ent. News 71: 30 (in sumach pith).

multicinctus Hall. Maine, Md., Ont., Ohio. Host: *Athyrium thelypteroides*.

Hemitaxonus multicinctus Hall, 1917. Ent. Soc. Wash., Proc. 19: 28. Egg, larva.

Biology: Hall, 1917. Ent. Soc. Wash., Proc. 19: 28.

primarius Smith. B. C., Oreg., Calif.

Hemitaxonus primarius Smith, 1966. Ent. Soc. Wash., Proc. 68: 119. ♀, ♂.

Genus **STRONGYLOGASTER** Dahlbom

Tenthredo subg. *Strongylogaster* Dahlbom, 1835. Conspectus Tenthred., Siricid., Oryssin. Scand., p. 13.

Type-species: *Tenthredo cingulata* Fabricius. Desig. by MacGillivray, 1908.

Thrinax Konow, 1885. Wien. Ent. Ztg. 4: 19.

Type-species: *Thrinax contigua* Konow. Desig. by MacGillivray, 1908.

Pseudotaxonus Costa, 1894. Prosp. Imen. Ital., p. 157.

Type-species: *Tenthredo filicis* Klug. Monotypic.

Polystichophagus Ashmead, 1898. Canad. Ent. 30: 310.

Type-species: *Tenthredo filicis* Klug. Orig. desig.

Prototaxonus Rohwer, 1910. Canad. Ent. 42: 49.

Type-species: *Prototaxonus typicus* Rohwer. Monotypic.

Larvae of this genus feed on the underside of fronds of ferns. Mature larvae may bore into soft wood, bark of trees, or other substances for overwintering and pupation. Adults are found around their host plants in the spring months. The genus is holarctic with about 25 world species. Some authors consider *Thrinax* and *Pseudotaxonus* as distinct genera.

distans Norton. Colo., Utah w. to B. C., Wash., Oreg., Calif. Host: *Pteridium aquilinum*.

Strongylogaster distans Norton, 1868. Amer. Ent. Soc., Trans. 2: 220. ♀.

Strongylogaster pacificus MacGillivray, 1893. Canad. Ent. 25: 241. ♀, ♂.

Biology: Beer, 1955. Kans. Univ. Sci. Bul. 37: 223-249.

impressata Provancher. N. S., N. B., Que. to N. C. w. to Minn., Colo., N. Mex. Host: *Pteridium aquilinum*(?).

Strongylogaster impressata Provancher, 1878. Nat. Canad. 10: 170. ♀.

Strongylogaster luctuosus Provancher, 1885. Addit. Corr. Faune Ent. Canada Hym., p. 12. ♀.

Taxonus rufipes Harrington, 1889. Canad. Ent. 21: 97. ♂.

Thrinax pullatus MacGillivray, 1921. Psyche 28: 34. ♂.

macula (Klug). Ont., B. C.; Europe to Japan. Host: *Athyrium* and *Pteridium*. These hosts were recorded in Europe.

Tenthredo (Allantus) macula Klug, 1814. Mag. Gesell. Naturf. Freunde Berlin 8: 217. ♀.

Thrinax intermedia Konow, 1885. Wien. Ent. Ztg. 4: 22. ♀.

Thrinax contigua Konow, 1885. Wien. Ent. Ztg. 4: 22. ♀, ♂.

multicincta Norton. N. S., N. B., Que. to Fla. w. to Minn., Ill. Host: *Pteridium aquilinum*.

Strongylogaster multicinctus Norton, 1862. Ent. Soc. Phila., Proc. 1: 143. ♀.

Strongylogaster annulosus Norton, 1868. Amer. Ent. Soc., Trans. 2: 211. ♀.

Strongylogaster longulus Norton, 1868. Amer. Ent. Soc., Trans. 2: 216. ♂.

Strongylogaster alboannulatus Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 237. ♀.

Strongylogaster annulosus var. *cingulescens* Ross, 1932. Canad. Ent. 64: 250. ♀, ♂.

Biology: Hogh, 1966. Kans. Ent. Soc., Jour. 39: 347-354.

polita Cresson. Conn., Ont., N. Y.

Strongylogaster politus Cresson, 1880. Amer. Ent. Soc., Trans. 8: 20. ♀.

Strongylogaster politus Provancher, 1882. Nat. Canad. 13: 296. ♀. Preocc.

remota Rohwer. Que., Pa.

Strongylogaster remotus Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 237. ♀.

rufigastrea (Kincaid). Alaska, B. C.

Paraselandria rufigastrea Kincaid, 1900. Wash. Acad. Sci., Proc. 2: 346. ♀.

sorculatipes Cresson. N. B., Que. to Md. w. to Minn., Ill. Host: *Pteridium aquilinum*.

Strongylogaster sorculatipes Cresson, 1880. Amer. Ent. Soc., Trans. 8: 20. ♀.

Strongylogaster sorculatus Provancher, 1882. Nat. Canad. 13: 296. ♀.

Biology: Dyar, 1895. Amer. Ent. Soc., Trans. 22: 310.

tacita (Norton). N. B., Que. to Fla. w. to Wis., Ill. Ecology: Adults collected from *Pteridium aquilinum*.

Tenthredo (Allantus) tacita Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., p. 583. Nom. nud.

Allantus tacitus Norton, 1860. Boston Jour. Nat. Hist. 7: 246. ♀, ♂.

Strongylogaster unicus Norton, 1862. Boston Soc. Nat. Hist., Proc. 9: 120. ♀.

tibialis Cresson. Idaho, B. C., Wash., Oreg., Calif. Host: *Pteridium aquilinum*.

Strongylogaster tibialis Cresson, 1880. Amer. Ent. Soc., Trans. 8: 19. ♀.

Selandria marginata Provancher, 1885. Addit. Corr. Faune Ent. Canada Hym., p. 8. ♀.

Strongylogaster primitivus MacGillivray, 1893. Canad. Ent. 25: 241. ♀.

Prototaronus typicus Rohwer, 1910. Canad. Ent. 42: 50. ♀, ♂.

Biology: Beer, 1955. Kans. Univ. Sci. Bul. 37: 223-249.

tuberculiceps Rohwer. Fla.; Bermuda(?), specimen may be mislabeled.

Strongylogaster tuberculiceps Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 396. ♀.

Strongylogaster melanogaster Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 397. ♂.

TRIBE ANEUGMENINI

Genus ANEUGMENUS Hartig

Emphytus subg. *Aneugmenus* Hartig, 1837. Fam. Blattwespen und Holzwespen, nebst Einleitung Naturgesch. Hym., p. 253.

Type-species: *Tenthredo (Emphytus) coronata* Klug. Monotypic.

Colposelandria Enslin, 1912. Tijdschr. v. Ent. 55: 110.

Type-species: *Colposelandria jacobsoni* Enslin. Orig. desig.

Selandria subg. *Atoposelandria* Enslin, 1913. Deut. Ent. Ztschr., Beih., p. 197.

Type-species: *Selandria furstenbergensis* Konow. Orig. desig.

Polyselandria MacGillivray, 1914. Canad. Ent. 46: 104.

Type-species: *Selandria floridana* MacGillivray. Orig. desig.

Larvae of this holarctic genus feed on ferns. In North America, the genus extends into Mexico.

Revision: Ross, 1930. Canad. Ent. 62: 184-189.

flavipes (Norton). Newfoundland to Fla. w. to Man., Minn., Colo. Host: *Pteridium aquilinum*.

Selandria flavipes Norton, 1862. Boston Soc. Nat. Hist., Proc. 7: 222. ♀, ♂.

Aneugmenus flavitarsis Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 390. ♀.

Aneugmenus flavipes occidentalis Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 390. ♀.

floridella Ross. Ga., Fla.

Selandria floridana MacGillivray, 1895. Canad. Ent. 27: 281. ♂. Preocc. by Cresson, 1880.

Selandria (Aneugmenus) flavipes var. *floridella* Ross, 1930. Canad. Ent. 62: 189. N. name for *floridana* MacGillivray.

padi (Linnaeus). B. C., Wash., Oreg.; Europe to Siberia, N. Africa, Asia Minor. Probably introduced. Host: *Pteridium aquilinum*.

Tenthredo padi Linnaeus, 1761. Fauna Suecica, Ed. 2, p. 390.

Tenthredo (Allantus) stramineipes Klug, 1818. Mag. Gesell. Naturf. Freunde Berlin 8: 75. ♀, ♂.

Tenthredo (Emphytus) coronata Klug, 1818. Mag. Gesell. Naturf. Freunde Berlin 8: 276. ♀.

Tenthredo albipes Lepeletier, 1823. Monog. Tenthred., p. 105.

Selandria rufitarsis Brulle, 1832. Exped. Moree, Zool., v. 2, p. 394. ♀.

Selandria analis Thomson, 1871. Hym. Scand., v. 1, p. 239. ♀.

Selandria cereipes Vollenhoven, 1873. Tijdschr. v. Ent. 16: 13.

Selandria vollenhoveni Gribodo, 1880. Soc. Ent. Ital., Bul. 12: 7.

Selandria bimaculata Cobelli, 1892. Verh. Ges. Wien. 42: 71. ♂.

Selandria oglobleni Dovnar-Zapolskii, 1930. Rev. Russe d'Ent. 24: 90. ♀.

Selandria urbis Ross, 1930. Canad. Ent. 62: 186. ♀.

Taxonomy: Benson, 1968. Brit. Mus. (Nat. Hist.) Ent., Bul. 22: 134.

scutellatus Smith. Ariz.; Mexico. Ecology: Adults collected from ferns.

Aneugmenus scutellatus Smith, 1969. U. S. Dept. Agr. Tech. Bul. 1398, p. 28. ♀, ♂.

Genus BIRKA Malaise

Birka Malaise, 1944. Arkiv for Zool. 35A: 4.

Type-species: *Tenthredo (Allantus) cinereipes* Klug. Orig. desig.

European species of this genus feed on grasses and sedges.

nordica Smith. Man., Alta., Yukon, Alaska, B. C.

Birka nordica Smith, 1969. U. S. Dept. Agr., Tech. Bul. 1398, p. 29. ♀, ♂.

Genus NESOSELANDRIA Rohwer

Nesoselandria Rohwer, 1910. U. S. Natl. Mus., Proc. 37: 657.

Type-species: *Paraselandria imitatrix* Ashmead. Orig. desig.

Neobusarbia Takeuchi, 1928. Formosa Nat. Hist. Soc. Trans. 18: 40.

Type-species: *Neobusarbia flavipes* Takeuchi. Orig. desig.

Melisandra Benson, 1939. Ent. Monthly Mag. 75: 110.

Type-species: *Selandria morio* (Fabricius) Enslin. Orig. desig.

Most species of this genus are found in Asia.

morio (Fabricius). Que., N. H., N. Y., Ont., B. C.; Europe to Siberia, Japan.

Tenthredo morio Fabricius, 1781. Species Insectorum, v. 1, p. 414.

Tenthredo ulmi Schrank, 1802. Fauna Boica, p. 237.

Tenthredo (Selandria) tristis Lepeletier, 1823. Monog. Tenthred., p. 106. ♀, ♂.

Emphytus infuscatus Eversmann, 1847. Soc. Imp. Nat. Moscou, Bul. 20: 29. ♀.

Selandria Fabricii Konow, 1885. Wien. Ent. Ztg. 4: 300.

Aneugmenus brunneus Magretti, 1886. Soc. Ent. Ital., Bol. 18: 25.

Genus EUSTROMBOCEROS Rohwer

Stromboceros subg. *Eustromboceros* Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 394.

Type-species: *Stromboceros (Eustromboceros) melanopterus* Rohwer. Orig. desig.

Stromboceros subg. *Prostromboceros* Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 235.

Type-species: *Stromboceros (Eustromboceros) melanopterus* Rohwer. Orig. desig.

A small genus found from Arizona to Central America.

Taxonomy: Smith, 1971. Amer. Ent. Soc., Trans. 97: 532-533.

rufocaudatus Smith. S. Ariz.

Eustromboceros rufocaudatus Smith, 1969. U. S. Dept. Agr., Tech. Bul. 1398, p. 30. ♂.

Genus STROMBOCERIDEA Rohwer

Stromboceros subg. *Stromboceridea* Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 392.

Type-species: *Stromboceros (Stromboceridea) pilosulus* Rohwer. Orig. desig.

Petersiana Jorgensen, 1913. Buenos Aires Mus. Nac. de Hist. Nat., An. 24: 278.

Type-species: *Petersiniana* (!) *niveana* Jorgensen. Monotypic.

Goniocerus Malaise, 1942. Ent. Tidskr. 63: 93 N. syn.

Type-species: *Stromboceros albilabris* Konow. Orig. desig.

This is a rather large genus found from southern Arizona to northern Argentina.

nigricans (Norton). S. Ariz. to Guatemala.

Strongylogaster nigricans Norton, 1868. Amer. Ent. Soc., Trans. 2: 223. ♀, ♂.

Selandria curialis Cresson, 1880. Amer. Ent. Soc., Trans. 8: 15. ♀.

Stromboceros (Eustromboceros) leucostomus Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 395.

♀.

Taxonomy: Smith, 1971. Amer. Ent. Soc., Trans. 97: 526 (lectotype for *nigricans*).

TRIBE SELANDRIINI

Genus BRACHYTHOPS Haliday

Coryna Lepeletier and Serville, 1825. Encycl. Meth., Ins., v. 10, p. 567. Preocc. by Bosc, 1802.

Type-species: *Tenthredo scapularis* Lepeletier and Serville. Desig. by Rohwer, 1911. *Brachythops* Haliday, 1839. In Curtis, Brit. Ent., v. 16, p. 764.

Type-species: *Brachythops seminigra* Haliday. Monotypic.

Paraselandria Ashmead, 1898. Canad. Ent. 30: 255.

Type-species: *Selandria flavens* Klug. Orig. desig. *Selandridea* Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 388.

Type-species: *Selandridea vanduzeei* Rohwer. Orig. desig.

Pseudoselandria MacGillivray, 1914. Canad. Ent. 46: 103.

Type-species: *Pseudoselandria oxalata* MacGillivray Orig. desig.

A small holarctic genus closely related to the Palaearctic *Selandria* Leach. Larvae of this genus feed on sedges.

flavens (Klug). Labrador to Alaska s. to N. Y., Wis., Colo.; Europe to Siberia. Host: *Carex*. *Tenthredo* (*Allantus*) *flavens* Klug, 1818. Mag. Gesell. Naturf. Freunde Berlin 8: 48. ♀, ♂. *Tenthredo* (*Coryna*) *scapularis* Lepeletier and Serville, 1825. Encycl. Meth. Ins., v. 10, p. 567. ♀.

Phyllotoma puella Fallen, 1829. Monog. Tenthred. Suec., p. 30. ♀, ♂.

Brachythops seminigra Haliday, 1839. In Curtis, Brit. Ent., v. 16, p. 764.

Selandria flavescens Thomson, 1870. Opusc. Ent., 2nd Fasc., p. 291.

Selandria decolorata Cresson, 1880. Amer. Ent. Soc., Trans. 8: 15. ♂.

Selandridea vanduzeei Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 388. ♀, ♂.

Selandria flavens var. *flavior* Enslein, 1913. Deut. Ent. Ztschr., Beih., p. 144.

Pseudoselandria oxalata MacGillivray, 1914. Canad. Ent. 46: 103. ♀.

wuestneii (Konow). Que., N. W. T., Man., Alta., Yukon, Alaska; Europe. Host: *Carex*.

Selandria wustneii Konow, 1885. Wien. Ent. Ztg. 4: 122. ♀, ♂.

TRIBE ADELESTINI

Genus ADELESTA Ross

Adelesta Ross, 1937. Ill. Biol. Monog. 15(2): 68.

Type-species: *Selandria nova* Norton. Orig. desig.

The single species in this genus is found in North America only.

nova (Norton). N. S., N. B., Que., Maine.

Selandria nova Norton, 1867. Amer. Ent. Soc., Trans. 1: 254. ♀.

TRIBE HEPTAMELINI

Genus HEPTAMELUS Haliday

Melicerta Stephens, 1835. Illus. Brit. Ent., v. 7, p. 94. Preocc. by Schrank, 1803.

Type-species: *Melicerta ochroleuca* Stephens. Monotypic.

Heptamelus Haliday, 1855. Nat. Hist. Rev., v. 2, p. 60.

Type-species: *Melicerta ochroleuca* Stephens. Monotypic.

Caenoneura Thomson, 1870. Opusc. Ent., 2nd Fasc., p. 270.

Type-species: *Caenoneura dahlbomi* Thomson. Monotypic.

Most species of this genus are found in Asia.

ochroleucus (Stephens). B. C. (Squamish, Diamond Head Trail); Europe, Japan. Ecology:

Larva bores downward in stems of ferns. Host: *Athyrium*, *Polypodium*, and *Blechnum*. These hosts were recorded in Europe.

Melicerta ochroleuca Stephens, 1835. Illus. Brit. Ent., v. 7, p. 95.

Caenoneura dahlbomi Thomson, 1870. Opusc. Ent., 2nd Fasc., p. 271. ♀.

SUBFAMILY DOLERINAE

The two genera in this subfamily are both widespread throughout the subarctic and temperate regions of the Northern Hemisphere; one species is known from Uganda. *Dolerus* contains about 125 and *Loderus* about 16 world species. Larvae feed on horsetails, grasses, sedges, and rushes. A few species may be of importance when feeding in cultivated crops. Adults fly early in the spring and are found in their host-plant communities, on nearby flowers such as those of *Crataegus* and *Prunus*, or on willow catkins. Some may feed on the sap of sugar maple. There is normally a single generation a year, and mature larvae overwinter in an earthen cell in the ground. Species of this subfamily can be collected in large numbers. The time of emergence of the adults can be accurately predicted, yet, very little biological work has been done. Larvae for so few species have been associated that it is impossible to identify them beyond genus.

Revision: Ross, 1931. Ill. Biol. Monog. 12(3): 1-116.

Taxonomy: Ross, 1935. Ent. Soc. Wash., Proc. 37: 88-93. —Benson, 1956. Roy. Ent. Soc. London, Proc., Ser. B: Taxonomy 25: 55-63. —Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 388-389 (holartic species).

Genus DOLERUS Panzer

Dolerus Jurine, 1801 (May). Intell. Blatt. Litt.-Ztg. Erlangen, v. 1, p. 163. Suppressed by Internatl. Comm. Zool. Nomencl. Op. 135, 1939.

Type-species: *Tenthredo gonager* Fabricius. Desig. by Latreille, 1810.

Dolerus Panzer, 1801 (September). Faunae Ins. German., heft 82, pl. 11.

Type-species: *Dolerus pedestris* Panzer. Monotypic.

Dosytheus Leach, 1817. Zool. Misc., v. 3, p. 127.

Type-species: *Tenthredo eglanteriae* Fabricius. Desig. by Brulle, 1846.

SPECIES GROUP UNICOLOR

asper Zaddach. Mass., Conn., Mich., Ind., S. Dak., Alaska; Europe, Siberia. Host: Cyperaceae and Gramineae.

Dolerus asper Zaddach, 1859. Programm Friedr. Col. Königsberg, p. 21. ♂.

Dolerus tectus MacGillivray, 1914. Canad. Ent. 66: 104. ♀, ♂.

Dolerus asper megapteroides Muche, 1964. Reichenbachia 4: 31-33. ♀ (male misdet.).

borealis MacGillivray. Idaho, Wash., Oreg.

Dolerus borealis MacGillivray, 1893. Canad. Ent. 25: 238. ♀.

Dolerus nominatus MacGillivray, 1923. Insecutor Inscitiae Menstruus 11: 34. ♀.

illini Ross. Mass., N. Y. w. to Alta., S. Dak., Colo. Ecology: Adults collected in *Equisetum*, *Eleocharis*, and *Carex* habitats.

Dolerus illini Ross, 1931. Ill. Biol. Monog. 12(3): 39. ♀, ♂.

Dolerus illini var. *rufilobus* Ross, 1931. Ill. Biol. Monog. 12(3): 41. ♂.

nativus MacGillivray. Colo., Oreg.

Dolerus nativus MacGillivray, 1923. Insecutor Inscitiae Menstruus 11: 32. ♂.

Dolerus nectareus MacGillivray, 1923. Insecutor Inscitiae Menstruus 11: 33. ♂.

neocollaris narratus MacGillivray. B. C., Idaho, Wash., Oreg.

Dolerus narratus MacGillivray, 1923. Canad. Ent. 55: 65. ♀, ♂.

Dolerus nocus MacGillivray, 1923. Insecutor Inscitiae Menstruus 11: 34. ♀.

neocollaris neocollaris MacGillivray. Que., N. Y. w. to Mont., Nebr., Colo.

Dolerus neocollaris MacGillivray, 1908. Canad. Ent. 40: 127. ♀, ♂.

Dolerus refugus MacGillivray, 1908. Canad. Ent. 40: 127. ♀.

nitens Zaddach. N. H. to Md., w. to Mich., Ohio, Ill., Wash., Oreg.; Europe. Ecology: Probably grasses and sedges are hosts; adults sometimes swept from cultivated grass crops. Host: *Festuca* sp.

Dolerus coracinus Stephens, 1835. Illus. Brit. Ent., v. 7, p. 87. Preocc. by Klug, 1814.

Dolerus nitens Zaddach, 1859. Programm Friedr. Col. Königsberg, p. 16. ♀, ♂.

Dolerus anthracinus Thomson, 1871. Hym. Scand., v. 1, p. 291. Preocc. by Klug, 1814.

Dolerus varispinus Konow, 1884. Deut. Ent. Ztschr. 28: 344. Preocc. by Hartig, 1837.

Dolerus coruscans Konow, 1890. Wien. Ent. Ztg. 9: 10. N. name for *anthracinus* Thomson.
Dolerus wanda Ross, 1935. Ent. Soc. Wash., Proc. 37: 91. ♀.

Biology: Kamm, 1975. Environ. Ent. 4: 312-314.

- unicolor** (Beauvois). Que. to Ga. w. to Man., S. Dak., Colo. Host: *Phleum pratense*.
Tenthredo unicolor Beauvois, 1805. Ins. Afr. Amer., p. 97. ♂.
Tenthredo thoracinus Beauvois, 1805. Ins. Afr. Amer., p. 97. ♀.
Dolerus arvensis Say, 1824. In Keating, Narr. Long's 2nd Exped., v. 2 (App.), p. 319. ♀.
Dolerus thoracinus Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 230.

Biology: Riley and Marlatt, 1891. U. S. Dept. Agr., Insect Life 4: 168-179. —Forbes, 1885. 14th Rpt. State Ent. Ill., p. 100.

SPECIES GROUP SERICEUS

kennedyi Ross. Ohio.

Dolerus kennedyi Ross, 1935. Ent. Soc. Wash., Proc. 37: 90. ♀.

sericeus centralis Ross. Ill.

Dolerus sericeus centralis Ross, 1931. Ill. Biol. Monog. 12(3): 46. ♀, ♂.

sericeus neosericeus MacGillivray. N. B. to N. Y. w. to Wis.

Dolerus neosericeus MacGillivray, 1908. Canad. Ent. 40: 125. ♀.

Dolerus necosericeus (!) MacGillivray, 1923. Ill. Univ. Bul. 20(50): 13.

sericeus parasericeus MacGillivray. N. Y., B. C.

Dolerus parasericeus MacGillivray, 1908. Canad. Ent. 40: 125. ♀.

Dolerus polysericeus MacGillivray, 1908. Canad. Ent. 40: 125. ♀.

sericeus sericeus Say. Que. to Del. w. to B. C., Minn., Mo.

Dolerus sericeus Say, 1824. In Keating, Narr. Long's 2nd Exped., v. 2 (App.), p. 320. ♀.

Dolerus colosericeus MacGillivray, 1908. Canad. Ent. 40: 125. ♀.

Dolerus monosericeus MacGillivray, 1908. Canad. Ent. 40: 126. ♀, ♂.

SPECIES GROUP COLLARIS

abdominalis (Norton). Mass. to Ga. w. to Ill., Kans.

Dosytheus abdominalis Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 153. ♀, ♂.

agcistus MacGillivray. Maine to Va. w. to Man., Mont., Wyo., Colo., Calif. Ecology: Adults collected in *Equisetum* - *Carex* habitats.

Dolerus agcistus MacGillivray, 1908. Canad. Ent. 40: 129. ♀.

Dolerus agcistus var. *maroa* Ross, 1931. Ill. Biol. Monog. 12(3): 61. ♀. N. syn.

bicolor (Beauvois). Que. to Va. w. to Man., Wis., Nebr., Kans.

Tenthredo bicolor Beauvois, 1805. Ins. Afr. Amer., p. 96. ♀.

Dolerus lesticus MacGillivray, 1914. Canad. Ent. 46: 105. ♀. N. syn.

Dolerus graenicheri MacGillivray, 1914. Canad. Ent. 46: 107. ♀. N. syn.

Dolerus bicolor var. *nigrita* Ross, 1931. Ill. Biol. Monog. 12(3): 59. ♀. N. syn.

clypealis Ross. Mich., N. W. T., Alta., Mont., Colo., Utah, Wash., Oreg., Calif.

Dolerus clypealis Ross, 1931. Ill. Biol. Monog. 12(3): 50. ♀.

Dolerus clypealis var. *nigrilabris* Ross, 1931. Ill. Biol. Monog. 12(3): 51. ♀.

collaris Say. Que. to Pa. w. to B. C., Mont., Colo. Host: *Eleocharis*(?).

Dolerus collaris Say, 1823. West. Quart. Rptr. 2: 720. ♀.

Dosytheus maculicollis Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 153. ♀.

Dolerus icterus MacGillivray, 1908. Canad. Ent. 40: 127. ♀.

Dolerus collaris var. *erebus* Ross, 1931. Ill. Biol. Monog. 12(3): 55. ♀.

distinctus Norton. Oreg., Calif.

Dolerus distinctus Norton, 1872. Amer. Ent. Soc., Trans. 4: 82. ♀.

eurybis Ross. Que., Maine w. to Man., Minn., Colo.

Dolerus eurybis Ross, 1931. Ill. Biol. Monog. 12(3): 65. ♀, ♂.

idahoensis Ross. Idaho (Moscow).

Dolerus idahoensis Ross, 1931. Ill. Biol. Monog. 12(3): 63. ♀.

interjectus Ross. Idaho, Wash., Calif.

Dolerus interjectus Ross, 1931. Ill. Biol. Monog. 12(3): 63. ♀, ♂.

moramus Ross. N. Y., Ill., Minn. Colo.

Dolerus moramus Ross, 1931. Ill. Biol. Monog. 12(3): 62. ♀, ♂.

neoagcistus MacGillivray. Maine, Ont. to Va. w. to Nebr., Kans., Miss.

Dolerus neoagcistus MacGillivray, 1923. Brooklyn Ent. Soc., Bul. 18: 55. ♀.

Dolerus neostagnus MacGillivray, 1923. Brooklyn Ent. Soc., Bul. 18: 55. ♀.

nortoni Ross. Maine, Ont. to Md. w. to Mich., Ill.

Dolerus nortoni Ross, 1931. Ill. Biol. Monog. 12(3): 51. ♀, ♂.

Dolerus nortoni var. *nigritella* Ross, 1931. Ill. Biol. Monog. 12(3): 53. ♀.

osagensis Ross. N. J., Okla.

Dolerus osagensis Ross, 1935. Ent. Soc. Wash., Proc. 37: 89. ♀, ♂.

piercei Rohwer. N. J., Nebr., Kans.

Dolerus piercei Rohwer, 1909. Canad. Ent. 41: 10. ♀.

salmani Ross. Calif.

Dolerus salmani Ross, 1935. Ent. Soc. Wash., Proc. 37: 88. ♀, ♂.

versus Norton. N. Y. to Va. w. to Ohio, Mo., Tex.

Dolerus versa Norton, 1867. Amer. Ent. Soc., Trans. 1: 239. ♀, ♂.

SPECIES GROUP SIMILIS

aprilis (Norton). Que. to Va. w. to Sask., Colo. Host: *Equisetum*.

Dosytheus aprilis Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 152. ♀.

Dolerus dysporus MacGillivray, 1908. Canad. Ent. 40: 128. ♀.

Dolerus nocivus MacGillivray, 1923. Ill. Univ. Bul. 20(50): 12. ♀.

apriloides MacGillivray. Que., Conn. w. to Man., Minn., Ill.

Dolerus apriloides MacGillivray, 1908. Canad. Ent. 40: 126. ♀.

coloradensis Cresson. Mont., Wyo., Colo., N. Mex., Ariz.

Dolerus coloradensis Cresson. 1880. Amer. Ent. Soc., Trans. 8: 11. ♀, ♂.

elderi Kincaid. Newfoundland to Alaska s. to N. J., Ill., N. Mex., Utah, Calif.; Europe to

Siberia. Ecology: Widespread. Host: *Equisetum*.

Dolerus pusillus Jakovlev, 1891. Soc. Ent. Rossica, Horae 26: 32. ♀. Preocc. by Lepeletier, 1823.

Dolerus elderi Kincaid, 1900. Wash. Acad. Sci., Proc. 2: 259. ♀, ♂.

Dolerus cohaesus MacGillivray, 1908. Canad. Ent. 40: 128. ♀.

Dolerus nutricius MacGillivray, 1923. Canad. Ent. 55: 159. ♂.

Dolerus acriculus MacGillivray, 1923. Ill. Univ. Bul. 20(50): 20. ♀.

Dolerus nyctelius MacGillivray, 1923. N. Y. Ent. Soc., Jour. 30: 163. ♂.

Dolerus nemorosus MacGillivray, 1923. N. Y. Ent. Soc., Jour. 30: 164. ♀.

Dolerus pullulus Zhelochovtsev, 1928. Zool. Anz. 79(3-4): 107. ♀, ♂.

Dolerus elderi var. *auraneus* Ross, 1931. Ill. Biol. Monog. 12(3): 69. ♀, ♂.

Dolerus elderi var. *rubicanus* Ross, 1931. Ill. Biol. Monog. 12(3): 70. ♀, ♂.

Dolerus elderi var. *melanus* Ross, 1931. Ill. Biol. Monog. 12(3): 70. ♀, ♂.

Taxonomy: Benson, 1956. Roy. Ent. Soc. London, Proc., Ser. B: Taxonomy 25: 55.

nasutus MacGillivray. Alta., Mont., Colo., N. Mex., B. C., Idaho, Wash., Oreg., Calif.

Dolerus nasutus MacGillivray, 1923. Canad. Ent. 55: 65. ♀.

Dolerus nugatorius MacGillivray, 1923. Canad. Ent. 55: 66. ♀, ♂.

Dolerus novellus MacGillivray, 1923. Canad. Ent. 55: 67. ♀.

similis nescius MacGillivray. B. C., Wash., Nev.

Dolerus nescius MacGillivray, 1923. Ill. Univ. Bul. 20(50): 12. ♀.

similis similis (Norton). Newfoundland to Alaska s. to Va., Ky., Tex., N. Mex., Calif. Ecology:

Widespread. Host: *Equisetum*.

Dosytheus similis Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 152. ♀.

Dolerus tibialis Cresson, 1880. Amer. Ent. Soc., Trans. 8: 52. ♂.

Dolerus conjugatus MacGillivray, 1908. Canad. Ent. 40: 128. ♀.

Dolerus plesius MacGillivray, 1908. Canad. Ent. 40: 129. ♀.

Dolerus inspectus MacGillivray, 1908. Canad. Ent. 40: 128. ♂.

Dolerus stagnus MacGillivray, 1908. Canad. Ent. 40: 129. ♀.

Dolerus acritus MacGillivray, 1908. Canad. Ent. 40: 130. ♀.

- Dolerus simulans* Rohwer, 1909. Canad. Ent. 41: 10. ♀.
Dolerus inspiratus MacGillivray, 1914. Canad. Ent. 46: 105. ♀.
Dolerus nefastus MacGillivray, 1923. Canad. Ent. 55: 66. ♀.
Dolerus nicaeus MacGillivray, 1923. Canad. Ent. 55: 68. ♀.
Dolerus novicius MacGillivray, 1923. Canad. Ent. 55: 67. ♀.
Dolerus nummarius MacGillivray, 1923. Canad. Ent. 55: 159. ♀.
Dolerus nummatus MacGillivray, 1923. Canad. Ent. 55: 159. ♀.
Dolerus nervosus MacGillivray, 1923. Insecutor Inscitiae Menstruus 11: 31. ♀.
Dolerus nimbosus MacGillivray, 1923. Insecutor Inscitiae Menstruus 11: 33. ♀, ♂.
Dolerus necessarius MacGillivray, 1923. Insecutor Inscitiae Menstruus 11: 35. ♀.
Dolerus similis var. *conjectus* Ross, 1931. Ill. Biol. Monog. 12(3): 80. ♀.
Dolerus similis var. *nordanus* Ross, 1931. Ill. Biol. Monog. 12(3): 80. ♀, ♂.
Dolerus similis var. *fumatus* Ross, 1931. Ill. Biol. Monog. 12(3): 81. ♀, ♂.

tejonensis (Norton). N. Mex., Utah, Nev., Oreg., Calif.

- Dosytheus Tejonensis* Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 154. ♀.
Dolerus coccinifera Norton, 1872. Amer. Ent. Soc., Trans. 4: 82. ♀.
Dolerus coccinifer Dalla Torre, 1894. Cat. Hym., v. 1, p. 4. Emend.

yukonensis yukonensis Norton. Alta., Alaska; Eurasia. Host: *Equisetum*. Other subspecies are Palaearctic.

- Dolerus similis* var. *yukonensis* Norton, 1872. Amer. Ent. Soc., Trans. 4: 82. ♂.
Dolerus lateralis Konow, 1895. Wien. Ent. Ztg. 14: 75. ♀.
Dolerus articola Kiaer, 1898. Tromsø Mus. Aarsh. 19: 58.
Dolerus nuntius MacGillivray, 1923. Canad. Ent. 55: 158. ♀.
Dolerus nundinus MacGillivray, 1923. Canad. Ent. 55: 159. ♂.

Taxonomy: Benson, 1956. Roy. Ent. Soc. London, Proc., Ser. B: Taxonomy 25: 58-59.

SPECIES GROUP GESSNERI

gessneri konowi MacGillivray. Alaska, B. C., Wash., Oreg., Calif.; Siberia. Host: *Equisetum*.
D. gessneri gessneri Andre is European.

- Dolerus konowi* MacGillivray, 1914. Canad. Ent. 46: 106. ♀, ♂.
Dolerus numerosus MacGillivray, 1923. Canad. Ent. 55: 67. ♀, ♂.
Dolerus nidulus MacGillivray, 1923. Insecutor Inscitiae Menstruus 11: 31. ♀.
Dolerus kamtchaticus Malaise, 1932. Arkiv for Zool. 23A: 18. ♀, ♂.

Taxonomy: Benson, 1956. Roy. Ent. Soc. London, Proc., Ser. B: Taxonomy 25: 59.

pratensis (Linnaeus). Ill., Man., Alta.; Europe to Siberia. Host: *Equisetum*.

- Tenthredo pratensis* Linnaeus, 1758. Syst. Nat., Ed. 10, p. 556. ♀.
Tenthredo (Dolerus) dubius Klug, 1814. Mag. Gesell. Naturf. Freunde Berlin 8: 299. ♀, ♂.
Tenthredo (Dolerus) timida Klug, 1814. Mag. Gesell. Naturf. Freunde Berlin 8: 300. ♀, ♂.
Tenthredo (Dolerus) deserta Klug, 1814. Mag. Gesell. Naturf. Freunde Berlin 8: 300. ♂.
Dolerus frisoni Ross, 1931. Ill. Biol. Monog. 12(3): 91. ♂.

Taxonomy: Malaise and Benson, 1934. Arkiv for Zool. 26A: 5 (*D. pratensis* of authors, not *L.=D. germanicus* (Fabricius)). — Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 389.

subfasciatus neopapilis MacGillivray. Newfoundland to N. W. T., Alaska s. to N. Y., Ill., Nebr., Colo. Ecology: Widespread. Host: *Equisetum*. *D. subfasciatus subfasciatus* Smith is found in Japan.

- Dolerus neopapilis* MacGillivray, 1908. Canad. Ent. 40: 126. ♀.
Dolerus nivatus MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 164. ♀.

Taxonomy: Benson, 1956. Roy. Ent. Soc. London, Proc., Ser. B: Taxonomy 25: 59.

Genus **LODERUS** Konow

Loderus Konow, 1890. Deut. Ent. Ztschr. 34: 240.

Type-species: *Tenthredo pratorum* Fallen. Orig. desig.

Taxonomy: Benson, 1956. Roy. Ent. Soc. London, Proc., Ser. B: Taxonomy 25: 62 (status of N. Amer. forms).

- eversmanni acidus* MacGillivray. Que., Maine to Pa. w. to Alaska, Ill.; East Asia. Host: *Equisetum*. *L. eversmanni eversmanni* (Kirby) is European.
- Loderus acidus* MacGillivray, 1923. Ill. Univ. Bul. 20(50): 20. ♀, ♂.
- genucinctus niger* Rohwer. Wash., Oreg., Calif. Host: *Equisetum*. *L. genucinctus genucinctus* (Zaddach) is Palaearctic.
- Loderus niger* Rohwer, 1910. Canad. Ent. 42: 49. ♀, ♂. Preocc. in *Dolerus* but not in *Loderus*.
- Dolerus napaesus* MacGillivray, 1923. Canad. Ent. 55: 65. ♀.
- Dolerus nepotulus* MacGillivray, 1923. Canad. Ent. 55: 68. ♂.
- Dolerus nauticus* MacGillivray, 1923. Insector Inscitiae Menstruus 11: 35. ♀.
- pratorum albifrons* (Norton). Newfoundland to Alaska s. to N. Y., Nebr., Calif.; East Asia. Host: *Equisetum*. *L. pratorum pratorum* (Fallen) is European.
- Dosytheus apricus* var. *albifrons* Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 152. ♀.
- Dolerus minusculus* MacGillivray, 1908. Canad. Ent. 40: 126. ♀.
- Loderus accuratus* MacGillivray, 1923. Ill. Univ. Bul. 20(50): 19. ♀.
- vestigialis apricus* (Norton). N. B. to Va. w. to Alaska, Man., Wash., Nebr., Colo. Host: *Equisetum*. *L. vestigialis vestigialis* (Klug) is European.
- Tenthredo (Dosytheus) aprica* Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., p. 583. Nom. nud.
- Dosytheus apricus* Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 152. ♀.
- Dolerus luctatus* MacGillivray, 1908. Canad. Ent. 40: 127. ♀.
- Dolerus femur-rubrum* Rohwer, 1909. Canad. Ent. 41: 9. ♀.
- Loderus acerbus* MacGillivray, 1923. Ill. Univ. Bul. 20(50): 19. ♀.
- Loderus alticinctus* MacGillivray, 1923. Ill. Univ. Bul. 20(50): 20. ♀.
- Loderus ancisus* MacGillivray, 1923. Ill. Univ. Bul. 20(50): 21. ♀.

SUBFAMILY SUSANINAE

Revision: Smith, 1969. Ent. Soc. Wash., Proc. 71: 13-23.

Genus SUSANA Rohwer and Middleton

Susana Rohwer and Middleton, 1932. Ent. Soc. Wash., Proc. 34: 93.

Type-species: *Susana cupressi* Rohwer and Middleton. Orig. desig.

Members of this exclusively North American genus feed on plants of the family Cupressaceae.

annulata Smith. Calif. (San Mateo Co., Marin Co.). Ecology: Adults collected from *Cupressus macrocarpa*.

Susana annulata Smith, 1969. Ent. Soc. Wash., Proc. 71: 22. ♀, ♂.

cupressi Rohwer and Middleton. S. Calif. Host: *Cupressus*.

Susana cupressi Rohwer and Middleton, 1932. Ent. Soc. Wash., Proc. 34: 94. ♀, ♂.

fuscala Wong and Milliron. B. C. Host: *Juniperus scopulorum*.

Susana fuscala Wong and Milliron, 1972. Canad. Ent. 104: 1025-1026. ♀, larva.

juniperi (Rohwer). N. Mex. (Las Vegas Hot Springs). Host: *Juniperus*.

Platycampus juniperi Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 386. ♀.

oregonensis Smith. Idaho, Nev., Oreg. Host: *Juniperus*.

Susana oregonensis Smith, 1969. Ent. Soc. Wash., Proc. 71: 21. ♀.

punctata Smith. Calif. (Inyo Co.). Ecology: Adult collected from *Juniperus*.

Susana punctata Smith, 1969. Ent. Soc. Wash., Proc. 71: 19. ♀.

rufa Smith. N. Mex., Ariz. (Chiricahua Mts.).

Susana rufa Smith, 1969. Ent. Soc. Wash., Proc. 71: 21. ♀.

SUBFAMILY NEMATINAE

The Nematinae are a large and diverse group, especially in habits and host plants. It is the dominant sawfly group in the arctic and subarctic regions of the world where they comprise nearly the entire sawfly fauna. Their abundance decreases rapidly southward and only a few species extend into Mexico. Only two species, both *Pristiphora*, are known from South America.

Larval habits range from free leaf feeders to gall formers, others are leaf edge rollers, leaf miners, and some live and feed inside the fruits of rosaceous plants. The taxonomy of many groups is imperfectly known and few have been recently studied. Because of their abundance in the arctic region, many represent holarctic species, and a worker is met with the major obstacle of having to become familiar with the innumerable forms described from Eurasia. Variation is another factor since the extreme arctic climate may influence major morphological and color differences within species. For example, females of *Anaaronematus abnormis* (Holmgren) are normally brachypterous, but females with normal wings also exist. Some of the gall forming groups apparently contain species complexes where there are practically no adequate morphological characters for species separation and where identity may have to be based on specific host records and accompanying biological information. Extensive field work and knowledge of the world fauna will be essential to the study of most groups, and such facilities are not available to most taxonomists.

Revision: Marlatt, 1896. U. S. Dept. Agr. Div. Ent. Tech. Ser. 3, 135 pp.

Biology: Marlatt, 1895. Ent. Soc. Wash., Proc. 3: 263-267 (notes on some gall forming species).

TRIBE CLADIINI

Revision: Rohwer and Middleton, 1922. U. S. Natl. Mus., Proc. 60: 1-46 (also biology).

—Smith, 1974. Amer. Ent. Soc., Trans. 100: 1-28.

Genus CLADIUS Illiger

Cladius Illiger, 1807. Mag. Insektenk. 6: 190.

Type-species: *Tenthredo difformis* Panzer. Desig. by Latreille, 1810.

Only one of several species of this holarctic genus is found in North America.

difformis (Panzer). N. S., Que. to B. C. s. to Va., Ky., Mo., Calif.; Europe to Siberia. Ecology:

Widespread, common on cultivated roses. Host: *Rosa*. Bristly rose slug.

Tenthredo difformis Panzer, 1799. Faunae Ins. German. 6: 62.

Nematus crassicornis Stephens, 1835. Illus. Brit. Ent., v. 7, p. 28.

Tenthredo (Cladius) isomera Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., p. 583. Nom. nud.

Cladius isomerus Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 223. ♀.

Cladius gracilicornis Konow, 1884. Deut. Ent. Ztschr. 28: 314. ♀, ♂.

Cladius major Cobelli, 1892. Zool.-Bot. Gesell. Wien, Verh. 42: 70. ♀.

Biology: Murtfeldt, 1890. U. S. Dept. Agr., Ent. Bul. 22: 78. —Chittenden, 1908. U. S. Dept. Agr., Bur. Ent. Circ. 105, 6 pp. —Middleton, 1922. In Rohwer and Middleton, U. S. Natl. Mus., Proc. 60: 13. —Middleton, 1922. U. S. Dept. Agr., Farmers' Bul. 1252, 4 pp.

Genus PRIOPHORUS Dahlbom

Nematus subg. *Priophorus* Dahlbom, 1835. Conspectus Tenthred., Siricid., Oryssin., Scand., p. 4.

Type-species: *Priophorus pilicornis* Dahlbom. Desig. by Rohwer, 1911.

Stevensia Brulle, 1846. In Lepeletier, Hist. Nat. Ins., Hym., v. 4, p. 667. No species included.

Type-species: *Priophorus varines*(!) Lepeletier. Desig. by Rohwer, 1922. Rohwer must have meant *Pristiphora varipes* Lepeletier.

betulae Rohwer. Newfoundland to N. Y. w. to Alta., S. Dak. Host: *Betula*.

Priophorus betulae Rohwer, 1922. In Rohwer and Middleton, U. S. Natl. Mus., Proc. 60: 27. ♀, ♂.

infuscatus (MacGillivray). Ont., N. H., N. Y. w. to Mich., Ill. Host: *Salix*, *Populus*(?).

Craterocercus infuscatus MacGillivray, 1916. Conn. State Geol. and Nat. Hist. Survey Bul. 22: 106. ♀.

Trichiocampus pacatus MacGillivray, 1921. Ent. News 32: 48. ♀.

Trichiocampus paetulus MacGillivray, 1921. Ent. News 32: 48. ♀.

Trichiocampus palliolatus MacGillivray, 1921. Ent. News 32: 49. ♀.

- Priophorus salicivorus* Rohwer, 1922. In Rohwer and Middleton, U. S. Natl. Mus., Proc. 60: 29. ♀, ♂.
- morio** (Lepeletier). N. B. to B. C. s. to Pa., Mich., Mont., Calif.; Europe to Siberia. Ecology: Widespread. Host: *Rubus*. Introduced into New Zealand and Tasmania; attempted introduction into Hawaii from Oreg. and Calif. to aid in biological control of *Rubus*. *Cladius morio* Lepeletier, 1823. Monog. Tenthred., p. 58. ♀, ♂. *Nematus brullei* Dahlbom, 1835. Conspectus Tenthred., Siricid., Oryssin. Scand., p. 7. *Cladius tener* Zaddach, 1859. Programm Friedr. Col. Konigsberg, p. 11. ♀. *Cladius tristis* Zaddach, 1859. Programm Friedr. Col. Konigsberg, p. 11. ♀, ♂. *Priophorus rubivorus* Rohwer, 1922. In Rohwer and Middleton, U. S. Natl. Mus., Proc. 60: 28. ♀.
- Priophorus montanus* Rohwer, 1922. In Rohwer and Middleton, U. S. Natl. Mus., Proc. 60: 31. ♀.
- Priophorus rubi* Rohwer, 1922. In Rohwer and Middleton, U. S. Natl. Mus., Proc. 60: 32. ♀.
- Biology: Essig and Hoskins, 1944. Calif. Dept. Agr., Ext. Serv. Cir. 87: 37. —Smith and Kido, 1949. Hilgardia 19: 43-54. —Nakao, 1967. Hawaii. Ent. Soc., Proc. 19: 339.
- pallipes** (Lepeletier). Newfoundland to Alaska s. to Va., Tenn., Ill., Colo., Oreg.; Eurasia. Ecology: Widespread. Host: *Prunus*, *Crataegus*, *Ablus*. *Tenthredo albipes* Fallen, 1808. Svenska Ventensk. Akad., Handl. 29: 110. Preocc. by Geoffroy, 1785. *Cladius pallipes* Lepeletier, 1823. Monog. Tenthred., p. 59. ♀, ♂. *Pristiphora varipes* Lepeletier, 1823. Monog. Tenthred., p. 61. ♂. *Cladius immunis* Stephens, 1835. Illus. Brit. Ent., v. 7, p. 23. *Nematus melanostigma* Stephens, 1835. Illus. Brit. Ent., v. 7, p. 35. *Cladius aequalis* Norton, 1872. Amer. Ent. Soc., Trans. 4: 78. ♂. *Priophorus discors* Konow, 1894. Wien. Ent. Ztg. 13: 88. *Cladius solitaris* Dyar, 1895. Canad. Ent. 27: 192. ♀, larva. *Priophorus modestius* MacGillivray, 1921. Ent. News 32: 49. ♀. *Priophorus munditus* MacGillivray, 1921. Ent. News 32: 50. ♀. *Priophorus crataegi* Rohwer, 1922. In Rohwer and Middleton, U. S. Natl. Mus., Proc. 60: 26. ♀.
- Priophorus pruni* Rohwer, 1922. In Rohwer and Middleton, U. S. Natl. Mus., Proc. 60: 32. ♀, ♂.
- Priophorus virginianus* Rohwer, 1922. In Rohwer and Middleton, U. S. Natl. Mus., Proc. 60: 34. ♀.
- Priophorus plesius* Rohwer, 1922. In Rohwer and Middleton, U. S. Natl. Mus., Proc. 60: 35. ♀.
- Biology: Middleton, 1922. In Rohwer and Middleton, U. S. Natl. Mus., Proc. 60: 1-46 (notes following descriptions of species listed above).

Genus TRICHIOCAMPUS Hartig

- Cladius* subg. *Trichiocampus* Hartig, 1837. Fam. Blattwespen und Holzwespen, nebst Einleitung Naturgesch. Hym., p. 176.
- Type-species: *Nematus grandis* Lepeletier. Desig. by Rohwer, 1911.
- gregarius** (Dyar). Maine to Pa. w. to Ont., Mich. Host: *Populus*. *Cladius (Trichiocampus) gregarius* Dyar, 1895. Canad. Ent. 27: 191. ♀, ♂, larva.
- Biology: Middleton, 1922. In Rohwer and Middleton, U. S. Natl. Mus., Proc. 60: 11.
- simplicicornis** (Norton). N. S. to N. Y. w. to Sask.; N. Mex. and Calif. Host: *Salix*, sometimes *Populus*. *Cladius simplicicornis* Norton, 1869. Amer. Ent. Soc., Trans. 2: 367. ♂. *Priophorus irregularis* Dyar, 1900. N. Y. Ent. Soc., Jour. 8: 28. ♂. Larva. *Trichiocampus patchiae* MacGillivray, 1921. Ent. News 32: 48. ♀. *Priophorus moratus* MacGillivray, 1921. Ent. News 32: 50. ♀.
- Biology: Middleton, 1922. In Rohwer and Middleton, U. S. Natl. Mus., Proc. 60: 9.

viminalis (Fallen). Newfoundland to N. J. w. to Mich.; B. C.; Greenland; Europe and north Asia. Independently introduced into both east and west N. Amer.; first found in N. Y. in 1880's. Host: *Populus*, sometimes *Salix*.

Tenthredo viminalis Fallen, 1808. Svenska Vetensk. Akad., Handl. 29: 177.

Nematus grandis Lepeletier, 1823. Monog. Tenthred., p. 61. ♀.

Cladius eucera Bouche, 1834. Naturgesch. des Ins., p. 140. ♀, ♂.

Cladius luteicornis Stephens, 1835. Illus. Brit. Ent., v. 7, p. 24.

Cladius luteiventris Dahlbom, 1836. Prodrum. Hym. Scand., p. 102.

Aulacomerus lutescens Lintner, 1888. Ins. N. Y. Rpt. 4: 44. ♀, ♂.

Platycampus victoria MacGillivray, 1920. Canad. Ent. 52: 61. ♀.

Biology: Middleton, 1922. In Rohwer and Middleton, U. S. Natl. Mus., Proc. 60: 7. — Viereck, 1925. Canad. Ent. 57: 43. — Beique, 1961. Canad. Ent. 93: 1085-1097. — Smirnof and Beique, 1959. Canad. Ent. 91: 379-381 (polyhedral disease).

TRIBE NEMATINI

Genus HOPLOCAMPA Hartig

Hoplocampa Hartig, 1837. Fam. Blattwespen und Holzwespen, nebst Einleitung Naturgesch. Hym., p. 276.

Type-species: *Tenthredo (Allantus) brevis* Klug. Desig. by Rohwer, 1911.

Macgillivraya Ashmead, 1898. Canad. Ent. 30: 257. Preocc. by Forbes, 1852.

Type-species: *Macgillivraya oregonensis* Ashmead. Orig. desig.

Macgillivrayella Ashmead, 1899. In Smith, Ins. of N. J., p. 606. N. name for *Macgillivraya*.

Larvae of this holarctic genus live and feed inside the fruits of Rosaceae. Species that attack cultivated crops such as cherries, pears, and apples may be serious pests. Adults emerge in the spring when their host plant is in bloom and the females oviposit in the ovaries. Sometimes adults can be collected in large numbers from their host blossoms. The larvae feed in the developing fruit of the host, the fruit usually falling off when the larvae mature. The larvae enter the ground where they overwinter. All species are single brooded.

Revision: Rohwer, 1911. U. S. Dept. Agr. Bur. Ent. Tech. Ser. 20(4): 139-148. — Ross, 1943. Amer. Ent. Soc., Trans. 69: 61-92 (as *Holocampa* (!)).

Taxonomy: Benson, 1968. Brit. Mus. (Nat. Hist.) Ent., Bul. 22: 199 (key to three species groups).

Biology: Bird, 1927. Ent. Soc. Amer., Ann. 20: 481-487.

alpestris Rohwer. Alta., Mont., Colo., B. C., Wash. Ecology: Adults collected from *Amelanchier* flowers.

Hoplocampa (Hoplocampa) alpestris Rohwer, 1911. U. S. Dept. Agr. Bur. Ent. Tech. Ser. 20(4): 142. ♀, ♂.

bioculata Rohwer. Colo., Utah, Idaho, B. C., Wash., Oreg., Calif. Ecology: Adults collected from *Amelanchier* flowers.

Hoplocampa bioculata Rohwer, 1908. Canad. Ent. 40: 179. ♀.

Hoplocampa (Hoplocampa) koebelei Rohwer, 1911. U. S. Dept. Agr. Bur. Ent. Tech. Ser. 20(4): 142. ♀.

Hoplocampa padusa MacGillivray, 1923. Ill. Univ. Bul. 20(50): 17. ♂.

brevis (Klug). R. I., Conn., Ont., N. Y., Pa., Md.; Europe. Introduced, first found in Ontario in 1964. Host: *Pyrus*. An economic pest of pear.

Tenthredo (Allantus) brevis Klug, 1814. Mag. Gesell. Naturf. Freunde Berlin 8: 53. ♀.

Taxonomy: Dustan, 1966. Canad. Ent. 98: 267 (occurrence in Canada). — Smith, 1966. U. S. Dept. Agr., Coop. Econ. Ins. Rpt. 16(12): 228-230 (separation of *brevis* and *testudinea* adults and larvae).

Biology: Thomas, 1936. Ann. Appl. Biol. 23: 633-639.

- cookei** (Clarke). B. C., Idaho, Wash., Oreg., Calif. Host: *Prunus*. A pest of cultivated cherries. Cherry fruit sawfly.
Dolerus cookei Clarke, 1906. Canad. Ent. 38: 351. ♀, ♂.
Hoplocampa (Hoplocampa) californica Rohwer, 1911. U. S. Dept. Agr., Bur. Ent. Tech. Ser. 20(4): 123. ♀, ♂.
- Biology: Foster, 1913. U. S. Dept. Agr., Bur. Ent. Bul. 116, pp. 73-79. —Essig, 1914. Calif. State Comm. Hort., Monthly Bul., p. 31. —Duruz, 1922. Calif. Dept. Agr., Monthly Bul. 9(4): 393-399. —Essig and Hoskins, 1944. Calif. Dept. Agr., Ext. Serv. Cir. 87: 47.
- halcyon** (Norton). Maine to N. C. w. to Alta., Ill. Host: *Amelanchier*.
Tenthredo (Selandria) halcyon Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., p. 583. Nom. nud.
Selandria halcyon Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 222. ♀, ♂.
Selandria flavicornis Provancher, 1878. Nat. Canad. 10: 100. ♂.
Hoplocampa (Hoplocampa) xantha Rohwer, 1911. U. S. Dept. Agr., Bur. Ent. Tech. Ser. 20(4): 144. ♀.
- Morphology: Bird, 1926. Ent. Soc. Amer., Ann. 19: 268-279 (external anatomy of adult).
 —Bird, 1927. Ent. Soc. Amer., Ann. 20: 481-486 (external anatomy of larva).
- idaho** Ross. Idaho, Wash., Oreg.
Hoplocampa idaho Ross, 1943. Amer. Ent. Soc., Trans. 69: 81. ♀, ♂.
- lacteipennis** Rohwer. Maine to N. Y. w. to Man., Alta., Mont., Colo. Host: *Prunus virginiana* and probably other species of *Prunus*.
Hoplocampa (Macgillivrayella) lacteipennis Rohwer, 1910. Canad. Ent. 42: 244. ♀.
Hoplocampa (Macgillivrayella) xanthura Rohwer, 1910. Canad. Ent. 42: 244. ♂.
Hoplocampa (Macgillivrayella) pallida Rohwer, 1911. U. S. Dept. Agr., Bur. Ent. Tech. Ser. 20(4): 141. ♀.
- Biology: Bird, 1928. Sci. Agr. 8: 479-501.
- makila** Ross. Oreg.
Hoplocampa makila Ross, 1943. Amer. Ent. Soc., Trans. 69: 68. ♀.
- marlatti** Rohwer. Maine to Ga. w. to Alta., Iowa, Colo. Ecology: Adults collected from flowers of wild cherry, *Prunus* sp.
Hoplocampa (Hoplocampa) marlatti Rohwer, 1911. U. S. Dept. Agr., Bur. Ent. Tech. Ser. 20(4): 143. ♀, ♂.
- montanicola** Rohwer. Maine, Ont. to B. C. s. to N. Y., Mich., S. Dak., Colo., Utah, Calif.
 Ecology: Widespread. Host: *Prunus virginiana* and probably other species of *Prunus*.
Hoplocampa (Hoplocampa) montanicola Rohwer, 1911. U. S. Dept. Agr., Bur. Ent. Tech. Ser. 20(4): 145. ♀, ♂.
Hoplocampa (Hoplocampa) orbitalis Rohwer, 1911. U. S. Dept. Agr., Bur. Ent. Tech. Ser. 20(4): 141. ♀.
Hoplocampa (Hoplocampa) occidentalis Rohwer, 1911. U. S. Dept. Agr., Bur. Ent. Tech. Ser. 20(4): 144. ♀, ♂.
- Biology: Bird, 1927. Ent. Soc. Amer., Ann. 20: 481-486 (*xantha*, not Rohwer).
- nalema** Ross. Wash. (Mt. Rainier).
Hoplocampa nalema Ross, 1943. Amer. Ent. Soc., Trans. 69: 82. ♀, ♂.
- neneti** Ross. Maine, N. H., Ont. Ecology: Adults collected from *Amelanchier*.
Hoplocampa neneti Ross, 1943. Amer. Ent. Soc., Trans. 69: 77. ♂.
- oregonensis** (Ashmead). Mont., Idaho, Oreg.
Macgillivraya oregonensis Ashmead, 1898. Canad. Ent. 30: 257. ♀, ♂.
- oskina** Ross. Maine, N. Y. w. to Mich., Iowa, Kans. Ecology: Adults collected from *Crataegus* flowers.
Hoplocampa oskina Ross, 1943. Amer. Ent. Soc., Trans. 69: 71. ♀, ♂.
- pallipes** MacGillivray. N. H., N. Y. to Mich.; Alta. w. to B. C., Oreg., Calif. Ecology: Adults collected from *Amelanchier* flowers.
Hoplocampa pallipes MacGillivray, 1893. Canad. Ent. 25: 239. ♀.
Hoplocampa (Hoplocampa) nevadensis Rohwer, 1911. U. S. Dept. Agr., Bur. Ent. Tech. Ser. 20(4): 143. ♀.

- ritcheri* Ross. N. C., Ill., Wash. Ecology: Adults collected from *Crataegus* flowers.
Hoplocampa ritcheri Ross, 1943. Amer. Ent. Soc., Trans. 69: 72. ♀, ♂.
- sialica* Ross. Maine to Md. w. to Mich. Ecology: Adults collected from *Amelanchier* flowers.
Hoplocampa sialica Ross, 1943. Amer. Ent. Soc., Trans. 69: 67. ♀, ♂.
- spala* Ross. B. C., Oreg.
Hoplocampa spala Ross, 1943. Amer. Ent. Soc., Trans. 69: 83. ♂.
- stricklandi* Ross. Maine, N. Y., Mich., Alta.
Hoplocampa stricklandi Ross, 1943. Amer. Ent. Soc., Trans. 69: 73. ♀, ♂.
- testudinea* (Klug). N. H., Vt., Mass., R. I., Conn., N. Y., N. J.; B. C.; Europe. Accidentally introduced into both east and west N. Amer., first found in N. Y. in 1939 and in B. C. in 1940. Host: *Malus malus*. A pest of apples.
Tenthredo (Allantus) testudinea Klug, 1814. Mag. Gesell. Naturf. Freunde Berlin 8: 60. ♀.
- Biology: Miles, 1932. Ann. Appl. Biol. 14: 420-431. —Downes and Andison, 1942. Ent. Soc. Brit. Columbia. Proc. 39: 13-16. —Pyenson, 1943. Jour. Econ. Ent. 36: 218-221.
- texas* Ross. Tex. Ecology: Adults collected from *Crataegus* flowers.
Hoplocampa texas Ross, 1943. Amer. Ent. Soc., Trans. 69: 68. ♀, ♂.

Genus CAULOCAMPUS Rohwer

- Caulocampus* Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 239.
 Type-species: *Priophorus acericaulis* MacGillivray. Orig. desig.
- Revision: Smith, 1968. Ent. Soc. Wash., Proc. 70: 126-129.
- acericaulis* (MacGillivray). Conn., Ont., N. Y., Md., Ala., Mich., Ill. Ecology: Larva mines in leaf petioles. Host: *Acer*.
Priophorus acericaulis MacGillivray, 1906. Canad. Ent. 38: 306. ♀.
- Biology: Britton, 1906. Ent. News 17: 313-320.
- matthewsi* Smith. N. Y.
Caulocampus matthewsi Smith, 1968. Ent. Soc. Wash., Proc. 70: 128. ♀.

Genus HEMICHROA Stephens

Genus HEMICHROA Subgenus HEMICHROA Stephens

- Hemichroa* Stephens, 1835. Illus. Brit. Ent., v. 7, p. 55.
 Type-species: *Tenthredo alni* Linnaeus. Desig. by Westwood, 1840.
- Leptocerca* Hartig, 1837. Fam. Blattwespen und Holzwespen, nebst Einleitung Naturgesch. Hym., p. 228.
 Type-species: *Tenthredo alni* Linnaeus. Desig. by Rohwer, 1911.
- Engages* Gistel, 1848. Naturgesch. Thierr. f. hoh. Schul., p. 9. N. name for *Leptocerca* Hartig.
- Leptocercus* Thomson, 1871. Hym. Scand., v. 1, p. 76. Emend.
- crocea* (Geoffroy). Newfoundland to Alaska s. to Conn., N. Y., N. Mex., Idaho, Oreg.; Europe to Siberia. Ecology: Widespread. Host: *Alnus*. Striped alder sawfly.
Tenthredo crocea Geoffroy, 1785. In Fourcroy, Ent. Paris, p. 364.
Tenthredo rufa Panzer, 1799. Faunae Ins. German., v. 6, t. 72, fig. 2.
Hemichroa stigma Stephens, 1835. Illus. Brit. Ent., v. 7, p. 55.
Dineura unicolor Rudow, 1872. Stettin Ent. Ztg. 30: 218.
Nematus ardens Zaddach, 1882. Phys. Okonom. Gesell. Königsberg., Schr. 23: 133.
Dineura americana Provancher, 1882. Nat. Canad. 13: 292. ♀.
Hemichroa pallida Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 15. ♀.
Hemichroa dyari Rohwer, 1918. Ent. Soc. Wash., Proc. 20: 171. ♀, ♂.
Hemichroa washingtonia Rohwer and Middleton, 1931. Ent. Soc. Wash., Proc. 34: 97. ♀, ♂.
- Biology: Ross, 1932. Canad. Ent. 64: 247-248. —Hopping, 1937. Canad. Ent. 69: 243-249.
 —Reeks and Smith, 1945. Acad. Nat. 2: 11.

Genus **HEMICHROA** Subgenus **VARNA** Ross

Hemichroa subg. *Varna* Ross, 1937. Ill. Biol. Monog. 15(2): 79.

Type-species: *Nematus militaris* Cresson. Orig. desig.

amelanchieridis (Rohwer). Maine, Que. to N. Y.; Alta. to Colo. w. to B. C., Oreg. Host: *Amelanchier*.

Pteronidea amelanchieridis Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 215. ♀.

militaris (Cresson). Ont. to Alaska s. to R. I., Pa., Ill., Mont., Nev. Ecology: Widespread. Host: *Prunus*, *Amelanchier*.

Nematus militaris Cresson, 1880. Amer. Ent. Soc., Trans. 8: 7. ♀.

Nematus thoracicus Harrington, 1893. Canad. Ent. 21: 58. ♀.

Genus **CRATEROCERCUS** Rohwer

Craterocercus Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 385.

Type-species: *Hemichroa phytophagica* Dyar. Orig. desig.

Larvae of this exclusively North American genus feed on *Quercus*.

Revision: Rohwer, 1918. Ent. Soc. Wash., Proc. 20: 162-165. —Smith, 1969. Ent. Soc. Wash., Proc. 71: 153-161.

albipes (Cresson). Oreg., Nev., Calif. Ecology: Adults collected from *Quercus*.

Mesoneura albipes Cresson, 1880. Amer. Ent. Soc., Trans. 8: 11. ♀.

Craterocercus californicus Rohwer, 1917. U. S. Natl. Mus., Proc. 53: 234. ♀.

cordleyi MacGillivray. Oreg., Calif.

Craterocercus cordleyi MacGillivray, 1923. Ill. Univ. Bul. 20(50): 9. ♀.

fraternalis (Norton). N. H. to Pa. w. to Wis., Ill., Kans., Tex. Host: *Quercus alba*.

Hemichroa fraternalis Norton, 1872. Amer. Ent. Soc., Trans. 4: 81. ♂.

Craterocercus quercivorus Rohwer, 1918. Ent. Soc. Wash., Proc. 20: 164. ♀, ♂.

Craterocercus cervinus MacGillivray, 1923. Ill. Univ. Bul. 20(50): 9. ♀.

Craterocercus circulus MacGillivray, 1923. Ill. Univ. Bul. 20(50): 9. ♀.

furcatus Smith. Conn., N. J., Ill.

Craterocercus furcatus Smith, 1969. Ent. Soc. Wash., Proc. 71: 160. ♀.

obtusum (Klug). Conn. to Fla. w. to Ill., Kans., Ark., Tex. Host: *Quercus alba*, *Q. coccinea*.

Tenthredo (Allantus) obtusa Klug, 1814. Mag. Gesell. Naturf. Freunde Berlin 8: 55. ♀.

Hemichroa albidovariata Norton, 1872. Amer. Ent. Soc., Trans. 4: 81. ♀.

Hemichroa phytophagica Dyar, 1898. N. Y. Ent. Soc., Jour. 6: 125. ♀, larva.

Craterocercus floridanus Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 238. ♀, ♂.

Genus **PLATYCAMPUS** Schiodte

Leptopus Hartig, 1837. Fam. Blattwespen und Holzwespen, nebst Einleitung Naturgesch. Hym., p. 184. Preocc. by Mayer, 1835.

Type-species: *Nematus (Leptopus) hypogastricus* Hartig. Monotypic.

Platycampus Schiodte, 1839. Mag. Zool. (ser. 2) 1: 20, footnote; pl. 6-10. N. name for *Leptopus* Hartig.

Erasminus Gistel, 1848. Naturgesch. Thierr. f. hoh. Schul., p. 9. N. name for *Leptopus* Hartig.

Camponiscus Newman, 1869. Entomologist 4: 215.

Type-species: *Camponiscus healei* Newman. Monotypic.

A small holarctic genus with two North American representatives.

albstigmus (Rohwer). N. S., Maine to Alaska s. to N. Y., Mich., Minn., Colo., Nev., Wash. Ecology: Widespread.

Camponiscus albstigmus Rohwer, 1908. N. Y. Ent. Soc., Jour. 16: 105. ♀.

americanus (Marlatt). Que., Maine to Alaska s. to Pa., N. Mex., Idaho. Ecology: Widespread. Host: *Populus*.

Camponiscus americanus Marlatt, 1896. Canad. Ent. 28: 251. ♀, ♂.

Camponiscus smithi Rohwer, 1908. N. Y. Ent. Soc., Jour. 16: 105. ♀.

Platycampus vierecki MacGillivray, 1920. Canad. Ent. 52: 60. ♀.

Genus ANOPLONYX Marlatt

Anoplonyx Marlatt, 1896. U. S. Dept. Agr. Div. Ent. Tech. Ser. 3: 18.

Type-species: *Nematus pectoralis* Lepeletier. Desig. by Rohwer, 1911.

Marlattia Ashmead, 1898. Canad. Ent. 30: 287.

Type-species: *Hemichroa laricis* Marlatt. Orig. desig.

Larvae of this holarctic genus feed on *Larix*.

Taxonomy: Wong, 1955. Canad. Ent. 87: 224-227 (larvae). — Woods, 1962. Ent. Soc. Brit.

Columbia, Proc. 59: 17 (species in B. C.).

canadensis Harrington. Newfoundland to Maine w. to Yukon, n. B. C., Sask., Minn. Host:

Larix laricina.

Anoplonyx canadensis Harrington, 1902. Canad. Ent. 34: 94. ♀.

Platycampus (*Anoplonyx*) *itascus* Rohwer and Middleton, 1932. Ent. Soc. Wash., Proc. 34: 96. ♂.

laricivorus (Rohwer and Middleton). Mont., B. C., Idaho. Host: *Larix occidentalis*.

Platycampus (*Anoplonyx*) *laricivorus* Rohwer and Middleton, 1932. Ent. Soc. Wash., Proc. 32: 95. ♀, ♂.

luteipes (Cresson). Newfoundland to Maine, N. H. w. to Yukon, n. B. C., Minn., Ill. Host: *Larix laricina*.

Dineura luteipes Cresson, 1880. Amer. Ent. Soc., Trans. 8:11. ♂.

Hemichroa laricis Marlatt, 1896. Canad. Ent. 28: 257. ♀.

Biology: Reeks and Smith, 1945. Acad. Nat. 2:11.

Morphology: Bracken, 1961. Canad. Ent. 93: 573-593.

occidens Ross. Mont., B. C., Idaho, Oreg. Host: *Larix occidentalis*.

Platycampus (*Anoplonyx*) *laricis* Rohwer and Middleton, 1932. Ent. Soc. Wash., Proc. 34: 95. ♀, ♂. Preocc. by Marlatt, 1896.

Anoplonyx occidens Ross, 1937. Ill. Biol. Monog. 15(2): 82. N. name.

Genus ADELOMOS Ross

Adelomos Ross, 1935. Canad. Ent. 67: 201.

Type-species: *Adelomos cleone* Ross. Orig. desig.

cleone Ross. Ky., Ill.

Adelomos cleone Ross, 1935. Canad. Ent. 67: 202. ♀.

Genus NEOPAREOPHORA MacGillivray

Neopareophora MacGillivray, 1908. Canad. Ent. 40: 289.

Type-species: *Neopareophora martini* MacGillivray. Orig. desig.

Dineuridea Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 240.

Type-species: *Marlattia erythrothorax* Rohwer. Orig. desig.

A small Nearctic genus with several unidentified species in addition to those listed below.

Revision: Ross, 1935. Canad. Ent. 67: 204-205.

erythrothorax (Rohwer). Fla. (Jacksonville).

Marlattia erythrothorax Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 385. ♀.

litura (Klug). N. B., Que. to Va. w. to Ill. Ecology: First instar larvae feed inside the buds, subsequent instars feed on the leaves. Host: *Vaccinium*, especially low-bush blueberry.

Dineura litura Klug, 1814. Mag. Gesell. Naturf. Freunde Berlin 8: 83. ♀.

Dineura linitus Norton, 1867. Amer. Ent. Soc., Trans. 1: 240. ♀.

Dineura lateralis Norton, 1867. Amer. Ent. Soc., Trans. 1: 240. ♀.

Neopareophora martini MacGillivray, 1908. Canad. Ent. 40: 289. ♀.

Biology: Maxwell, 1953. Canad. Ins. Pest Rev. 31(1): 100. — Neilson, 1955. Canad. Ent. 87: 356-357. — Neilson, 1958. Canad. Ent. 90: 229-234.

Genus NEMATINUS Rohwer

Nematinus Rohwer, 1911. U. S. Dept. Agr., Bur. Ent. Tech. Ser. 20: 99.

Type-species: *Tenthredo abdominalis* Panzer. Orig. desig.

A holarctic genus which is found in North America from N. S. to Alaska south to N. Y., Mich., S. Dak., Colo., and Calif. This genus has not been studied, and the following is merely a list of the described species with their type localities.

ochreateus (Rohwer). N. B. (St. John).

Pteronous ochreateus Rohwer, 1910. U. S. Natl. Mus., Proc. 38: 198. ♀.

oronus (Kincaid). Alaska (Yukatat Bay).

Pachynematus oronus Kincaid, 1900. Wash. Acad. Sci., Proc. 2: 347. ♀.

pontanioides (Marlatt). Oreg. (Mt. Hood).

Nematus pontanioides Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 89. ♀.

unicolor (Dyar). N. Y. (Keene Valley). Host: *Betula alba*.

Nematus unicolor Dyar, 1895. Amer. Ent. Soc., Trans. 22: 308. Larva. Dyar's description precedes that of Marlatt, 1896; previous listings give Marlatt as author.

Genus PACHYNEMATUS Konow

Pachynematus Konow, 1890. Deut. Ent. Ztschr., pp. 233, 238, 246.

Type-species: *Nematus capreae* Panzer. Desig. by Rohwer, 1911.

Known hosts for this genus in North America are grasses, sedges, and dock. Some species in Europe also feed on Salicaceae and Coniferae. Several species reared from wheat and other grain crops may be of economic importance. So far as is known, the grass feeding species are single brooded with the flight and feeding activities occurring early in the spring. Some of the species on sedges apparently have several generations a year. Very little biological work has been done. The taxonomy of this genus is almost entirely based on males. Females of a number of species cannot be separated; consequently, the lists of unplaced taxa below. Larvae are commonly collected, but so few have been associated with the adults that it is impossible to identify them except to genus.

Taxonomy: Ross, 1945. Ent. Soc. Wash., Proc. 47: 105-120 (key to N. Amer. species).

—Benson, 1948. Ent. Monthly Mag. 84: 58-65 (British species). —Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 405-406 (holarctic species). —Benson, 1963. Roy. Ent. Soc. London, Proc., Ser. B: Taxonomy 32: 162-164 (*Rumicis* group).

SPECIES GROUP CLITELLATUS

anolita Ross. Kans., Tex., Mont., Colo. Host: Wheat.

Pachynematus apicalis Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 107. ♂.

Preocc. in *Pachynematus* by *apicalis* Hartig.

Pachynematus anolita Ross, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 39. N. name for *apicalis* Marlatt.

auratus Marlatt. N. Y., Ohio, Ind., Ill., Iowa, Kans., Mont.

Pachynematus auratus Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 99. ♀, ♂.

clibrichellus (Cameron). N. H. to Alaska; arctic Eurasia. Host: *Carex*.

Nematus clibrichellus Cameron, 1878. Fauna Scotland, v. 1, p. 32. ♂.

Nematus Thomsoni Cameron, 1882. Ent. Soc. London, Trans., p. 540. ♀, ♂.

Nematus clibrichensis Cameron, 1885. Monog. Brit. Phytophagous Hym., v. 2, p. 88. ♂.

Pachynematus pubescens Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 100. ♀.

Pachynematus gotarius Kincaid, 1900. Wash. Acad. Sci., Proc. 2: 348. ♂.

Pachynematus venustus MacGillivray, 1921. Calif. Acad. Sci., Proc. (ser. 4) 11(14): 190. ♀, ♂.

Pachynematus vernus MacGillivray, 1921. Calif. Acad. Sci., Proc. (ser. 4) 11(14): 191. ♂.

clitellatus (Lepeletier). Labrador, Que.; Europe. Introduced ?. Host: Gramineae.

Tenthredo capreae Panzer, 1799. Faunae Ins. German, v. 6, p. 65, t. 8. Preocc. by Linnaeus, 1758.

Nematus clitellatus Lepeletier, 1823. Monog. Tenthred., p. 62. ♀.

Nematus trisignatus Foerster, 1854. Naturh. Ver. Rheinlande, Verh. 11: 292. ♀.

clypeatus Marlatt. Man., Minn., Alta., Mont.

Pachynematus clypeatus Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 102. ♀.
excisus (Thomson). Greenland; arctic Europe.

Nematus excisus Thomson, 1862. Svenska Vetensk. Akad., Ofvers. Forh. 19: 628. ♀.

extensicornis (Norton). Maine, Ont. to Md. w. to Alta., Mont., Wyo., Colo.; Europe. Host:
 Wheat, probably other Gramineae.

Nematus extensicornis Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 159. ♂.

Nematus marylandicus Norton, 1864. Ent. Soc. Phila., Proc. 3: 7. ♀.

Nematus aureopectus Norton, 1867. Amer. Ent. Soc., Trans. 1: 219. ♀.

Pachynematus affinis Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 97. ♀, ♂.

Pachynematus tritici Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 106. ♂.

Pachynematus foveolatus Konow, 1903. Ztschr. System. Hym. Dipt. 3: 379. ♀, ♂.

Pachynematus truncatus Benson, 1948. Ent. Monthly Mag. 84: 62. ♂.

jamesi Ross. Colo., Utah.

Pachynematus jamesi Ross, 1945. Ent. Soc. Wash., Proc. 47: 112. ♂.

kirbyi (Dahlbom). Que. to Alaska s. to Maine, Pa., Ill., Iowa, S. Dak., Mont.; Europe to Siberia.

Ecology: Widespread. Host: *Carex*.

Nematus kirbyi Dahlbom, 1835. Clavis Hym. Syst., p. 40. ♂.

Nematus flaviventris Hartig, 1840. Stettin Ent. Ztg. 1: 24.

Nematus diaphanus Eversmann, 1847. Soc. Nat. Moscou, Bul. 20: 19.

Nematus umbripennis Eversmann, 1847. Soc. Nat. Moscou, Bul. 20: 20.

Nematus turgidus Zaddach, 1875. Phys. Okonom. Gesell. Konigsberg, Schr. 16: 82.

Nematus suadus Cresson, 1880. Amer. Ent. Soc., Trans. 8: 10. ♀.

Pachynematus zaddachi Konow, 1903. Ztschr. System. Hym. Dipt. 3: 377. ♀, ♂.

Pachynematus infumatus Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 107. ♂.

Pachynematus refractarius MacGillivray, 1921. N. Y. Ent. Soc., Jour. 29: 31. ♀.

miscus Ross. Oreg., Calif.

Pachynematus miscus Ross, 1945. Ent. Soc. Wash., Proc. 47: 114. ♂.

Taxonomy: Middlekauff, 1955. Pan-Pacific Ent. 31: 196.

moerens (Foerster). Alta., Alaska; Europe. Host: Gramineae.

Nematus moerens Foerster, 1854. Naturh. Ver. Rheinlande, Verh. 11: 294. ♀.

Nematus pleuralis Thomson, 1862. Ofvers. Svensk. Vet. Akad., Forh. 19: 628.

Pachynematus falonus Ross, 1945. Ent. Soc. Wash., Proc. 47: 113. ♂.

nevadensis Marlatt. Nev.

Pachynematus nevadensis Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 110. ♂.

nigritibialis Rohwer. N. Y., Mich., Ohio, Ill., Nebr., Kans.

Pachynematus nigritibialis Rohwer, 1909. Canad. Ent. 41: 17. ♀.

painteri Ross. Kans., Idaho. Host: Wheat.

Pachynematus painteri Ross, 1945. Ent. Soc. Wash., Proc. 47: 115. ♀, ♂.

parvilabris (Thomson). N. W. T., Greenland; arctic Europe. Specimen collected on Ward Hunt

Is., 83° 05' N. May be the most northerly sawfly found.

Nematus parvilabris Thomson, 1862. Ofvers. Svensk. Vet. Akad., Forh. 19: 638. ♀, ♂.

Pachynematus inopinatus Lindqvist, 1949. Notulae Ent. 28: 82.

Pachynematus abstrusus Lindqvist, 1949. Notulae Ent. 28: 83.

setator Ross. N. Y., Ind., Ill., Oreg. Host: *Festuca*.

Pachynematus setator Ross, 1945. Ent. Soc. Wash., Proc. 47: 113. ♂.

Biology: Kamm, 1975. Environ. Ent. 4: 312-314 (in Oreg.).

smithae Ross. N. H.; Europe.

Pachynematus smithae Ross, 1945. Ent. Soc. Wash., Proc. 47: 116. ♂.

sporang Ross. Sask., Idaho, Wash., Oreg., Calif. Host: Wheat.

Pachynematus sporax Ross, 1945. Ent. Soc. Wash., Proc. 47: 115. ♂.

Taxonomy: Middlekauff, 1955. Pan-Pacific Ent. 31: 196-198 (female).

Biology: Armitage, 1954. Calif. Dept. Agr., Bul. 54: 73.

thoracicus Marlatt. Mont.

Pachynematus thoracicus Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 108. ♂.

uvator Ross. Utah. B. C., Wash.

Pachynematus uvator Ross, 1945. Ent. Soc. Wash., Proc. 47: 114. ♂.

UNPLACED TAXA OF GROUP CLITELLATUS

The following species were described from females. Because species separation of *Pachynematus* is based mostly on males, they can not be placed as yet.

absyrtus MacGillivray. Oreg.

Pachynematus absyrtus MacGillivray, 1923. Ill. Univ. Bul. 20(50): 27. ♀.

academus MacGillivray. Oreg.

Pachynematus academus MacGillivray, 1923. Ill. Univ. Bul. 20(50): 27. ♀.

ater (MacGillivray). Wash.

Messa ater MacGillivray, 1893. Canad. Ent. 25: 238. ♀.

coloradensis Marlatt. Colo.

Pachynematus coloradensis Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 101. ♀.

ebenus (Cresson). Colo.

Aulacomerust ebenus Cresson, 1880. Amer. Ent. Soc., Trans. 8: 10. ♀.

gamus Smith, n. name. Nev.

Pachynematus graminis Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 101. ♀.
Preocc. in *Pachynematus* by Cameron, 1874.

hoodi Marlatt. Oreg. (Mt. Hood).

Pachynematus hoodi Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 104. ♀.

luteipes (Cresson), n. comb. Nev.

Nematus luteipes Cresson, 1880. Amer. Ent. Soc., Trans. 8: 6. ♀.

pleuricus (Norton). Colo.

Nematus pleuricus Norton, 1867. Amer. Ent. Soc., Trans. 1: 208. ♀.

robinsonae (Rohwer). Colo.

Lygaonematus robinsonae Rohwer, 1915. U. S. Natl. Mus., Proc. 49: 212. ♀.

stigmatus (Norton). Mass.

Tenthredo (Nematus) stigmatus Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., p. 583. Nom. nud.

Nematus stigmatus Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 161. ♀.

SPECIES GROUP VAGUS

aurantiacus Marlatt. Que. to N. Y. w. to Alta., Mont., Ill. Host: *Carex*.

Pachynematus aurantiacus Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 95. ♀, ♂.

Pachynematus punctulatus Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 103. ♀.

Pachynematus allegatus MacGillivray, 1923. Canad. Ent. 55: 162. ♀.

corniger (Norton). Newfoundland to Ga. w. to Minn., Kans. Host: *Carex*.

Nematus corniger Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 159. ♂.

Nematus subalbatus Norton, 1864. Ent. Soc. Phila., Proc. 3: 7. ♀.

Pachynematus repertus MacGillivray, 1921. N. Y. Ent. Soc., Jour. 29: 31. ♀.

Pachynematus remissus MacGillivray, 1921. N. Y. Ent. Soc., Jour. 29: 32. ♀. Synonymy of *remissus* may be questionable.

montivagus Marlatt. N. H.

Pachynematus montivagus Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 101. ♀.

obductus (Hartig). Mass. to B. C. s. to N. Y., Colo., Nev.; Greenland; Iceland, Europe to Siberia. Ecology: Widespread. Host: Gramineae.

Nematus obductus Hartig, 1837. Fam. Blattwespen und Holzwespen, nebst Einleitung Naturgesch. Hym., p. 201. ♀, ♂.

Nematus conductus Ruthe, 1859. Stettin Ent. Ztg. 20: 306. ♀.

Nematus graminis Cameron, 1874. Ent. Monthly Mag. 10: 221. ♀.

Nematus palliventris Cresson, 1880. Amer. Ent. Soc., Trans. 8: 5. ♀.

Pachynematus boulderensis Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 218. ♀.

rufocinctus MacGillivray. Conn.

Pachynematus rufocinctus MacGillivray, 1916. Conn. State Geol. and Nat. Hist. Survey Bul. 22: 117. ♀, ♂.

vagus (Fabricius). Ont. to Alta., Idaho s. to N. Y., Ill., Minn., Mont.; Europe to Siberia. Ecology: Widespread. Host: *Carex*, *Salix*.

Tenthredo vaga Fabricius, 1781. Species Insectorum, v. 1, p. 415.

Nematus leucogaster Hartig, 1840. Stettin Ent. Ztg. 1: 23.

Nematus inconspicuus Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 141. ♀.

Pachynematus corticosus MacGillivray, 1901. N. Y. State Mus., Bul. 47: 584. ♀.

Pachynematus roscidus MacGillivray, 1901. N. Y. Ent. Soc., Jour. 29: 31. ♀.

UNPLACED TAXA OF GROUP VAGAS

abdominalis Marlatt. Wash.

Pachynematus abdominalis Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 104. ♀.

carolinensis Marlatt. N. C.

Pachynematus carolinensis Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 109. ♂.

koebelei Marlatt. Oreg.

Pachynematus koebelei Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 108. ♂.

robustiformis Rohwer. Colo.

Pachynematus robustiformis Rohwer, 1908. N. Y. Ent. Soc., Jour. 16: 108. ♀.

robustus Marlatt. Mont.

Pachynematus robustus Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 102. ♀.

SPECIES GROUP RUMICIS

freyi Lindqvist. N. W. T., Yukon; Europe to Siberia.

Pachynematus freyi Lindqvist, 1949. Notulae Ent. 28: 81. ♀.

rumicis (Linnaeus). Man., Alaska; Iceland, Europe to Siberia. Host: *Rumex*.

Tenthredo rumicis Linnaeus, 1758. Syst. Nat., Ed. 10, v. 1, p. 559.

Nematus flavipennis Cameron, 1876. Ent. Monthly Mag. 12: 189. ♀.

Genus PIKONEMA Ross

Pikonema Ross, 1937. Ill. Biol. Monog. 15(2): 86.

Type-species: *Nematus dimmockii* Cresson. Orig. desig.

Larvae of this Nearctic genus feed on species of *Picea*.

Revision: Ross, 1938. Ent. Soc. Wash., Proc. 40: 17-20 (adults and larvae).

Taxonomy: Wong, 1951. Ont. Ent. Soc., Ann. Rpt. 1951, p. 65 (cocoons).

alaskensis (Rohwer). Newfoundland to Alaska s. to Mass., Mich., Minn., Wyo., Idaho, B. C.

Ecology: Widespread. Host: *Picea canadensis*, *P. engelmannii*, *P. excelsa*, *P. glauca*, *P. mariana*, *P. rubens*, *P. pungens*, *P. sitchensis*, *P. abies*. Yellowheaded spruce sawfly.

Pachynematus alaskensis Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 387. ♀, ♂.

Pachynematus piceae Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 387. ♀, ♂.

Biology: Brown, 1938. Ont. Ent. Soc., Ann. Rpt. 1937, p. 14. —Nash, 1939. Jour. Econ. Ent.

32: 330-334. —Brown, 1941. Canad. Dept. Agr., Pub. 712, p. 6. —Schaffner, 1943. Jour.

Forestry 41: 585. —Reeks and Smith, 1945. Acad. Nat. 2: 11. —Bradley, 1951. Canad. Ent.

83: 130. (parasites). —Wilson, 1962. U. S. Dept. Agr., Forest Pest Leaflet 69, 4 pp.

dimmockii (Cresson). Newfoundland to N. W. T., B. C. s. to N. B., N. H., Man., Colo., Wyo., Idaho. Ecology: Widespread. Host: *Picea canadensis*, *P. engelmannii*, *P. glauca*, *P. mariana*, *P. rubens*, *P. sitchensis*, *P. abies*. Greenheaded spruce sawfly.

Nematus dimmockii Cresson, 1880. Amer. Ent. Soc., Trans. 8: 6. ♀.

Nematus ochreateus Harrington, 1889. Canad. Ent. 21: 95. ♀.

Biology: Brown, 1938. Ont. Ent. Soc., Ann. Rpt. 1937, p. 14. —Brown, 1941. Canad. Dept.

Agr., Pub. 712, p. 6. —Reeks and Smith, 1945. Acad. Nat. 2: 11.

ruralis (Cresson). Oreg., Calif., Nev.

Nematus ruralis Cresson, 1880. Amer. Ent. Soc., Trans. 8: 5. ♀.

Genus EITELIUS Kontuniemi

Eitelius Kontuniemi, 1966. Ann. Ent. Fenn. 31: 46.

Type-species: *Pachynematus dentatus* Lindqvist. Orig. desig.

Prior to 1967, the species below was placed in the genus *Micronematus* Konow which is now a synonym of *Pristiphora*.

Taxonomy: Wong, 1967. Canad. Ent. 99: 1101-1104.

gregarius (Marlatt). N. S., Mass., Conn., N. J. Host: *Salix*.

Pachynematus gregarius Marlatt, 1896. Canad. Ent. 28: 256. ♀, ♂.

Pachynematus rarus MacGillivray, 1921. N. Y. Ent. Soc., Jour. 29: 30. ♀.

Pontania decrepita MacGillivray, 1921. N. Y. Ent. Soc., Jour. 29: 33. ♀.

Genus PRISTIPHORA Latreille

Pristiphora Latreille, 1810. Consid. Generales Crust. Arachn. Ins., p. 294.

Type-species: *Pteronotus testaceus* Jurine. Orig. desig.

Diphadnus Hartig, 1837. Fam. Blattwespen und Holzwespen, nebst Einleitung Naturgesch. Hym., p. 225.

Type-species: *Nematus fuscicornis* Hartig. Desig. by Rohwer, 1911.

Lygaeonematus Konow, 1890. Deut. Ent. Ztschr., pp. 233, 238, 247.

Type-species: *Nematus pini* Retzius. Desig. by Rohwer, 1911.

Micronematus Konow, 1890. Deut. Ent. Ztschr., pp. 233, 239, 248.

Type-species: *Nematus pullus* Foerster. Desig. by Rohwer, 1911.

Gymnonychus Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 122.

Type-species: *Gymnonychus californicus* Marlatt. Orig. desig.

Neotomoslethus MacGillivray, 1908. Canad. Ent. 40: 290.

Type-species: *Neotomoslethus hyalinus* MacGillivray. Orig. desig.

Pristiphora subg. *Sala* Ross, 1937. Ill. Biol. Monog. 15(2): 85. Preocc. by Walker, 1867.

Type-species: *Nematus chloereus* Norton. Orig. desig.

Lygaeonematus subg. *Lygaeotus* Lindqvist, 1952. Notulae Ent. 32: 82. Invalid, type-species not designated.

Lygaeonematus subg. *Lygaeophora* Lindqvist, 1952. Notulae Ent. 32: 82. Invalid, type-species not designated.

A large, nearly cosmopolitan genus with diverse host plants. Two species from southern Brazil are the only known South American Nematinae. Several phyletic lines are evident in this genus which will eventually allow separation into more convenient species groupings.

Revision: Marlatt, 1896. U. S. Dept. Agr. Div. Ent. Tech. Ser. 3: 113-125.

Taxonomy: Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 394-396 (holarctic species).

abbreviata (Hartig). Ont., Conn. to Va. w. to Wis., Kans., Colo., Utah; B. C., Wash., Oreg., Calif.; Europe. Ecology: A pest of pear trees. Larva feeds on foliage. Introduced. Host: *Pyrus communis*. California pearslug.

Nematus abbreviatus Hartig, 1837. Fam. Blattwespen und Holzwespen, nebst Einleitung Naturgesch. Hym., p. 205. ♀.

Gymnonychus californicus Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 122. ♀.

Taxonomy: Smith, 1967. Ent. Soc. Wash., Proc. 69: 92 (distribution). —Wong, 1967. Canad. Ent. 99: 1101 (compared with species of *Eitelius*).

Biology: Nougaret, Davidson, and Newcomer, 1916. U. S. Dept. Agr., Bul. 438, 24 pp.

Morphology: Zocchi, 1948. Bol. Ent. Bologna 17: 225-232 (external structure of adult and larva).

acidovalva Wong. N. B., Que. w. to B. C., Calif. Host: *Salix*.

Pristiphora acidovalva Wong, 1969. Canad. Ent. 101: 970. ♀, ♂.

Biology: Lindquist and Miller, 1969. Canad. Ent. 101: 973-975 (also description of larva).

aphanta Wong and Ross. Que., Ont., N. Y.

Pristiphora aphanta Wong and Ross, 1960. Canad. Ent. 92: 196. ♀.

- aquilegiae** (Vollenhoven). Ont.; Europe. Introduced. Host: *Aquilegia*.
Nematus aquilegiae Vollenhoven, 1866. Tidskr. v. Ent. 11: 202. ♀.
- Biology: McNay, 1963. Canad. Ins. Pest Rev. 41: 103. — McNay, 1964. Phytoprotection 45: 91.
- banksi** Marlatt. N. Y. to N. C.; Wyo. Host: *Vaccinium*.
Pristiphora banksi Marlatt, 1896. U. S. Dept. Agr. Div. Ent. Tech. Ser. 3: 117. ♀ (male misdet.).
- bivittata** (Norton). Prince Edward Is., N. B. w. to B. C. s. to N. C., Ill., Iowa, Oreg. Ecology: Widespread. Host: *Spiraea*.
Nematus bivittatus Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 158. ♀.
Nematus luteolus Norton, 1867. Amer. Ent. Soc., Trans. 1: 200. ♂.
Pachynematus occidentalis Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 109. ♂.
Pristiphora dyari Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 118. ♀. N. syn.
Pristiphora koebelei Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 119. ♀.
Pristiphora occidentalis Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 121. ♂.
 Preocc. by *occidentalis* Marlatt on p. 109 of same publication.
Periclista patchi MacGillivray, 1923. Ill. Univ. Bul. 20(50): 29. ♀.
- Biology: Neilson, 1958. Canad. Ent. 90: 229-234.
- borea** (Konow). Labrador, Que. w. to Alaska, B. C.; Europe. Host: *Betula*, *Salix*.
Lygaeonematus boreus Konow, 1904. Ztschr. System. Hym. Dipt. 4: 253. ♀, ♂.
Nematus astutus Cameron, 1885. Monog. Brit. Phytophagous Hym., v. 2, p. 77. ♀.
 Synonymy may be questionable.
Pachynematus lapponicus Enslin, 1916. Deut. Ent. Ztschr., Beih., p. 463. ♀, ♂.
- Taxonomy: Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 395.
- breadalbanensis** (Cameron). Que., N. W. T., Man., Colo., Alta., Yukon, Alaska, B. C.; Europe.
Nematus breadalbanensis Cameron, 1882. London Ent. Soc., Trans., p. 531.
Nematus Whitei Cameron, 1878. Fauna Scotland, v. 1, p. 35. ♂. Synonymy may be questionable.
Lygaeonematus tromsoensis Kiaer, 1898. Tromsø Mus. Aarsh. 19: 48.
Lygaeonematus corpulentus Konow, 1904. Ztschr. System. Hym. Dipt. 4: 252. ♀, ♂.
Lygaeonematus arcticola Enslin, 1916. Deut. Ent. Ztschr., Beih., p. 514. ♀, ♂.
- cadma** Wong and Ross. Ont., Sask., Alaska, B. C. Host: *Betula*.
Pristiphora cadma Wong and Ross, 1960. Canad. Ent. 92: 198. ♀.
- carolinensis** Marlatt. N. C.
Pristiphora carolinensis Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 120. ♂.
 Possibly belongs in *Pachynematus*.
- chloreia** (Norton). N. B. to Fla. w. to Man., Oreg., Tex. Host: *Quercus*.
Nematus chloreus Norton, 1867. Amer. Ent. Soc., Trans. 1: 221. ♀.
Nematus pallifrons Cresson, 1880. Amer. Ent. Soc., Trans. 8: 6. ♂.
Nematus decoratus Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 349. ♂.
Pteronus quercus Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 67. ♀. Preocc. in *Pristiphora* by Hartig, 1837.
Nematus pergandei Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 90. ♀.
Amauronematus vacalus MacGillivray, 1923. Ill. Univ. Bul. 20(50): 6. ♀. N. syn.
- cincta** Newman. Newfoundland w. to N. W. T., Alaska s. to Ala., Tenn., Mich., Minn., Colo., B. C.; Europe. Ecology: Widespread. Host: *Betula*, *Vaccinium*, *Salix*.
Pristiphora cincta Newman, 1837 (January). Ent. Mag. 4: 259.
Nematus quercus Hartig, 1837 (March). Fam. Blattwespen und Holzwespen, nebst Einleitung Naturgesch. Hym., p. 188.
Tenthredo borealis Zetterstedt, 1838. Ins. Lapponica 1: 353. ♀.
Nematus idiota Norton, 1867. Amer. Ent. Soc., Trans. 1: 177. ♂.
Nematus identidem Norton, 1867. Amer. Ent. Soc., Trans. 1: 177. ♀.
Pristiphora hoodi Marlatt, 1896. U. S. Dept. Agr. Div. Ent. Tech. Ser. 3: 119. ♀. Synonymy questionable.
Pristiphora coloradensis Marlatt, 1896. U. S. Dept. Agr. Div. Ent. Tech. Ser. 3: 121. ♂.
 Synonymy questionable.
Pristiphora idiotiformis Rohwer, 1910. U. S. Natl. Mus., Proc. 38: 199. ♀.

Pristiphora cincta ab. *nigriventris* Hellen, 1943. Notulae Ent. 23: 71

Biology: Neilson, 1958. Canad. Ent. 90: 229-234 (*idiota* on *Vaccinium*).

coactula (Ruthe). Labrador w. to N. W. T., Alaska; Colo.; Europe. Host: *Salix*, *Vaccinium*(?).

Nematus coactulus Ruthe, 1859. Stettin Ent. Ztg. 20: 307. ♀.

Nematus winnipeg Norton, 1867. Amer. Ent. Soc., Trans. 1: 198. ♀.

Nematus alpinus Thomson, 1871. Hym. Scand., v. 1, p. 98. ♀, ♂.

Lygaonematus pachyvalvis Konow, 1904. Ztschr. System. Hym. Dipt. 4: 253. ♀, ♂.

Lygaonematus winnipegensis Konow, 1905. In Wytsman, Gen. Ins., v. 29, p. 68. Emend. of *winnipeg*.

Pristiphora dawsoni Rohwer, 1908. N. Y. Ent. Soc., Jour. 16: 109. ♀.

Taxonomy: Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 395.

elaphita Wong and Ross. Sask., N. Mex., Alta., B. C., Calif.

Pristiphora elaphita Wong and Ross, 1960. Canad. Ent. 92: 194. ♀.

erichsonii (Hartig). Newfoundland to Alaska s. to Md., W. Va., Mich., Ill., Minn., Mont., Idaho, Oreg.; Europe to Japan. Ecology: Widespread. Possibly introduced. Host: *Larix laricina*, *L. occidentalis*, *L. lyallii*, and European and Asian larch species and hybrids. Larch sawfly. Numerous papers have appeared on this destructive species; therefore, it is feasible to give only selected references below.

Nematus Leachei Dahlbom, 1835. Conspectus Tenthred., Siricid., Oryssin. Scand., p. 10. Nom. nud.

Nematus Leachii Dahlbom, 1835. Clavis Hym., p. 27. Larva. Suppressed by Internatl. Comm. Zool. Nomencl., Opinion 906, 1970. Bul. Zool. Nomencl. 27: 8.

Nematus erichsonii Hartig, 1837. Fam. Blattwespen und Holzwespen, nebst Einleitung Naturgesch. Hym., p. 187. ♀.

Nematus notabilis Cresson, 1880. Amer. Ent. Soc., Trans. 8: 7. ♀.

Taxonomy: Coppel and Leius, 1958. 10th Internatl. Cong. Ent., Proc. 1: 231-238 (variations in populations from Canada, Great Britain, and Japan). —Wong, 1974. Canad. Ent. 106: 1121-1131 (identification and origin of strains in N. Amer.).

Biology: Ives, 1955. Canad. Ent. 87: 301-311 (moisture and selection of cocoon sites). —Ives, 1955. Canad. Jour. Zool. 33: 370-388 (estimation of egg populations). —Drooz, 1956. U. S. Dept. Agr., Forest Pest Leaflet 8, 4 pp. (rev. 1967). —Graham, 1956. Forest Sci. 2: 132-160 (Lake states). —Ruppel, 1958. Ent. Soc. Brit. Columbia, Proc. 55: 32-35 (history in B. C.). —Buckner, 1958. 10th Internatl. Cong. Ent., Proc. 4: 353-361 (mammal predators). —Ives and Prentice, 1958. Canad. Ent. 90: 331-338 (sampling techniques). —Ives and Prentice, 1959. Canad. Ent. 91: 496-500 (estimates of parasitism). —Graham and Satterlund, 1959. Forest Sci. 5: 28-36 (weather and water levels on cocoons). —Ives and Turnock, 1959. Canad. Ent. 91: 650-661 (estimates of cocoon populations). —Buckner, 1959. Canad. Ent. 91: 275-282 (cocoon predation by mammals). —Turnock, 1960. Canad. Ent. 92: 500-516. —Drooz, 1960. U. S. Dept. Agr., Tech. Bul. 1212, 52 pp. (biology and control; references to most of literature up to 1956). —Turnock, 1960. Canad. Ent. 92: 659-662 (estimation of adult populations). —Maw, 1960. Ent. Gaz. 11: 43-49 (Great Britain). —Ives, 1960. Canad. Ent. 92: 668-674. —Heron, 1961. Canad. Ent. 93: 431-433 (temperature and post-diapause development). —Nairn, *et al.*, 1962. Canad. Ent. 94: 242-255 (outbreaks and effects on forest stands). —Turnock and Ives, 1962. Canad. Ent. 94: 897-902 (cocoon mortality). —Ives, 1962. Canad. Ent. 94: 256-268 (mortality of eggs and larvae). —Ives, 1963. Canad. Ent. 95: 887-892 (defoliation effect on larval survival). —Pschorn-Walcher and Eichhorn, 1963. Comm. Inst. Biol. Control, Tech. Bul. 3: 51-82 (ecology and natural control in central Europe). —Frilli, 1964. Milan Univ. Cattolica Sacro Cuore Fac. Agr., Ann. 4: 528-586 (morpho-biological studies). —Buckner and Turnock, 1965. Ecology 46: 223-226 (avian predators). —Ives and Nairn, 1966. Canad. Ent. 98: 768-777 (water levels and overwintering survival). —Schmiege, 1966. Canad. Ent. 98: 671-672 (Alaska). —Smirnov, 1966. Jour. Invert. Path. 8: 360-364 (a microsporidian parasite). —Turnock and McLeod, 1966. Ent. Soc. Manitoba, Proc. 22: 55-60 (n. Man.). —Heron, 1966. Canad. Ent. 98: 561-578 (reproductive capacity). —Ives, 1967. Canad. Ent. 99: 1121-1131 (mortality causes). —Heron, 1967. Canad. Ent. 99: 1150-1155 (heat tolerance of larvae). —Elliott and

- Muldrew, 1967. *Canad. Ent.* 99: 321-323 (rearing cage). — Muldrew, 1967. *Canad. Ent.* 99: 312-321 (biology and dispersal of an introduced parasite). — Ives, 1967. *Canad. Ent.* 99: 607-622 (invertebrate predators and prey). — Ives, 1968. *Manitoba Ent.* 2: 5-36 (population dynamics techniques). — Ives, 1968. *Canad. Ent.* 100: 373-385 (survival and water levels). — Smirnov, 1968. *Jour. Invert. Path.* 10: 417-424 (diseases). — Smirnov and Chu, 1968. *Jour. Invert. Path.* 10: 12 (microsporidian infection). — Heron, 1968. *Canad. Ent.* 100: 470-475 (dyes as markers for behavioral studies). — Turnock and Muldrew, 1968. *Forest Chronicle* 44: 38 (control by introduced parasite). — Harman, 1970. *Chesapeake Sci.* 11: 183-190 (Md.). — Harman, 1971. *Chesapeake Sci.* 12: 40-44 (natural mortality of feeding and cocooning stages). — Heron, 1971. *Canad. Ent.* 103: 1153-1155 (temperature tolerance of pronymphs and pupae).
- Morphology: Wong, 1956. *Canad. Ent.* 88: 545 (gynandromorphs and intersexes). — Wong, 1963. *Canad. Ent.* 95: 897-920 (external morphology of male, female, and larva).
- gelida* Wong. N. W. T., Yukon, Alaska, Alta., Colo.
Pristiphora gelida Wong, 1968. *Jour. Nat. Hist.* 2: 185. ♀, ♂.
- geniculata* (Hartig). Newfoundland, Ont. s. to W. Va.; Europe to Siberia. Introduced. Host: *Sorbus*. Mountain ash sawfly.
Nematus geniculatus Hartig, 1840. *Stettin Ent. Ztg.* 1: 26. ♀.
Nematus cheilon Zaddach, 1883. *Phys. Okonom. Gesell. Königsberg, Schr.* 24: 145. ♀, ♂.
- Biology: Schaffner, 1936. *Jour. Econ. Ent.* 29: 469. — Forbes and Daviault, 1964. *Canad. Ent.* 96: 1117-1133. — Smirnov, 1968. *Jour. Invert. Path.* 10: 436-437 (virus disease).
- gronblomi* (Lindqvist). Alaska; N. Europe.
Lygaeotus gronblomi Lindqvist, 1952. *Notulae Ent.* 32: 101. ♀, ♂.
- hucksena* Wong and Ross. B. C.
Pristiphora hucksena Wong and Ross, 1960. *Canad. Ent.* 92: 104. ♀.
- hyalina* (MacGillivray). N. Y.
Neotomostethus hyalinus MacGillivray, 1908. *Canad. Ent.* 40: 290. ♀.
- jocularis* Cresson. Oreg., Nev.
Pristiphora jocularis Cresson, 1880. *Amer. Ent. Soc., Trans.* 8: 3. ♀, ♂.
- labradoris* (Norton). Labrador, Ont., N. W. T., Man., Alta., Yukon.
Nematus labradoris Norton, 1867. *Amer. Ent. Soc., Trans.* 1: 196. ♀.
- lata* (Cresson). Oreg., Nev.
Nematus latus Cresson, 1880. *Amer. Ent. Soc., Trans.* 8: 4. ♀.
- lativentris* (Thomson). N. W. T., Man., Alaska; Europe.
Nematus lativentris Thomson, 1871. *Hym. Scand.*, v. 1, p. 99. ♀, ♂.
Nematus scoticus Cameron, 1881. *Ent. Soc. London, Proc.*, p. 365. ♀.
Nematus extremus Holmgren, 1883. *Ent. Tidskr.* 4: 148. ♀, ♂.
Pristiphora buccoda Kincaid, 1900. *Wash. Acad. Sci., Proc.* 2: 350. ♀.
Lygaeonematus apicola Konow, 1904. *Ztschr. System. Hym. Dipt.* 4: 254. ♀, ♂. Synonymy of *apicola* may be questionable.
- Taxonomy: Benson, 1962. *Brit. Mus. (Nat. Hist.) Ent., Bul.* 12: 395.
- leechi* Wong and Ross. Mont., Idaho, B. C., Wash. Host: *Larix occidentalis*.
Pristiphora leechi Wong and Ross, 1960. *Canad. Ent.* 92: 193. ♀, ♂.
- lena* Kincaid. Newfoundland to N. W. T., Alaska; Wyo., Colo. Host: *Picea*.
Pristiphora lena Kincaid, 1900. *Wash. Acad. Sci., Proc.* 2: 351. ♂.
- maura* Rohwer. Que., N. W. T., Yukon, Alaska, Man., Alta., Colo.
Pristiphora maura Rohwer, 1908. *N. Y. Ent. Soc., Jour.* 16: 109. ♂.
- melanocarpa* (Hartig). Que., N. W. T., Yukon, Alaska, Man.; Europe. Host: *Betula*.
Nematus melanocarpus Hartig, 1840. *Stettin Ent. Ztg.* 1: 27. ♀.
Nematus wustneii Stein, 1885. *Wien. Ent. Ztg.* 4: 304. ♀, ♂.
Pristiphora ortinga Kincaid, 1900. *Wash. Acad. Sci., Proc.* 2: 349. ♀. N. syn.
- micronematica* Malaise. N. W. T., Man.; Europe to Siberia. Host: *Salix*.
Pristiphora micronematica Malaise, 1932. *Arkiv for Zool.* 23A: 58. ♀.
Lygaeonematus (Lygaeophora) leucostoma Lindqvist 1952. *Notulae Ent.* 32: 108. ♀, ♂.

- Taxonomy: Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 394. — Lindqvist, 1971. Notulae Ent. 51: 128-129.
- mollis** (Hartig). Labrador to N. W. T., Alaska s. to N. C., Colo.; Europe. Host: *Vaccinium*. *Nematus mollis* Hartig, 1837. Fam. Blattwespen und Holzwespen, nebst Einleitung Naturgesch. Hym., p. 201.
- Pachynematus orarius* Kincaid, 1900. Wash. Acad. Sci., Proc. 2: 348. ♀.
- Pachynematus penagalensis* Enslin, 1911. Deut. Ent. Ztschr. 2: 176. ♀.
- Lygaeonematus mollis* var. *albipes* Lindqvist, 1942. Notulae Ent. 22: 107.
- Lygaeonematus mollis* var. *rufonotata* Lindqvist, 1942. Notulae Ent. 22: 107.
- Pachynematus kontkaneni* Lindqvist, 1960. Notulae Ent. 40: 35. ♀.
- nigra** Marlatt. Wash.
- Pristiphora nigra* Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 114. ♀.
- paedida** (Konow). Alaska; Europe to Siberia.
- Lygaeonematus paedidus* Konow, 1904. Ztschr. System. Hym. Dipt. 4: 253.
- Pristiphora kamtschatica* Malaise, 1932. Arkiv for Zool. 23A: 56. ♀, ♂.
- pallidiventris** (Fallen). Labrador to Alaska s. to Md., Mich., Iowa, Calif.; Europe to Japan.
- Ecology: Widespread. Host: *Rubus*, *Geum*, *Potentilla*, and other Rosaceae. These hosts were recorded in Europe.
- Nematus pallidiventris* Fallen, 1808. Svenska Vetensk. Akad., Handl. 29: 120. ♀.
- Pristiphora myosotidis* Stephens, 1835. Illus. Brit. Ent., v. 7, p. 25.
- Nematus ephippiger* Hartig, 1840. Stettin Ent. Ztg. 1: 24. ♀.
- Nematus flavicornus* Tischbein, 1846. Stettin Ent. Ztg. 7: 77. ♀.
- Nematus nigricans* Eversmann, 1847. Soc. Nat. Moscou, Bul. 20: 16. ♀.
- Nematus caudalis* Eversmann, 1847. Soc. Nat. Moscou, Bul. 20: 16. ♂.
- Nematus brevisculus* Eversmann, 1847. Soc. Nat. Moscou, Bul. 20: 17. ♀.
- Nematus gemellus* Foerster, 1854. Naturh. Ver. Rheinlande, Verh. 11: 425. ♀.
- Nematus cirrhostomus* Zaddach, 1882. Phys. Okonom. Gesell. Konigsberg., Schr. 23: 195. ♀.
- Pristiphora zella* Rohwer, 1909. Canad. Ent. 41: 20. ♀. N. syn.
- Pristiphora pallicoxa* Rohwer, 1910. U. S. Natl. Mus., Proc. 38: 200. ♀. N. syn.
- Pristiphora(?) zanthotrachela* Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 281. ♀. N. syn.
- Pristiphora pallidiventris* var. *haemorrhoidalis* Enslin, 1916. Deut. Ent. Ztschr., Beih., p. 526. ♀, ♂.
- Pristiphora pallidiventris* var. *stigmatica* Enslin, 1916. Deut. Ent. Ztschr., Beih., p. 526. ♀.
- Pristiphora ostiaria* MacGillivray, 1920. Canad. Ent. 52: 236. ♀, ♂. N. syn.
- Nematus (Pristiphora) pallidiventris* var. *flaviapex* Hellen, 1948. Notulae Ent. 28: 45.
- Nematus (Pristiphora) pallidiventris* var. *nigrofemoratus* Hellen, 1948. Notulae Ent. 28: 45.
- paloma** Wong and Ross. N. Y. to Fla. w. to Ill.
- Pristiphora paloma* Wong and Ross, 1960. Canad. Ent. 92: 196. ♀.
- parbeta** Wong and Ross. Man., Alaska. Host: *Betula papyrifera*.
- Pristiphora parbeta* Wong and Ross, 1960. Canad. Ent. 92: 198. ♂.
- pseudocactula** (Lindqvist). Man. (Churchill); Europe.
- Lygaeonematus (Lygaeonematus) pseudocactula* Lindqvist, 1952. Notulae Ent. 32: 115. ♀, ♂.
- relativa** Norton. N. W. T.
- Pristiphora relativa* Norton, 1867. Amer. Ent. Soc., Trans. 1: 177. ♀.
- reuteri** (Lindqvist). Maine, N. H., Man.; Europe. Host: *Salix*.
- Lygaeonematus (Lygaeophora) reuteri* Lindqvist, 1960. Notulae Ent. 40: 33. ♀, ♂.
- Taxonomy: Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 395. — Vikberg, 1966. Ann. Ent. Fenn. 32: 252-253 (larva).
- rufipes** Lepeletier. Newfoundland to B. C. s. to N. C., Tenn. Mo., Colo., Utah, Calif.; Europe to Siberia. Ecology: Widespread. Host: *Ribes*.
- Pristiphora pallipes* Lepeletier, 1823. Monog. Tenthred., p. 60. ♀. Preocc. in *Pristiphora* by Fallen, 1808.
- Pristiphora rufipes* Lepeletier, 1823. Monog. Tenthred., p. 60. ♀.
- Pristiphora fusca* Lepeletier, 1823. Monog. Tenthred., p. 60. ♂.

- Tenthredo (Nematus) pallicornis* Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., p. 583. Nom. nud.
- Tenthredo (Nematus) labrata* Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., p. 583. Nom. nud.
- Nematus appendiculatus* Hartig, 1837. Fam. Blattwespen und Holzwespen, nebst Einleitung Naturgesch. Hym., p. 202. ♀.
- Nematus (Diphadnus) fuscicornis* Hartig, 1837. Fam. Blattwespen und Holzwespen, nebst Einleitung Naturgesch. Hym., p. 225. ♀.
- Nematus catharticus* Foerster, 1854. Naturh. Ver. Rheinlande, Verh. 11: 325. ♀.
- Nematus pallicornis* Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 160. ♀.
- Nematus pallicornis* var. *labratus* Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 160. ♀.
- Nematus vitreipennis* Kawall, 1864. Soc. Nat. Moscou, Bul. 37: 295. ♀.
- Pristiphora grossulariae* Walsh, 1866. Pract. Ent. 1: 123. ♀, ♂. larva.
- Nematus peletieri* Andre, 1880. Spec. Hym. Eur. Alg. 1: 5. ♀.
- Nematus pumilus* Zaddach, 1883. Phys. Okonom. Gesell. Königsberg., Schr. 24: 172. ♂.
- Nematus hypobatus* Zaddach, 1884. Phys. Okonom. Gesell. Königsberg., Schr. 25: 154. ♀.
- Nematus ghilianii* Costa, 1894. Prosp. Imen. Ital. 3: 73.
- Biology: Miles, 1932. Bul. Ent. Res. 23: 10-15.
- serrula** Wong and Ross. Maine, N. H., B. C., Wash., Oreg., Calif.
- Pristiphora serrula* Wong and Ross, 1960. Canad. Ent. 92: 196. ♀.
- siskiyouensis** Marlatt. N. S. to N. W. T., Yukon, Alaska s. to Va., Wis., Calif. Ecology: Widespread. Host: *Betula*, *Alnus*
- Pristiphora siskiyouensis* Marlatt, 1896 U. S. Dept. Agr. Div. Ent. Tech. Ser. 3: 116. ♀, ♂.
- Pristiphora betulavora* Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 219. ♀, ♂.
- Taxonomy: Middleton, 1922. U. S. Natl. Mus., Proc. 61: 24 (larva).
- Biology: Wong, 1954. Canad. Ent. 86: 154.
- staudingeri** (Ruthe). Labrador to Alaska s. to Man., Colo., Alta.; Europe to Siberia. Host: *Salix*.
- Nematus staudingeri* Ruthe, 1859. Stettin Ent. Ztg. 20: 306. ♀, ♂.
- Nematus circularis* Kincaid, 1900. Wash. Acad. Sci., Proc. 2: 350. ♀. N. syn.
- Pristiphora hyperborea* Malaise, 1921. Ent. Tidskr. 42: 11. ♀, ♂.
- Pristiphora asperlatus* Benson, 1935. Roy. Ent. Soc. London, Trans. 83: 36. ♀, ♂.
- sycophanta** Walsh. Labrador to Alaska s. to Conn., Va., Mo., Colo., Oreg. Ecology: Widespread. Host: *Salix*.
- Pristiphora sycophanta* Walsh, 1866. Ent. Soc. Phila., Proc. 6: 263. ♀.
- Pristiphora tibialis* Norton, 1867. Amer. Ent. Soc., Trans. 1: 76. ♀.
- Nematus trivialis* Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 140. Unnecessary n. name for *tibialis* Norton.
- Pristiphora murtfeldtiae* Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 117. ♀.
- Pristiphora anaka* Kincaid, 1900. Wash. Acad. Sci., Proc. 2: 350. ♀. N. syn.
- valvangua** Wong and Ross. N. Y. (?)
- Pristiphora valvangua* Wong and Ross, 1960. Canad. Ent. 92: 194. ♂.
- venatta** Wong and Ross. Idaho.
- Pristiphora venatta* Wong and Ross, 1960. Canad. Ent. 92: 196. ♀.

Genus CROESUS Leach

Croesus Leach, 1817. Zool. Misc., v. 3, p. 129.

Type-species: *Tenthredo septentrionalis* Linnaeus. Monotypic.

A small holarctic genus characterized by the enlarged, flattened hind basitarsus. Larvae feed externally on the foliage of the host plant.

Revision: Benson, 1963. Ent. Tidskr. 84: 25 (world species groups). — Smith, 1972. Ent. Soc. Wash., Proc. 74: 169-180 (Nearctic species, adults and larvae).

castaneae Rohwer. N. Y., Pa., Md., Va., Ky. Host: *Castanea dentata*.

Croesus castaneae Rohwer, 1915. U. S. Natl. Mus., Proc. 49: 213. ♀, ♂.

Taxonomy: Middleton, 1922. U. S. Natl. Mus., Proc. 61: 14 (larva).

curvarius Smith. Conn. Host: *Corylus*.

Croesus curvarius Smith, 1972. Ent. Soc. Wash., Proc. 74: 175. ♀, larva.

latitarsus Norton. Que. to Fla. w. to Alaska, B. C., Utah. Host: *Betula*. Dusky birch sawfly.

Craesus(!) *latitarsus* Norton, 1862. Ent. Soc. Phila., Proc. 1: 199. ♀.

Biology: Jack, 1888. Psyche 5: 41. — Brown, 1940. Canad. Dept. Agr., Forest Ins. Survey 4th Ann. Rpt., p. 16. — Wong, 1946. Canad. Ent. Soc. 154.

varus (Villaret). Que. (Montreal); Europe. Introduced (?). Host: *Alnus*.

Nematus varus Villaret, 1832. Soc. Ent. France, Ann. 1: 306. ♂.

Taxonomy: Buckle, 1930. Canad. Ent. 62: 21 (record of only known specimen taken in N. Amer.).

Genus NEMATUS Panzer

Nematus Panzer, 1801. Faune Ins. German., heft 82, pl. 10.

Type-species: *Tenthredo* (*Nematus*) *lucida* Panzer. Monotypic.

Hypolaepus Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 324.

Type-species: *Hypolaepus abbotii* Kirby. Monotypic.

Holcocneme Konow, 1890. Deut. Ent. Ztschr., pp. 233, 238, 246.

Type-species: *Tenthredo crassa* Fallen. Desig. by Rohwer, 1911.

Pteronidea Rohwer, 1911. U. S. Dept. Agr. Bur. Ent. Tech. Ser. 20: 98.

Type-species: *Nematus ventralis* Say. Orig. desig.

A large holarctic genus associated with various trees and shrubs. The larvae are external leaf feeders.

Revision: Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 44-75, 87-90.

Taxonomy: Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 404-405 (holarctic species).

SPECIES GROUP ABBOTII

abbotii (Kirby). Ont. to Ga. w. to Wis., Ill. Host: *Robinia*.

Hypolaepus abbotii Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 324. ♀.

crassus (Fallen). N. W. T. (Mackenzie River, Reindeer Depot); Eurasia. Host: *Betula*, *Populus*, *Salix*, *Rumex*. These hosts recorded in Europe.

Tenthredo crassa Fallen, 1808. Svenska Vetensk. Akad., Handl. 29: 106.

Nematus sulcipes Hartig, 1840. Stettin Ent. Ztg. 1: 23. ♀, ♂.

Nematus longispinis Kriechbaumer, 1885. Correspbl. Naturh. Ver. Regensburg 39: 13.

laticulus (Norton). N. Y. to N. C. w. to Wis., S. Dak., Ill.

Croesus laticulus Norton, 1869. Amer. Ent. Soc., Trans. 2: 368. ♀.

Nematus procidentius Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 245. ♂.

Amauronematus rufipes Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 78. ♂.

SPECIES GROUP VENTRALIS

chalcus (Marlatt). Mont., Alaska, B. C., Wash. Host: *Salix*(?), *Alnus*(?).

Amauronematus chalcus Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 84. ♀.

erratus (MacGillivray). Maine, Man., Alaska. Host: *Populus*.

Pteronidea erratus MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 170. ♀.

exactus (MacGillivray). Maine.

Pteronidea exactus MacGillivray, 1920. Canad. Ent. 52: 235. ♂.

Amauronematus vanus MacGillivray, 1921. N. Y. Ent. Soc., Jour. 29: 27. ♀.

Amauronematus venaticus MacGillivray, 1921. N. Y. Ent. Soc., Jour. 29: 29. ♂.

fulvicrus Provancher. Que. to N. Y. w. to Alta., Colo. Host: *Salix*, *Populus*(?).

Nematus fulvicrus Provancher, 1882. Nat. Canad. 13: 291. ♀.

Messa salicis Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 15. Preocc. in *Nematus* by Linnaeus, 1758.

Nematus salicicola Dalla Torre, 1894. Cat. Hym., v. 1, p. 257. N. name for *salicis* Ashmead.

Pteronidea evanida MacGillivray, 1920. Canad. Ent. 52: 233. ♀, ♂.

- hudsoniimagnus** Dyar. Maine to N. J. w. to Alaska, Man., Ill., Tex. Host: *Populus*.
Nematus Hudsonii magnus Dyar, 1895. Amer. Ent. Soc., Trans. 23: 306. ♀, larva. This name is available under Article 26(A) of the Internatl. Code Zool. Nomencl.
Pteronus populi Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 59. ♀.
Pteronus hudsonii Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 59. ♀. Emend.
Pteronus lombardae Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 73. ♂.
Pteronidea edura MacGillivray, 1920. Canad. Ent. 52: 233. ♀.
Pteronidea effusa MacGillivray, 1920. Canad. Ent. 52: 233. ♀.
Pteronidea effeta MacGillivray, 1920. Canad. Ent. 52: 234. ♀.
Pteronidea emerita MacGillivray, 1920. Canad. Ent. 52: 234. ♀.
Pteronidea erudita MacGillivray, 1920. Canad. Ent. 52: 234. ♀.
- iridescent** Cresson. Mont., Wyo., Utah w. to B. C., Wash., Oreg., Calif.; Mexico. Host: *Salix*.
Nematus iridescent Cresson, 1880. Amer. Ent. Soc., Trans. 8: 5. ♂.
Pteronus occidentalis Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 48. ♀. N. syn.
- limbatus** Cresson. N. B., Que. to Pa. w. to Sask., Ohio. Host: *Salix*, *Populus*.
Nematus limbatus Cresson, 1880. Amer. Ent. Soc., Trans. 8: 8. ♀.
Pteronus harringtoni Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 53. ♀, ♂.
Pteronus fylesi Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 54. ♀, ♂.
- ventralis** Say. Que. to N. C. w. to Alta., Mont., Colo. Host: *Salix*. Willow sawfly.
Nematus ventralis Say, 1824. In Keating, Narr. Long's 2nd Exped., v. 2 (App.), p. 315. ♀.
Nematus suratus Fitch, 1856. N. Y. Agr. Soc., Trans. 3: 315. ♀.
Pteronus latus Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 48. ♀. Preocc. by
Nematus latus Cresson, 1880.
Hypolaepus viereckii Bradley, 1903. Canad. Ent. 35: 47. ♀.
Pteronidea edita MacGillivray, 1920. Canad. Ent. 52: 235. ♂.
- Biology: Howard, 1888. U. S. Dept. Agr., Insect Life 1: 33-37. —Rohwer, 1915. Ent. Soc. Wash., Proc. 17: 197 (mating habits).
- Morphology: Judd, 1955. Ont. Ent. Soc., 85th Ann. Rpt. 1954, p. 32 (anatomy and histology of digestive tract of larva).

SPECIES GROUP ATRICEPS

- atriceps** (Marlatt). Wis., Colo., Utah w. to B. C., Wash., Oreg., Calif.
Pteronus atriceps Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 52. ♀.
Pteronus californicus Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 60. ♀. N. syn.
- auratus** (Marlatt). Wash., Oreg., Calif.
Pteronus auratus Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 60. ♀.
Amauronematus coquilletti Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 84. ♀.
 N. syn.
- coloradensis** (Marlatt). Alta., Mich., N. Dak., Ariz. w. to Oreg., Calif.
Pteronus coloradensis Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 52. ♀, ♂.

SPECIES GROUP ERYTHROGASTER

- carpini** (Marlatt). Conn., N. Y., N. J., Fla. Host: *Carpinus*.
Pteronus carpini Marlatt, 1898. Canad. Ent. 30: 303. ♀.
- corylus** Cresson. Mass. to Md. w. to Mich., Ill. Host: *Corylus*.
Nematus corylus Cresson, 1880. Amer. Ent. Soc., Trans. 8: 8. ♀.
Pteronus coryli Konow, 1905. In Wytsman, Gen. Ins., v. 29, p. 55. Emend.
- erythrogaster** Norton. Que. to Fla. w. to Minn., Ill. Host: *Alnus*.
Nematus erythrogaster Norton, 1865. Ent. Soc. Phila., Proc. 4: 8. ♀.
Pteronus dyari Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 58. ♀, ♂.
Pteronidea pulchella Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 279. ♀.
Pteronidea alnivora Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 213. ♀, ♂.

Taxonomy: Middleton, 1922. U. S. Natl. Mus., Proc. 61: 22 (larva).

- latifasciatus** Cresson. N. B. to Pa. w. to Ont., Mich. Host: *Betula*.
Nematus latifasciatus Cresson, 1880. Amer. Ent. Soc., Trans. 8: 7. ♀.
Nematus rufocinctus Harrington, 1893. Canad. Ent. 25: 58. ♀. N. syn.

SPECIES GROUP MAGNUS

magnus (Marlatt). Que., Maine. Host: *Salix*.

Pteronius magnus Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 67. ♀.

SPECIES GROUP OLIGOSPILUS

attus Smith, n. name. Que., Maine to N. Y. and Mich. Host: *Populus*.

Amauronematus dyari Marlatt, 1896 (October). Canad. Ent. 28: 255. ♀, ♂. Preocc. by

Pteronidea dyari Marlatt, 1896 (February), U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 58.

costillensis (Rohwer). Colo.

Pteronius costillensis Rohwer, 1908. N. Y. Ent. Soc., Jour. 16: 106. ♀.

effrenatus (MacGillivray). Alaska.

Pteronidea effrenatus MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 171. ♀.

excavatus (Marlatt), n. comb. No. Amer., locality unknown.

Amauronematus excavatus Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 85. ♀.

excessus (MacGillivray). Alaska.

Pteronidea excessus MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 170. ♀.

currani Ross. B. C., Oreg. Host: *Populus*.

Pteronidea nigriventris Curran, 1926. Canad. Ent. 58: 233. ♀, ♂. Preocc. in *Nematus* by Holmgren, 1883.

Nematus currani Ross, 1951. In Muesebeck, et al., U. S. Dept. Agr., Agr. Monog. 2: 45. N. name.

hypomelas (Rohwer). Colo.

Pteronius hypomelas Rohwer, 1908. Canad. Ent. 40: 48. ♀.

kukukiana (Kincaid), n. comb. Alaska.

Pontania kukukiana Kincaid, 1900. Wash. Acad. Sci., Proc. 2: 356. ♀.

lipovskiyi Smith. Maine, N. H., Mass., N. J., Pa., Md., Va., Ala. Host: *Azalea*.

Nematus lipovskiyi Smith, 1974. Ent. Soc. Wash., Proc. 76: 205-206. ♀.

notatus (Rohwer). Colo.

Pteronius notatus Rohwer, 1908. Canad. Ent. 40: 49. ♀.

oligospilus Foerster. Que. to Alaska s. to Va., Ind., Kans., Colo., Calif.; Mexico; Europe to Himalayas. Ecology: Widespread. Host: *Salix*.

Nematus oligospilus Foerster, 1854. Naturh. Ver. Rheinlande, Verh. 11: 284. ♀.

Nematus mendicus Walsh, 1866. Ent. Soc. Phila., Proc. 6: 261. ♀.

Nematus trivittatus Norton, 1867. Amer. Ent. Soc., Trans. 1: 218. ♀.

Nematus dorsivittatus Cresson, 1880. Amer. Ent. Soc., Trans. 8: 10. ♀.

Nematus salicivorus Cameron, 1882. Ent. Monthly Mag. 18: 194.

Nematus sylvestris Cameron, 1884. Ent. Monthly Mag. 20: 266.

Pteronius koebele Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 71. ♀.

Pteronidea vanduzeei Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 280. ♀.

Pteronidea elelea MacGillivray, 1923. Canad. Ent. 55: 162. ♀.

pinguidorsum Dyar. Maine to N. Y. w. to Sask., N. Dak. Host: *Betula*.

Nematus pinguidorsum Dyar, 1895. Amer. Ent. Soc., Trans. 22: 303. Larva.

Amauronematus vacivus MacGillivray, 1921. N. Y. Ent. Soc., Jour. 29: 28. ♂. N. syn.

Biology: Wong, 1954. Canad. Ent. 86: 154.

reticulatus Holmgren. Labrador to Alaska s. to N. H., Man.; Europe to Siberia. Ecology: Widespread. Host: *Vaccinium*.

Nematus reticulatus Holmgren, 1883. Ent. Tidskr. 4: 143. ♀.

Nematus marionellus Holmgren, 1883. Ent. Tidskr. 4: 144.

Nematus occipitalis Holmgren, 1883. Ent. Tidskr. 4: 144.

Nematus anceps Holmgren, 1883. Ent. Tidskr. 4: 145.

Nematus mysticus Holmgren, 1883. Ent. Tidskr. 4: 145.

Nematus parvulus Holmgren, 1883. Ent. Tidskr. 4: 146.

Nematus picticollis Holmgren, 1883. Ent. Tidskr. 4: 147.

Nematus lientericus Holmgren, 1883. Ent. Tidskr. 4: 146.

Pontania popofiana Kincaid, 1900. Wash. Acad. Sci., Proc. 2: 353. ♀, ♂.

Pontania glinka Kincaid, 1900. Wash. Acad. Sci., Proc. 2: 355. ♀, ♂.

- Pontania tenuitarsis* Konow, 1901. Ztschr. System. Hym. Dipt. 1: 130.
Pontania poppii Konow, 1904. Ztschr. System. Hym. Dipt. 4: 230.
Pontania forsiusi Enslin, 1915. Deut. Ent. Ztschr., Beih., p. 354.
Amauronematus alberich Benson, 1934. Ann. and Mag. Nat. Hist. 14: 208.
Pteronidea nubium Benson, 1935. Ent. Soc. London, Trans. 83: 30.
Amauronematus alsius Benson, 1935. Ent. Soc. London, Trans. 83: 32.
Pteronidea leptostigma Lindqvist, 1957. Notulae Ent. 37: 111.
Pteronidea nigrita Lindqvist, 1957. Notulae Ent. 37: 113.
Pteronidea wolteri Lindqvist, 1957. Notulae Ent. 37: 115. ♀.
Pteronidea roberti Lindqvist, 1957. Notulae Ent. 37: 117.
Pteronidea lindbergi Lindqvist, 1957. Notulae Ent. 37: 105.
Pteronidea rutilipes Lindqvist, 1959. Notulae Ent. 39: 59. ♀.
Pteronidea sulcipectus Lindqvist, 1959. Notulae Ent. 39: 57. ♀.
Pteronidea aspera Lindqvist, 1959. Notulae Ent. 39: 58. ♀.
Pteronidea thunbergi Lindqvist, 1959. Notulae Ent. 39: 58.

Taxonomy: Benson, 1961. Resultats des recherches scientifiques entreprises au Parc National Suisse, Band VII, pp. 192-193.

subpallidus (MacGillivray), n. comb. N. W. T.

Pontania subpallida MacGillivray, 1919. Rpt. Canad. Arctic Exped. 1913-1918, v. 3G, p. 11G. ♀.

tibialis Newman. Ont., Maine to Fla. w. to Minn., Kans., Colo., Ark., Ariz.; Wash., Oreg.;

Europe. Host: *Robinia pseudacacia*, *Gleditsia triacanthos*. Introduced with host into Europe.

Nematus tibialis Newman, 1837. Ent. Mag. 4: 260. ♀.

Nematus trilineatus Norton, 1867. Amer. Ent. Soc., Trans. 1: 215. ♀.

Nematus similis Norton, 1880. U. S. Dept. Agr., Ann. Rpt. for 1879, p. 224. ♀.

Nematus robiniae Forbes, 1885. State Ent. Ill. Rpt. 14: 116. ♀.

Pteronius solitarius Rohwer, 1908. N. Y. Ent. Soc., Jour. 16: 107. ♀.

vancouverensis (Marlatt). Maine to Alaska s. to Pa., Iowa, Colo., Ariz., Calif. Ecology:

Widespread. Host: *Populus*.

Pteronius vancouverensis Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 70. ♀, ♂.

Amauronematus californicus Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 85. ♀.

Preocc. by *Pteronius californicus* Marlatt, p. 60 of same publication. N. syn.

Pachynematus vernalis Rohwer, 1909. Canad. Ent. 41: 18. ♀. N. syn.

Pteronius wrighti Rohwer, 1911. Ent. Soc. Wash., Proc. 13: 31. N. name for

Amauronematus californicus Marlatt.

Amauronematus valerius MacGillivray, 1923. Ill. Univ. Bul. 20(50): 6. ♂. N. syn.

Biology: Brown, Eads, and Clark, 1969. Jour. Econ. Ent. 62: 672 (*Nematus* sp.).

villosus Thomson. N. W. T.; Europe.

Nematus villosus Thomson, 1862. Ofvers. Svensk. Vetensk. Akad., Forh. 19: 629. ♀.

viridescens Cameron. Maine, Ont., N. Y., Man., Sask., Alaska; Europe. Host: *Betula*.

Nematus viridescens Cameron, 1885. Monog. Brit. Phytophagous Hym., v. 2, p. 122.

Pteronius hyalinus Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 67. ♀. N. syn.

Biology: Wong, 1954. Canad. Ent. 86: 158 (*hyalinus*).

zebratus (Kincaid). Alaska.

Pteronius zebratus Kincaid, 1900. Wash. Acad. Sci., Proc. 2: 357. ♀.

SPECIES GROUP RIBESII

cockerelli (Rohwer). Colo.

Pteronius cockerelli Rohwer, 1909. Canad. Ent. 41: 88. ♀.

edwardsii Cresson. Calif.

Nematus edwardsii Cresson, 1880. Amer. Ent. Soc., Trans. 8: 7. ♀.

equina (MacGillivray). Maine.

Pteronidea equina MacGillivray, 1920. Canad. Ent. 52: 235. ♀.

foveatus (Marlatt). Wash., Oreg.

Pteronius foveatus Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 55. ♀.

- Pteronidea electra* MacGillivray, 1923. Ill. Univ. Bul. 20(50): 30. ♀.
- jugicola** Thomson. Man. (Churchill); Europe. Host: *Salix*.
Nematus jugicola Thomson, 1871. Hym. Scand., v. 1, p. 146. ♀.
- marlattii** Dyar. N. H. Host: *Abies*.
Nematus Marlattii Dyar, 1895. Amer. Ent. Soc., Trans. 22: 305. ♀, larva.
- nigropectus** Cresson. Wash., Oreg., Nev.
Nematus nigropectus Cresson, 1880. Amer. Ent. Soc., Trans. 8: 6. ♀.
Pteronus bicolor Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 56. ♀.
 Questionable synonym.
- ostryae** (Marlatt). N. J. to Va. Host: *Ostrya*.
Pteronus ostryae Marlatt, 1896. Canad. Ent. 28: 252. ♀.
- ribesii** (Scopoli). Que., Ont. to Wash. s. to D. C., Ohio, Ill., Mo., Kans., Colo., Oreg.; Europe to Caucasus. Ecology: Widespread. Introduced. Host: *Ribes*. Imported currantworm.
Tenthredo ribesii Scopoli, 1763. Ent. Carn., p. 280.
Tenthredo ventricosa Latreille, 1805. Hist. Nat. Crust. Ins., v. 13, p. 131.
Tenthredo salicis Fallen, 1808. Svenska Vetensk. Akad., Handl. 29: 118. ♀.
Nematus dimidiata Lepeletier, 1823. Monog. Tenthred., p. 68. ♀.
Nematus trimaculata Lepeletier, 1823. Monog. Tenthred., p. 69. ♀.
Nematus grossulariae Moore, 1831. Lit. and Phil. Soc. Manchester, Mem. 2: 114-134.
Nematus depressa Hartig, 1840. Stettin Ent. Ztg. 1: 24. ♀.
Nematus macrocera Hartig, 1840. Stettin Ent. Ztg. 1: 25. ♂.
Nematus ribis Dufour, 1847. Soc. Ent. France, Ann. 2: 571-581. ♀, ♂.
Pteronus longicornis Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 72. ♂. Preocc.
 by *Nematus longicornis* Eschscholtz, 1822.
Pteronus araphanum Cockerell, 1906. Ent. News 17: 220. ♂.
Pteronidea ribesii var. *feminina* Enslein, 1916. Deut. Ent. Ztschr., Beih., p. 419.
Pteronidea ribesii var. *konowi* Enslein, 1916. Deut. Ent. Ztschr., Beih., p. 420.
Pteronidea aceris Rohwer, 1915. U. S. Natl. Mus., Proc. 49: 211. ♀.
Pteronidea equatua MacGillivray, 1923. Ill. Univ. Bul. 20(50): 30. ♂.
- Biology: Caesar and Garlick, 1920. Canad. Ent. 52: 106-108. — Kemner, 1924. Centralanst. for Forsoksv. pa Jordbruksomradet Meddel. 43: 1-33 (in Sweden). — Miles, 1932. Bul. Ent. Res. 23: 1-6. — Walden, 1933. Conn. Agr. Expt. Sta., Bul. 346: 416-427. — Rautapaa, 1970. Ann. Ent. Fenn. 36: 118-120 (feeding deterrents, host preference).
- Morphology: Middleton, 1921. Ent. Soc. Wash., Proc. 23: 173 (terminal abdominal structures). — Snodgrass, 1928. Smith. Misc. Coll. 81: 121. — Shafiq, 1954. Jour. Microscopical Sci. 95: 93-114 (embryonic development).
- salicisodoratus** Dyar. Maine to Va. w. to Wis., Ill., Ark. Host: *Salix*, *Populus*.
Nematus salicis-odoratus Dyar, 1894. Canad. Ent. 26: 187. ♀, ♂, larva.
Pteronus odoratus Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 65. Emend.
Pteronus cornelli Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 65. ♀, ♂.
Pteronidea winnanae Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 386. ♂.
Pteronidea mendicana Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 214. ♀.
Pteronidea plesia Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 216. ♀.
Pontania dotata MacGillivray, 1921. N. Y. Ent. Soc., Jour. 21: 34. ♂.
- Taxonomy: Middleton, 1922. U. S. Natl. Mus., Proc. 51: 21 (larva of *plesia*).
- Biology: Warren, 1957. Kans. Ent. Soc., Jour. 30: 11.
- superbus** (Provancher). Que., N. H.
Eriocampa superba Provancher, 1885. Addit. Corr. Faune Ent. Canada, Hym., p. 351. ♀.
Pteronus antennatus Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 61. ♀.
- tricolor** (Marlatt). N. H.
Pteronus tricolor Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 56. ♀.
- umbratus** Thomson. Ont., Que., Wash. (?), Oreg. (?); Europe. Host: *Abies*, *Betula*.
Nematus umbratus Thomson, 1871. Hym. Scand., v. 1, p. 142. ♀.
Nematus collinus Cameron, 1882. Ent. Soc. London, Trans., p. 534. ♀.

unicolor (Marlatt). Calif.

Pteronius unicolor Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 72. ♀.

UNPLACED TAXA OF NEMATUS PANZER

integer Say. Ind.

Tenthredo (Nematus) integra Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., p. 583. Nom. nud.

Nematus integer Say, 1836. Boston Jour. Nat. Hist. 1: 218. ♀.

minutus (Marlatt). Wash. (Olympia).

Pachynematus minutus Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 110. ♂.

nigristigma (Provancher). Que.

Emphytus nigristigma Provancher, 1888. Addit. Corr. Faune Ent. Canada, Hym., p. 348. ♀.

obscurus Norton. Mass.

Nematus obscurus Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 160. ♀.

pacificus (Marlatt). Wash. (Olympia).

Pteronius pacificus Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 49. ♀.

semirufus Kirby. Mass.

Tenthredo (Nematus) fulvipes Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., p. 583. Nom. nud.

Nematus fulvipes Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 159. ♀. Preocc. by Fallen, 1808.

Nematus semirufus Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 148. N. name for *fulvipes* Norton.

Nematus flavipes (!) Smith, 1966. Ent. Soc. Wash., Proc. 68: 248.

tetraopsis Provancher. Calif.

Nematus tetraopsis Provancher, 1895. Nat. Canad. 22: 79. ♀.

wrangeli (Marlatt). Alaska.

Pachynematus wrangeli Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 109. ♂.

Pteronius rivularis Kincaid, 1900. Wash. Acad. Sci., Proc. 2: 358. ♂.

Genus PONTANIA Costa

Pontania Costa, 1859. Fauna del Regno di Napoli, Imen., pt. 3, p. 20.

Type-species: *Nematus gallicola* Stephens. Desig. by Marlatt, 1896.

Larvae of this large, holarctic genus form closed, pea-shaped or bean-shaped galls on the leaves of *Salix* or *Populus*. This genus is in need of revision, and the following is primarily a list of the described species and their type localities except for the work by Benson (1960). Though Benson (1960) established species groups, many of the North American forms have not been studied adequately to permit such an arrangement.

Revision: Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 20-43.

Taxonomy: Benson, 1960. Brit. Mus. (Nat. Hist.) Ent., Bul. 8: 369-384. — Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 403-404 (holarctic species).

Biology: Smith, 1970. Ent. Soc. Amer., Ann. 63: 36-51.

Morphology: Smith, 1968. Ent. Soc. Amer., Ann. 61: 1389-1407.

agilis (Cresson). Nev.

Nematus agilis Cresson, 1880. Amer. Ent. Soc., Trans. 8: 9. ♂.

arctica (MacGillivray). N. W. T., Yukon, Alaska, Man. Ecology: Forms leaf galls. Host: *Salix reticulata*.

Eucura arctica MacGillivray, 1919. Rpt. Canad. Arctic Exped. 1913-1918, v. 3G, p. 5G. ♀.

Eucura arbortiva MacGillivray, 1919. Rpt. Canad. Arctic Exped. 1913-1918, v. 3G, p. 4G. ♀.

Pontania delicatula MacGillivray, 1919. Rpt. Canad. Arctic Exped. 1913-1918, v. 3G, p. 8G. ♂.

Pontania deminuta MacGillivray, 1919. Rpt. Canad. Arctic Exped. 1913-1918, v. 3G, p. 9G. ♀.

- Taxonomy: Benson, 1960. Brit. Mus. (Nat. Hist.) Ent., Bul. 8: 377. — Vikberg, 1970. Ann. Ent. Fenn. 36: 19 (not holarctic).
- arctophilae** Benson. Man. (Churchill). Ecology: Ovipositing on *Salix arctophila*.
Pontania arctophilae Benson, 1960. Brit. Mus. (Nat. Hist.) Ent., Bul. 8: 373. ♀.
- atriventris** Marlatt. Oreg. (Mt. Hood).
Pontania atriventris Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 38. ♀.
- beckettiae** Benson. Man. (Churchill). Ecology: Produces pea-shaped galls attached to midvein on underside of leaves. Host: *Salix planifolia*, *S. discolor*, *S. glauca*, *S. reticulata*.
Pontania beckettiae Benson, 1960. Brit. Mus. (Nat. Hist.) Ent., Bul. 8: 378. ♀, gall.
- borealis** Marlatt. N. Y. Ecology: Produces galls. Host: *Salix sericea*.
Pontania borealis Marlatt, 1898. Canad. Ent. 30: 302. ♀.
- brachycarpae** Rohwer. Colo. Ecology: Adult collected from *Salix brachycarpae*.
Pontania brachycarpae Rohwer, 1908. Canad. Ent. 40: 46. ♀.
- bruneri** Marlatt. Wyo. (Robinson's Ranch). Ecology: Produces leaf galls. Host: *Salix longifolia*.
Pontania bruneri Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 35. ♀, gall.
- californica** Marlatt. Calif. Ecology: Produces a leaf gall. Host: *Salix*.
Pontania californica Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 38. ♀, ♂, gall.
- consors** Marlatt. N. Y. Ecology: Produces leaf galls. Host: *Salix sericea*.
Pontania consors Marlatt, 1898. Canad. Ent. 30: 302. ♀, ♂.
- crassicornis** Rohwer. Ont. Ecology: Produces galls. Host: *Salix humilis*.
Pontania crassicornis Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 241. ♂.
- crassipes** (Thomson). N. W. T., Yukon, Man., Alaska; n. Europe, Switzerland. Ecology: In Europe, makes pea-shaped galls on main vein usually on underside of leaves. Host: *Salix herbacea*, *S. polaris*, *S. arctica*, *S. retusa*, *S. arbuscula*, *S. myrsinites*, *S. lapponum*, *S. reticulata*.
Nematus crassipes Thomson, 1871. Hym. Scand., v. 1, p. 162. ♀.
Nematus herbaceae Cameron, 1875. Glasgow Nat. Hist. Soc., Proc. 2: 304.
Pontania ora Kineaid, 1900. Wash. Acad. Sci., Proc. 2: 354. ♀.
Pontania atrata MacGillivray, 1919. Rpt. Canad. Arctic Exped. 1913-1918, v. 3G, p. 6G. ♂.
Pontania lorata MacGillivray, 1919. Rpt. Canad. Arctic Exped. 1913-1918, v. 3G, p. 8G. ♂.
Pontania polaris Malaise, 1920. Ent. Tidskr. 40: 112.
Pontania enslini Zirngiebl, 1937. Festschr. zum 60 Geburtstag von Prof. Dr. Embrik Strand 3: 337.
Pontania arbusculae Benson, 1941. Ent. Soc. London, Proc. 10: 134.
Pontania algida Benson, 1941. Ent. Soc. London, Proc. 10: 134.
Pontania aquilonis Benson, 1941. Ent. Soc. London, Proc. 10: 135.
- Taxonomy: Benson, 1960. Brit. Mus. (Nat. Hist.) Ent., Bul. 8: 379.
- Biology: Vikberg, 1970. Ann. Ent. Fenn. 36: 18 (in Finland).
- daedalus** MacGillivray. N. Y.
Pontania daedalus MacGillivray, 1921. N. Y. Ent. Soc., Jour. 29: 33. ♀.
- dedecora** MacGillivray. N. Y.
Pontania dedecora MacGillivray, 1921. N. Y. Ent. Soc., Jour. 29: 32. ♀.
- demissa** MacGillivray. N. Y.
Pontania demissa MacGillivray, 1921. N. Y. Ent. Soc., Jour. 29: 33. ♀.
- derosa** MacGillivray. N. Y.
Pontania derosa MacGillivray, 1921. N. Y. Ent. Soc., Jour. 29: 34. ♀.
- devincta** MacGillivray. Maine.
Pontania devincta MacGillivray, 1921. N. Y. Ent. Soc., Jour. 29: 34. ♀, ♂.
- dolichura** (Thomson). Man. (Churchill); n. Europe, Austria, Switzerland. Ecology: Produces Galls. Host: *Salix planifolia*, *S. purpurea*, *S. phylicifolia*, *S. nigricans*, *S. arbuscula*, *S. lapponum*, *S. myrsinites*, *S. lanata*, *S. glabra*, *S. incana*, *S. retusa*, *S. sachalinensis*. These hosts were recorded in Europe, except for *S. planifolia* which was recorded in Canada.
Nematus dolichurus Thomson, 1871. Hym. Scand., v. 1, p. 164. ♀, ♂.

Nematus femoralis Cameron, 1875. Glasgow Nat. Hist. Soc., Proc. 2: 295.

Pontania robbinsi Benson, 1935. Ent. Soc. London, Trans. 83: 26.

Taxonomy: Benson, 1960. Brit. Mus. (Nat. Hist.) Ent., Bul. 8: 380.

Biology: Vikberg, 1970. Ann. Ent. Fenn. 36: 13 (in Finland).

dubius (Marlatt). Mass.

Pteronus dubius Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 74. ♂.

gracilis Marlatt. Va. Ecology: Produces a leaf gall. Host: *Salix*.

Pontania gracilis Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 39. ♀, gall.

hoppingi (Ross). B. C., Wash. Ecology: Produces a leaf gall. Host: *Salix*.

Pteronus kincaidi Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 55. ♀, ♂. Preocc. by *Pontania kincaidi* Marlatt, p. 33.

Euura hoppingi Ross, 1937. Ill. Biol. Monog. 15(2): 88. N. name.

kincaidi Marlatt. Wash. (Olympia).

Pontania kincaidi Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 33. ♀.

lucidae Rohwer. Ont. Ecology: Produces galls. Host: *Salix lucida*.

Pontania lucidae Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 242. ♀, ♂.

monile Marlatt. Utah (American Fork Canyon). Ecology: Produces leaf galls. Host: *Salix*.

Pontania monile Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 43. gall, larva.

myrtillofoliae Benson. Man. (Churchill). Host: *Salix myrtillofolia*.

Pontania myrtillofoliae Benson, 1960. Brit. Mus. (Nat. Hist.) Ent., Bul. 8: 372. ♀.

pacifica Marlatt. Calif. Ecology: Produces a leaf gall. Host: *Salix lasiolepis*.

Pontania pacifica Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 35. ♀.

Biology: Caltagirone, 1964. Ent. Soc. Amer., Ann. 57: 279-291.

peninsularis Kincaid. Alaska.

Pontania peninsularis Kincaid, 1900. Wash. Acad. Sci., Proc. 2: 354. ♀.

petiolaridis Rohwer. Ont. Ecology: Produces a leaf gall. Host: *Salix petiolaris*.

Pontania petiolaridis Rohwer, 1917. In Cosens, Ont. Ent. Soc., Ann. Rpt. 47: 18-19. ♀, ♂.

Pontania petiolaris Felt, 1917. N. Y. State Mus., Bul. 200: 34.

placenta (Norton). Labrador.

Nematus placentus Norton, 1867. Amer. Ent. Soc., Trans. 1: 213. ♀, ♂.

proxima (Lepeletier). Maine, Ont., N. Y.; Europe. Ecology: Produces reddish leaf galls in rows on each side of midrib. Probably introduced with host. Host: *Salix fragilis*, *S. alba*.

Willow redgall sawfly.

Nematus proximus Lepeletier, 1823. Monog. Tenthred., p. 67. ♀.

Nematus gallicola Stephens, 1835. Illus. Brit. Ent., v. 7, p. 36.

Messa hyalina Norton, 1864. Ent. Soc. Phila., Proc. 4: 8. ♀.

Hoplocampa gallicola Cameron, 1877. Ent. Monthly Mag. 14: 156.

Euura flavipes Cameron, 1885. Monog. Brit. Phytophagous Hym., v. 2, p. 211.

Biology: Carleton, 1939 Linn. Soc. London, Jour. 40: 575-624.

pumila Rohwer. N. B.

Pontania pumila Rohwer, 1910. U. S. Natl. Mus., Proc. 38: 198. ♀, ♂.

pyriformis Marlatt. Calif. (Placer Co.). Ecology: Produces a leaf gall. Host: *Salix californica* (?).

Pontania pyriformis Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 43. gall, larva.

resinicola Marlatt. Calif. (Los Angeles). Ecology: Produces leaf galls. Host: *Salix californica*.

Pontania resinicola Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 30. ♀, ♂, gall.

rugulosa Marlatt. Mich. Ecology: "reared (?) from willow gall."

Pontania rugulosa Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 41. ♂.

s-desmodioides (Walsh). Ill. Ecology: Produces a leaf gall. Host: *Salix humilis*.

Nematus s. desmodioides Walsh, 1866. Ent. Soc. Phila., Proc. 6: 257. ♀, ♂, gall, larva.

Nematus salicis-desmodioides Dalla Torre, 1894. Cat. Hym., v. 1, p. 259. Emend.

s-pisum (Walsh). Ill. Ecology: Produces a leaf gall. Host: *Salix discolor*.

Nematus s. pisum Walsh, 1866. Ent. Soc. Phila., Proc. 6: 258. ♀, ♂, gall, larva.

Nematus salicis-pisum Thomas, 1881. State Ent. Ill. Rpt. 10: 68. gall, larva.

s-pomum (Walsh). Ill. Ecology: Produces a leaf gall. Host: *Salix*.

Nematus s. pomum Walsh, 1866. Ent. Soc. Phila., Proc. 6: 255. ♀, ♂, gall, larva.

Nematus hospes Walsh, 1866. Ent. Soc. Phila., Proc. 6: 261. ♀, ♂.

Nematus salicis-pomum Thomas, 1881. State Ent. Ill. Rpt. 10: 68. gall, larva.

Pontania pomum Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 36. Emend.

stigmatalis Marlatt. Oreg. (Mt. Hood).

Pontania stigmatalis Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 39. ♀.

subatrata MacGillivray. Alaska.

Pontania subatrata MacGillivray, 1921. Calif. Acad. Sci., Proc. (ser. 4) 11: 189. ♂.

sublorata MacGillivray. Alaska.

Pontania sublorata MacGillivray, 1921. Calif. Acad. Sci., Proc. (ser. 4) 11: 190. ♂.

sulphurea Marlatt. Mont., Nev.

Pontania sulphurea Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 41. ♀, ♂.

truncata Marlatt. Calif.

Pontania truncata Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 38. ♀.

Genus PHYLLOCOLPA Benson

Phyllocolpa Benson, 1960. Ent. Monthly Mag. 96: 60.

Type-species: *Nematus leucapsis* Tischbein. Orig. desig.

Larvae of this holarctic genus live in rolled leaves or rolled leaf edges of *Salix* or *Populus*. This genus is in need of study. The following is mostly a list of described species with their type localities without regard to possible synonymy. Benson (1960) established two species groups.

Revision: Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 24-30 (*Pontania*, Group I).

—Ross, 1929. Ent. Soc. Wash., Proc. 31: 91-97 (Marlatt's Group I of *Pontania*).

Taxonomy: Benson, 1960. Brit. Mus. (Nat. Hist.) Ent., Bul. 8: 380-381 (section A of

Pontania). —Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 403 (holarctic species).

Biology: Smith, 1970. Ent. Soc. Amer., Ann. 63: 36-51.

Morphology: Smith, 1968. Ent. Soc. Amer., Ann. 61: 1389-1407.

acuminata (Marlatt). Mich.

Pontania acuminata Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 32. ♀.

acutiserra (Lindqvist). Man. (Churchill); Lapland, Scotland. Host: *Salix*.

Pontania acutiserra Lindqvist, 1949. Notulae Ent. 28: 66. ♀, ♂.

Biology: Vikberg, 1970. Ann. Ent. Fenn. 36: 11 (in Finland).

agama (Rohwer). Calif.

Pontania agama Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 242. ♀.

Pontania foveata Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 243. ♀.

bozemani (Cooley). Sask., Alta., Mont. Host: *Populus*. Poplar leaf-folding sawfly.

Pontania bozemani Cooley, 1903. Canad. Ent. 35: 197. ♀, ♂.

Biology: Cooley, 1903. Mont. Agr. Expt. Sta. Bul. 46: 113-118.

coriacea (Benson). Alta. (Lake Louise); Scandinavia, Switzerland. Host: *Salix*.

Nematus (*Pontania*) *coriacea* Benson, 1953. Ent. Monthly Mag. 89: 150. ♀, ♂.

Biology: Vikberg, 1970. Ann. Ent. Fenn. 36: 12 (in Finland).

cressoni (Marlatt). Wash.

Pontania cressoni Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 26. ♀.

excavata (Marlatt). Colo., Alaska, Calif.; Europe to Siberia. Ecology: Larva lives in rolled leaf edge. Host: *Salix petandra*.

Pontania excavata Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 30. ♀, ♂.

Pontania megacephala Rohwer, 1908. Canad. Ent. 40: 47. ♂.

Pontania dstricta MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 168. ♀.

Pontania apicifrons Malaise, 1932. Arkiv for Zool. 23A: 33. ♀, ♂.

Pontania carinifrons Benson, 1940. Ent. Monthly Mag. 76: 210. ♀, ♂.

Taxonomy: Benson, 1960. Ent. Monthly Mag. 96: 60.

- Biology: Vikberg, 1970. Ann. Ent. Fenn. 36: 11 (in Finland).
- leavitti** (Rohwer). N. B.
Pontania leavitti Rohwer, 1910. U. S. Natl. Mus., Proc. 38: 199. ♀.
- leucostoma** (Rohwer). Colo.
Pontania leucostoma Rohwer, 1908. Canad. Ent. 40: 45. ♂.
- mariana** (Ross). B. C. (Vancouver). Ecology: Larva makes a leaf fold. Host: *Populus balsamifera*.
Pontania mariana Ross, 1929. Ent. Soc. Wash., Proc. 31: 91. ♀, ♂, larva.
- marlatti** (Ross). Oreg.
Pontania marlatti Ross, 1929. Ent. Soc. Wash., Proc. 31: 93. ♀.
- melanosoma** (Rohwer). Colo.
Pontania melanosoma Rohwer, 1908. Canad. Ent. 40: 48.
- mellina** (Cresson). Nev.
Nematus mellinus Cresson, 1880. Amer. Ent. Soc., Trans. 8: 10. ♀.
- nevadensis** (Cresson). Nev.
Nematus nevadensis Cresson, 1880. Amer. Ent. Soc., Trans. 8: 9. ♀, ♂.
- nigripecta** (Rohwer), n. comb. Calif.
Pontania nevadensis var. *nigripecta* Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 243. ♀, ♂.
- nigrita** (Marlatt), n. comb. Mich.
Pontania nigrita Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 27. ♀.
- parva** (Cresson). Nev.
Nematus parvus Cresson, 1880. Amer. Ent. Soc., Trans. 8: 5. ♀.
- pectoralis** (Marlatt). Ill. (Algonquin).
Pontania pectoralis Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 31. ♀.
- pepii** (Ross). Mont. (Florence).
Pontania pepii Ross, 1929. Ent. Soc. Wash., Proc. 31: 96. ♀.
- popuella** (Ross). Man., S. Dak. Ecology: Larva makes a leaf fold. Host: *Populus deltoides*.
Pontania popuella Ross, 1929. Ent. Soc. Wash., Proc. 21: 93. ♀, ♂.
- populi** (Marlatt). Mass., Conn., Ont., N. J. Host: *Populus*.
Pontania populi Marlatt, 1896. Canad. Ent. 28: 253. ♀.
- robusta** (Marlatt). D. C. (?), Mich.
Pontania robusta Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 32. ♀, ♂.
- stipata** (MacGillivray), n. comb. Alaska.
Pontania stipata MacGillivray, 1921. Calif. Acad. Sci., Proc. (ser. 4) 9: 188.
- terminalis** (Marlatt). N. Y. Host: *Salix*.
Pontania terminalis Marlatt, 1896. Canad. Ent. 28: 253. ♀, ♂.
- tundra** (Kincaid). Alaska.
Pontania tundra Kincaid, 1900. Wash. Acad. Sci., Proc. 2: 352. ♀, ♂.
- utensis** (Rohwer), n. comb. Colo.
Pontania utensis Rohwer, 1908. N. Y. Ent. Soc., Jour. 16: 107. ♀.

Genus EUURA Newman

Two subgenera have been proposed, *Euura* for those species whose larvae form stem, twig, or petiole galls on *Salix*, and *Gemmura* for those species whose larvae form bud galls on *Salix*. This genus is in need of study. The following is primarily a list of described species with their type localities without regard to possible synonymy. According to Smith (1968) conventional use of morphological characters for species separation is impossible in this group and identification may have to be based on specific host data and biological information; therefore, the exact identity of many of the described species may never be known.

Revision: Rohwer, 1909. N. Y. Ent. Soc., Jour. 17: 7-25.

Taxonomy: Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 402-403 (holarctic species).

—Smith, 1968. Ent. Soc. Amer., Ann. 61: 1389-1407 (Calif. species).

Biology: Smith, 1968. Ent. Soc. Amer., Ann. 61: 1389-1407. —Smith, 1970. Ent. Soc. Amer., Ann. 63: 36-51.

Morphology: Smith, 1968. Ent. Soc. Amer., Ann. 61: 1389-1407. —Smith, 1972. Int. Jour. Ins. Morph. and Embryol. v. 1, 1: 321-365 (external genitalia of *Euura*).

Genus EUURA Subgenus EUURA Newman

Euura Newman, 1837(January). Ent. Mag. 4: 259.

Type-species: *Euura gallae* Newman. Desig. by Rohwer, 1911.

Nematus subg. *Cryptocampus* Hartig, 1837(March). Fam. Blattwespen und Holzwespen, nebst Einleitung Naturgesch. Hym., p. 221.

Type-species: *Nematus (Cryptocampus) medullaris* Hartig. Desig. by Rohwer, 1911.

albiricta Cresson. Nev.

Euura albiricta Cresson, 1880. Amer. Ent. Soc., Trans. 8: 4. ♀.

atra (Jurine). N. B., Que., Ont., Alta.; Europe. Ecology: Attacks many of the narrow-leaved willows. Host: *Salix repens*, *S. viminalis*, *S. fragilis*, *S. purpurea*, *S. babylonica*, *S. alba* var. *vitellina*.

Pteronus ater Jurine, 1807. Nouv. Meth. Class. Hym., p. 6, fig. 6b. ♀.

Cryptocampus angustus Hartig, 1837. Fam. Blattwespen und Holzwespen, nebst Einleitung Naturgesch. Hym., p. 222.

Euura nigra Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 346. ♀. Preocc. by Norton, 1867.

Biology: MacCall and Titus, 1972. Canada Dept. Environment, Forestry Service, Bi-Monthly Research Notes 28: 8.

bakeri (Rohwer). Calif. Ecology: Produces a stem gall. Host: *Salix*.

Cryptocampus bakeri Rohwer, 1910. Canad. Ent. 42: 51. ♀, ♂.

bebbianae (Rohwer). Colo. Ecology: Produces a stem gall. Host: *Salix* ? *bebbiana*.

Cryptocampus bebbianae Rohwer, 1909. N. Y. Ent. Soc., Jour. 17: 18. ♀, ♂.

breweriae Smith. Calif. (inner Coast Ranges, Yolo Co., Napa Co.). Ecology: Produces a stem gall. Host: *Salix breweri*.

Euura (Euura) breweriae Smith, 1968. Ent. Soc. Amer., Ann. 61: 1405. ♀, ♂, gall.

cooperae Cockerell. N. Mex. Ecology: Produces a stem gall on narrow-leaved willow. Host: *Salix*.

Euura cooperae Cockerell, 1901. Ann. and Mag. Nat. Hist. (ser. 7) 7: 337. ♀.

cosensii Rohwer. Ont. Ecology: Produces a petiole gall. Host: *Salix humilis*.

Euura cosensii Rohwer, 1915. U. S. Natl. Mus., Proc. 49: 213. ♀, ♂.

exiguae Smith. Calif. (north of Transverse Ranges up to 750m.). Ecology: Produces a stem gall. Host: *Salix exiguae*.

Euura (Euura) exiguae Smith, 1968. Ent. Soc. Amer., Ann. 61: 1402. ♀, ♂, gall.

geyerianae Smith. Oreg. (Klamath Co.), and probably s. in Calif. Sierras. Ecology: Produces a stem gall. Host: *Salix geyeriana*.

Euura (Euura) geyerianae Smith, 1968. Ent. Soc. Amer., Ann. 61: 1405. ♀, ♂, gall.

lasiolepis Smith. Calif. (Monterey Co. to Mendocino Co. west to Sierra Nevada). Ecology: Makes a stem gall. Host: *Salix lasiolepis*.

Euura (Euura) lasiolepis Smith, 1968. Ent. Soc. Amer., Ann. 61: 1406. ♀, ♂, gall.

lemmoniae Smith. Calif. (Sierra Nevada and adjacent ranges from Mt. Lassen and s.). Ecology: Produces a stem gall. Host: *Salix lemmonii*.

Euura (Euura) lemmoniae Smith, 1968. Ent. Soc. Amer., Ann. 61: 1406. ♀, ♂, gall.

macgillivrayi (Rohwer). Colo. Ecology: Produces a stem gall. Host: *Salix luteosericea*. *Cryptocampus macgillivrayi* Rohwer, 1909. N. Y. Ent. Soc., Jour. 17: 16. ♀, ♂.

maura (Rohwer). Colo. Ecology: Adult collected from *Salix*.

Cryptocampus maura Rohwer, 1909. N. Y. Ent. Soc., Jour. 17: 23. ♀, ♂.

minuta MacGillivray. Iowa.

Euura minuta MacGillivray, 1914. Canad. Ent. 46: 366. ♀.

moenia MacGillivray. Oreg.

Euura moenia MacGillivray, 1923. Ill. Univ. Bul. 20(50): 17. ♀, ♂.

nigrella Rohwer. Ont.*Euura nigrella* Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 241. ♀.**nigra** Norton. Labrador.*Euura orbitalis* var. *nigra* Norton, 1867. Amer. Ent. Soc., Trans. 1: 71. ♀.**orbitalis** Norton. Conn., N. Y. Ecology: Adults collected from *Salix*.*Euura orbitalis* Norton, 1862. Ent. Soc. Phila., Proc. 1: 144. ♀, ♂.**pallistigmus** (Rohwer). N. B.*Cryptocampus pallistigmus* Rohwer, 1910. U. S. Natl. Mus., Proc. 38: 200. ♀, ♂.**parva** Rohwer. Colo.*Euura parva* Rohwer, 1908. Canad. Ent. 40: 176. ♀.**perdita** Rohwer. Colo. Ecology: Produces galls. Host: *Salix*.*Euura perdita* Rohwer, 1909. Canad. Ent. 41: 20. ♀, ♂.**propinqua** (Rohwer). N. Mex. Ecology: Produces a stem gall. Host: *Salix*.*Cryptocampus propinqua* Rohwer, 1909. N. Y. Ent. Soc., Jour. 17: 24. ♂.**salicicola** Smith. Ill. Ecology: Produces a stem gall. Host: *Salix alba*.*Euura salicicola* Smith, 1879. North Amer. Ent. 1: 41. ♀, ♂.**scoulerianae** Smith. Calif. (Sierra Nevada and adjacent ranges from Mt. Shasta southward).Ecology: Produces a stem gall. Host: *Salix scouleriana*.*Euura* (*Euura*) *scoulerianae* Smith, 1968. Ent. Soc. Amer., Ann. 61: 1406. ♀, ♂, gall.**serissimae** Rohwer. Ont. Ecology: Produces a petiole gall. Host: *Salix serissima*.*Euura serissimae* Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 240. ♀.**s-gemma** Walsh. Ill. Ecology: Produces twig galls. Host: *Salix humilis*.*Euura s. gemma* Walsh, 1866. Ent. Soc. Phila., Proc. 6: 250. ♀, ♂, gall, larva.*Euura genuina* Norton, 1867. Amer. Ent. Soc., Trans. 1: 79. ♀, ♂, gall.**s-nodus** Walsh. Ont., Mich., Ohio, Ill. Ecology: Produces a stem gall. Host: *Salix interior*.*Euura s. nodus* Walsh, 1866. Ent. Soc. Phila., Proc. 6: 253. ♂.*Cryptocampus salicis-nodus* Dalla Torre, 1894. Cat. Hym., v. 1, p. 278. Emend.*Cryptocampus nodus* Konow, 1905. In Wytsman, Gen. Ins., v. 29, p. 51. Emend.

Biology: Judd, 1954. Canad. Ent. 86: 542-546.

s-ovum Walsh. N. Y., Ill. Ecology: Produces a twig gall. Host: *Salix*.*Euura s. ovum* Walsh, 1866. Ent. Soc. Phila., Proc. 6: 252. ♀, ♂, gall.*Euura perturbans* Walsh, 1866. Ent. Soc. Phila., Proc. 6: 254. ♀, ♂, gall.*Euura salicis-ovum* Thomas, 1881. State Ent. Ill. Rpt. 10: 69. gall, larva.**s-ovulum** Walsh. Ill. Ecology: Produces a stem gall. Host: *Salix humilis*.*Euura s. ovulum* Walsh, 1866. Ent. Soc. Phila., Proc. 6: 253. gall, larva.*Cryptocampus salicis-ovulum* Dalla Torre, 1894. Cat. Hym., v. 1, p. 278. Emend.**Genus EUURA Subgenus GEMMURA** Smith*Euura* subg. *Gemmura* Smith, 1968. Ent. Soc. Amer., Ann. 61: 1401.Type-species: *Cryptocampus mucronatus* Hartig. Orig. desig.**brachycarpae** Rohwer. Colo.*Euura brachycarpae* Rohwer, 1908. Canad. Ent. 40: 176. ♀, ♂.**lanatae** Malaise. Man. (Churchill), Alta. (Lake Louise); n. Europe. Ecology: Produces bud galls.Host: *Salix lanata*, *S. calcicola*.*Euura lanatae* Malaise, 1920. Ent. Tidskr. 40: 105. ♀, ♂.**mucronata** (Hartig). Man. (Churchill), Alaska; Europe. Ecology: Larva feeds inside buds of many species of willow. Host: *Salix*.*Nematus* (*Cryptocampus*) *mucronatus* Hartig, 1837. Fam. Blattwespen und Holzwespen, nebst Einleitung Naturgesch. Hym., p. 223. ♀, ♂.*Euura nigratarsis* Cameron, 1885. Monog. Brit. Phytophagous Hym., v. 2, p. 214.*Euura insularis* Kincaid, 1900. Wash. Acad. Sci., Proc. 2: 352. ♀, ♂.

Taxonomy: Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 402.

Genus AMAURONEMATUS Konow

Amauronematus Konow, 1890. Deut. Ent. Ztschr., pp. 233, 237, 246.

Type-species: *Nematus fallax* Lepeletier. Desig. by Rohwer, 1911.

Pontoprista Malaise, 1921. Ent. Tidskr. 42: 12.

Type-species: *Pontoprista suavis* var. *fusca* Malaise. Desig. by Ross, 1937.

A large holarctic genus common in the arctic and subarctic regions. This genus is in need of study. Several phyletic lines are evident which will eventually allow more convenient species groupings.

Taxonomy: Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 396-402 (holarctic species).

abnormis (Holmgren). Baffin Is., N. W. T., Alaska; n. Europe, Switzerland, Siberia. Females are commonly brachypterous.

Nematus abnormis Holmgren, 1883. Ent. Tidskr. 4: 148. ♀.

Amauronematus tolli Konow, 1907. E. Zoologie 1: 20.

Amauronematus aulatus MacGillivray, 1919. Rpt. Canad. Arctic Exped. 1913-1918, v. 3G, p. 16G.

Taxonomy: Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 401.

amentorum (Foerster). N. H. to Oreg. s. to Va., Mich., Wis., Colo.; Greenland; Iceland; Europe to Siberia. Ecology: Widespread. Larva feeds on catkins. Host: *Salix*.

Nematus amentorum Foerster, 1854. Naturh. Ver. Rheinlande, Verh. 11: 337. ♀.

Nematus suavis Ruthe, 1859. Stettin Ent. Ztg. 20: 308.

Pontania atra Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 37. ♀. N. syn.

Pontania maura Rohwer, 1908. Canad. Ent. 40: 47. ♀. N. syn.

Pontania amentivora Rohwer, 1915. U. S. Natl. Mus., Proc. 49: 209. ♀.

Pontoprista kamtchatica Malaise, 1931. Arkiv for Zool. 23A: 53. ♀.

arcticola (Dalla Torre). N. W. T., Alaska; arctic Europe and Siberia. Host: *Salix*.

Nematus arcticus Thomson, 1871. Hym. Scand., v. 1, p. 134. ♀. Preocc. by Holmgren, 1869.

Nematus arcticola Dalla Torre, 1894. Cat. Hym., v. 1, p. 207. N. name.

Amauronematus arcticola Enslin, 1915. Deut. Ent. Ztschr., Beih., p. 389. N. name.

Amauronematus mcluckiei Benson, 1935. Roy. Ent. Soc. London, Trans. 83: 31. ♀, ♂.

Taxonomy: Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 398.

azaleae Marlatt. N. H. Host: *Azalea*. Recorded from other eastern states but records are based on larvae and their identity is not certain.

Amauronematus azaleae Marlatt, 1896. Canad. Ent. 28: 254. ♀, ♂.

Biology: Smith, 1974. Ent. Soc. Wash., Proc. 76: 204.

borealis (Marlatt). Greenland (Disco Is.).

Nematus borealis Marlatt, 1892. In Fox, Acad. Nat. Sci. Phila., Proc. 44: 133. ♂.

brunneus (Norton). Md., Wis., Sask., Kans., Colo., Utah.

Nematus brunneus Norton, 1864. Ent. Soc. Phila., Proc. 43: 244. ♀.

Amauronematus knabi Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 244. ♀. N. syn.

completus MacGillivray. Alaska.

Amauronematus completus MacGillivray, 1919. Rpt. Canad. Arctic Exped. 1913-1918, v. 3G, p. 13G.

comstocki Marlatt. N. Y.

Amauronematus comstocki Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 77. ♀.

cooki Marlatt. Mich.

Amauronematus cooki Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 79. ♂.

digestus MacGillivray. Alaska.

Amauronematus digestus MacGillivray, 1919. Rpt. Canad. Arctic Exped. 1913-1918, v. 3G, p. 14G.

egnatia (MacGillivray). Alta.

Pteronidea egnatia MacGillivray, 1923. Canad. Ent. 55: 162. ♀.

enavata (MacGillivray). Maine.

Pteronidea enavata MacGillivray, 1920. Canad. Ent. 52: 236. ♀.

fallax (Lepeletier). N. S., Ont. to N. W. T., Yukon, Alaska s. to N. Y., Colo., Oreg.; Europe.

Ecology: Widespread. Host: *Salix*.

Nematus fallax Lepeletier, 1823. Monog. Tenthred., p. 64. ♀, ♂.

Nematus trifurcatus Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 148.

Amauronematus similis Marlatt, 1896. Canad. Ent. 28: 255. ♀.

Pontania quadrifasciatus MacGillivray, 1919. Rpt. Canad. Arctic Exped. 1913-1918, v. 3G, p. 10G. ♀.

Amauronematus vesus MacGillivray, 1921. N. Y. Ent. Soc., Jour. 29: 30. ♀. N. syn.

Amauronematus veneficus MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 169. ♀. N. syn.

Amauronematus nuorbinjargi Saarinen, 1949. Ann. Ent. Fenn. 15: 57.

Amauronematus glacialis Saarinen, 1950. Ann. Ent. Fenn. 16: 45.

Amauronematus amicola Saarinen, 1950. Ann. Ent. Fenn. 16: 47.

Amauronematus subnitens Saarinen, 1950. Ann. Ent. Fenn. 16: 49.

Amauronematus septentrionalis Saarinen, 1950. Ann. Ent. Fenn. 16: 54.

Amauronematus festivus Saarinen, 1950. Ann. Ent. Fenn. 16: 58.

Amauronematus propinquus Saarinen, 1950. Ann. Ent. Fenn. 16: 60.

Nematus trifurcus Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 399. Misspelling of *trifurcatus* Kirby.

Taxonomy: Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 399.

gracilis Marlatt. Mass., N. Y.

Amauronematus gracilis Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 78. ♀.

groenlandicus Malaise. N. W. T., Alaska; Greenland; n. Europe. Host: *Salix* (?).

Amauronematus groenlandicus Malaise, 1933. Skr. om Svalb. og Ischavet 53: 3. ♀.

Amauronematus carbonarius Hellen, 1951. Acta Univ. Lund (n. s.) 46: 71.

Taxonomy: Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 396-397.

hebes Konow. N. W. T.; Europe.

Amauronematus hebes Konow, 1907. Akad. Nauk. Fiz.-Mat. Otd. Zap. 18(3): 17. ♀.

Amauronematus pristiophorus Malaise, 1931. Arkiv for Zool. 23A: 2.

Taxonomy: Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 397.

helleni Lindqvist. Baffin Is., Que., N. W. T., Man.; Scandinavia.

Amauronematus helleni Lindqvist, 1941. Notulae Ent. 21: 65. ♀, ♂.

Taxonomy: Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 397.

histrion (Lepeletier). Maine to Alaska s. to Ill., Colo.; Eurasia. Ecology: Widespread. Host: *Salix*.

Nematus histrion Lepeletier, 1823. Monog. Tenthred., p. 63. ♀.

Nematus luteotergum Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 161. ♀.

Nematus fur Walsh, 1866. Ent. Soc. Phila., Proc. 6: 263. ♂.

Nematus concolor Norton, 1867. Amer. Ent. Soc., Trans. 1: 196. ♂.

Nematus violaceipennis Norton, 1867. Amer. Ent. Soc., Trans. 1: 201. ♂.

Nematus discolor Cresson, 1880. Amer. Ent. Soc., Trans. 8: 8. ♀.

Nematus glenelgensis Cameron, 1882. Ent. Soc. London, Trans., p. 535.

Amauronematus visendus MacGillivray, 1921. N. Y. Ent. Soc., Jour. 29: 28. ♀, ♂.

hulteni Malaise. Man., N. W. T., Yukon; Siberia.

Amauronematus variabilis var. *hulteni* Malaise, 1931. Arkiv for Zool. 23A: 43. ♀, ♂.

Taxonomy: Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 397.

indicatus MacGillivray. Alaska (Camden Bay).

Amauronematus indicatus MacGillivray, 1919. Rpt. Canad. Arctic Exped. 1913-1918, v. 3G, p. 14G.

isolatus Kincaid. N. W. T., Alaska.

Amauronematus isolatus Kincaid, 1900. Wash. Acad. Sci., Proc. 2: 358. ♀.

Amauronematus magnus MacGillivray, 1919. Rpt. Canad. Arctic Exped. 1913-1918, v. 3G, p. 17G. N. syn.

Amauronematus veridicus MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 170. ♀.

itelmena (Malaise). Man., N. W. T.; Siberia. Ecology: Adult collected from *Salix alexensis*.

Pontopristera itelmena Malaise, 1931. Arkiv for Zool. 23A: 54. ♀.

leptocephalus (Thomson). Man.; arctic Eurasia.

Nematus leptocephalus Thomson, 1862. Ofvers. Svensk. Vet. Akad., Forh. 19: 632. ♀.

leucolaenus (Zaddach). Ont., Man., N. W. T., Sask., Alta., Yukon, Alaska; Eurasia.

Nematus leucolaenus Zaddach, 1882. Phys. Okonom. Gesell. Konigsberg., Schr. 23: 196. ♀.

Pontania unga Kincaid, 1900. Wash. Acad. Sci., Proc. 2: 354. ♀.

Pteronidea egeria MacGillivray, 1923. Canad. Ent. 55: 161. ♀. N. syn.

Amauronematus saarineni Lindqvist, 1945. Notulae Ent. 25: 106.

Taxonomy: Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 402.

lineatus (Harrington). Maine, Ont., N. Y. w. to Ill., Nebr., Kans. Host: *Salix*.

Nematus lineatus Harrington, 1893. Canad. Ent. 25: 59. ♀.

Amauronematus lincolnensis Rohwer, 1909. Canad. Ent. 41: 19. ♀.

Biology: Ross, 1935. Ill. State Acad. Sci., Trans. 28: 261-262 (life history; female, male, larva described).

longicaudus (Hellen). Man., B. C.; Lapland.

Nematus (Amauronematus) longicauda Hellen, 1948. Notulae Ent. 27: 113. ♀.

microphyes (Foerster). Ont. (Ottawa); Europe. Host: *Salix*.

Nematus microphyes Foerster, 1854. Naturh. Ver. Rheinlande, Verh. 11: 344. ♀.

Pontopristera romani Malaise, 1921. Ent. Tidskr. 42: 14.

Pontopristera nana Lindqvist, 1949. Notulae Ent. 28: 68.

neglectus (Kirby). Que., Ont., Ill., N. W. T., Man., Colo., Yukon, B. C.; Lapland, Siberia. Host: *Salix*.

Nematus neglectus Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 147. ♀.

Amauronematus intermedius Malaise, 1931. Arkiv for Zool. 23A: 39.

Amauronematus spiniserra Malaise, 1921. Ent. Tidskr. 42: 119.

Taxonomy: Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 400-401. —Lindqvist, 1972. Notulae Ent. 52: 69.

nigriventris (Holmgren). Alaska; n. Europe.

Nematus nigriventris Holmgren, 1883. Ent. Tidskr. 4: 146. ♀.

Amauronematus varians MacGillivray, 1919. Rpt. Canad. Arctic Exped. 1913-1918, v. 3G, p. 16G. ♀ (male misdet.). N. syn.

Pteronidea melanostoma Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 212. ♀. N. syn.

nigrofemoratus (Cresson). Nev.

Nematus nigrofemoratus Cresson, 1880. Amer. Ent. Soc., Trans. 8: 4. ♀.

nitidipleuris Malaise. Man. (Churchill); Greenland; Europe, Siberia.

Amauronematus nitidipleuris Malaise, 1931. Arkiv for Zool. 23A: 45. ♀.

Taxonomy: Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 402.

orbitalis Marlatt. Colo., Oreg.

Amauronematus orbitalis Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 80. ♀.

oregonensis Marlatt. Oreg. (Mt. Hood).

Amauronematus oregonensis Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 80. ♀.

peralus Smith, n. name. Colo., Nev.

Nematus pectoralis Cresson, 1880. Amer. Ent. Soc., Trans. 8: 9. ♀ Preocc. by Lepeletier, 1823.

polaris (Holmgren). N. W. T., Alta., Alaska; n. Europe. Host: *Salix*.

Nematus polaris Holmgren, 1883. Ent. Tidskr. 4: 143. ♀.

Pontania islandica Kincaid, 1900. Wash. Acad. Sci., Proc. 2: 355. ♀.

Pteronius shumagensis Kincaid, 1900. Wash. Acad. Sci., Proc. 2: 357. ♀.

Pteronidea parriserrata Lindqvist, 1944. Notulae Ent. 24: 23.

Amauronematus leucopyga Lindqvist, 1948. Notulae Ent. 28: 69.

Amauronematus subpolaris Lindqvist, 1948. Notulae Ent. 28: 71.

Pteronidea bipicta Lindqvist, 1959. Notulae Ent. 39: 56.

Pteronidea sordidiapex Lindqvist, 1959. Notulae Ent. 39: 57.

Taxonomy: Benson, 1961. Ergeb. Wiss. Unters. Schweiz. Nat. Parks 7(N. F.)(44): 190.

pravus Konow. Alaska; n. Eurasia. Host: *Salix*.

Amauronematus pravus Konow, 1896. Termes. Fuzetek 18: 176. ♀.

rapax (Cresson). Nev.

Nematus rapax Cresson, 1880. Amer. Ent. Soc., Trans. 8: 4. ♂.

sagmarius Konow. Ont., Man., N. W. T., Alta., Alaska; Eurasia. Host: *Salix*.

Amauronematus sagmarius Konow, 1896. Termes. Fuzetek 18: 177. ♀, ♂.

Amauronematus viduatinus Malaise, 1931. Arkiv for Zool. 23A: 40.

Taxonomy: Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 399.

semilacteus (Zaddach). B. C (Vernon); n. and cent. Europe. Host: *Salix*.

Nematus semilacteus Zaddach, 1883. Phys. Okonom. Gesell. Konigsberg., Schr. 24: 148. ♀.

Taxonomy: Vikberg and Kontuniemi, 1971. Ann. Ent. Fenn. 37: 89-95 (male, female, larva).

stordalensis (Strand). Baffin Is., Ellesmere Is., N. W. T., Alaska; Siberia.

Nematus stordalensis Strand, 1905. Second Norw. Arctic Exped. "Fram" Rpt., no. 3, p. 7. ♀, ♂.

Nematus marginifer Strand, 1905. Second Norw. Arctic Exped. "Fram" Rpt., no. 3, p. 8. ♂.

Amauronematus cogitatus MacGillivray, 1919. Rpt. Canad. Arctic Exped. 1913-1918, v. 3G, p. 15G.

Taxonomy: Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 400. — Vikberg, 1970. Ann. Ent. Fenn. 36: 84-91 (description, distribution, separation from related species).

tillbergi Malaise. N. W. T., Alaska; arctic Europe and Siberia. Host: *Salix*.

Amauronematus tillbergi Malaise, 1920. Ent. Tidskr. 40: 125. ♀.

Amauronematus rex Benson, 1948. Ent. Monthly Mag. 84: 32. ♀.

Taxonomy: Lindqvist, 1972. Notulae Ent. 52: 71.

trifasciatus (MacGillivray). N. W. T.

Pontania trifasciata MacGillivray, 1919. Rpt. Canad. Arctic Exped. 1913-1918, v. 3G, p. 11G. ♀.

variator (Ruthe). Man., N. W. T., Yukon, Alaska; Eurasia. Host: *Salix*.

Nematus variator Ruthe, 1859. Stettin Ent. Ztg. 20: 308. ♀.

Taxonomy: Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 398-399.

venerandus MacGillivray. Maine.

Amauronematus venerandus MacGillivray, 1921. N. Y. Ent. Soc., Jour. 29: 30. ♂.

ventosus MacGillivray. Alaska.

Amauronematus ventosus MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 169. ♀.

verbosus MacGillivray. Maine.

Amauronematus verbosus MacGillivray, 1921. N. Y. Ent. Soc., Jour. 29: 29. ♀.

vicinalis (Cresson). Calif.

Nematus vicinalis Cresson, 1880. Amer. Ent. Soc., Trans. 8: 4. ♀.

viduatus (Zetterstedt). Ont., Sask.; Europe.

Tenthredo viduata Zetterstedt, 1838. Ins. Lap., v. 1, p. 351. ♀.

Amauronematus viduatoides Lindqvist, 1959. Notulae Ent. 39: 127.

Taxonomy: Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 402.

whitneyi Rohwer. Alaska.

Amauronematus whitneyi Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 216. ♀.

xanthus Rohwer. Nebr.

Amauronematus xanthus Rohwer, 1909. Canad. Ent. 41: 18. ♀.

Genus DECANEMATUS Malaise

Decanematus Malaise, 1931. Arkiv for Zool. 23A: 31.

Type-species: *Decanematus longiserra* Malaise. Orig. desig.

A small genus found in northern Canada and northern Europe.

Revision: Wong, 1968. Canad. Ent. 100: 84-86.

dulichus Wong. N. W. T. (Reindeer Depot, MacKenzie Delta).
Decanematus dulichus Wong, 1968. Canad. Ent. 100: 84. ♀.

TRIBE PSEUDODINEURINI

Genus PSEUDODINEURA Konow

Dolerus subg. *Pelmatopus* Hartig, 1837. Fam. Blattwespen und Holzwespen, nebst Einleitung Naturgesch. Hym., p. 244. Preocc. by Fischer de Waldheim, 1824.

Type-species: *Dolerus (Pelmatopus) minutus* Hartig. Monotypic.

Pseudodineura Konow, 1885. Wien. Ent. Ztg. 4: 297.

Type-species: *Tenthredo (Allantus) parvula* Klug. Desig. by Rohwer, 1911.

Phyllopaïs Hering, 1934. Internat. Ent. Ztschr. 28: 353. N. name for *Pelmatopus* Hartig.

Several unidentified species are known from western United States.

parva (Norton). Maine to Pa. w. to Ill. Ecology: Leafminer. Host: *Hepatica*.

Dineura parvus Norton, 1867. Amer. Ent. Soc., Trans. 1: 241. ♂.

Genus KERITA Ross

Kerita Ross, 1937. Ill. Biol. Monog. 15 (2): 80.

Type-species: *Kerita fidala* Ross. Orig. desig.

An unidentified species is also known from the western United States.

fidala Ross. Ill. Ecology: A leafminer. Host: *Mertensia*.

Kerita fidala Ross, 1937. Ill. Biol. Monog. 15 (2): 80. ♀.

TRIBE PRISTOLINI

Revision: Wong, 1968. Canad. Ent. 100: 1049-1057.

Genus PRISTOLA Ross

Pristola Ross, 1945. Pan-Pacific Ent. 21: 153.

Type-species: *Pristola macnabi* Ross. Orig. desig.

clarki Wong. Colo. (Echo Lake, Mt. Evans, 10,600 ft.).

Pristola clarki Wong, 1968. Canad. Ent. 100: 1050. ♀, ♂.

macnabi Ross. Newfoundland, N. H., Man., Alta., B. C., Idaho, Oreg. Ecology: Larva lives in berries. Host: *Vaccinium membranaceum*.

Pristola macnabi Ross, 1945. Pan-Pacific Ent. 21: 154. ♀, ♂.

Genus MELASTOLA Wong

Melastola Wong, 1968. Canad. Ent. 100: 1053.

Type-species: *Gymnonychus resinicolor* Marlatt. Orig. desig.

ferruginosa Wong. Alaska, B. C., Wash.

Melastola ferruginosa Wong, 1968. Canad. Ent. 100: 1054. ♀, ♂.

resinicolor (Marlatt). Alaska.

Gymnonychus resinicolor Marlatt, 1896. U. S. Dept. Agr., Div. Ent. Tech. Ser. 3: 125. ♀.

Pachynematus sahlbergi Konow, 1908. Ztschr. System. Hym. Dipt. 8: 83. ♀.

UNPLACED TAXA OF NEMATINAE

The following species are of questionable generic assignment due to inadequate descriptions and inaccessibility, loss, or poor condition of type material. Three species described by Cameron from northern Mexico are included; though not strictly within the scope of this Catalog, they undoubtedly represent southern extensions of northern species.

Hoplocampa? atriceps Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 168. Ga.

Nematus calais Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 144. ♀. Arctic America, MacKenzie River.

Nematus castaneus Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 147. ♀. Hudson Bay, Canada, St. Martin's Falls, Albany River.

- Nematus crassus* Eschscholtz, 1822. Entomographien, p. 213. Isle of Unalaska, Alaska. Preocc. by Fallen, 1808; see *obtus* Kirby.
- Nematus extraneus* Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 142. ♀. Hudson Bay, Canada, St. Martin's Falls, Albany River.
- Nematus fallax* Norton, 1867. Amer. Ent. Soc., Trans. 1: 198. ♂. Labrador. Preocc. by Lepeletier, 1823; see *nortonii* Dalla Torre.
- Nematus hudsonicus* Norton, 1867. Amer. Ent. Soc., Trans. 1: 207. ♀. Fort Good Hope, MacKenzie River, N. W. T., Canada.
- Nematus inquilinus* Walsh, 1866. Ent. Soc. Phila., Proc. 6: 260. ♀, ♂. Rock Island, Ill. Ecology: "Bred from Cecidomyioidous gall *S. rhodoides* Walsh."
- Nematus lateralis* Norton, 1867. Amer. Ent. Soc., Trans. 1: 211. ♀. Maine, N. Y.
- Nematus longicornis* Eschscholtz, 1822. Entomographien, p. 98. Unalaska Isle, Alaska.
- Nematus longicornis* Say, 1835. Boston Jour. Nat. Hist. 1: 219. Iowa. Preocc. by Eschscholtz, 1822; see *longulicornis* Norton.
- Nematus longulicornis* Norton, 1867. Amer. Ent. Soc., Trans. 1: 214. N. name for *longicornis* Say.
- Nematus malacus* Norton, 1867. Amer. Ent. Soc., Trans. 1: 196. ♀. Labrador.
- Euura mexicana* Cameron, 1884. Ent. Soc. London, Trans., p. 482. N. Sonora, Mexico.
- Nematus mexicanus* Cameron, 1884. Ent. Soc. London, Trans., p. 481. N. Sonora, Mexico.
- Nematus monela* Norton, 1867. Amer. Ent. Soc., Trans. 1: 198. ♂. Labrador.
- Tenthredo (Nematus) monochroma* Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., p. 583. Nom. nud.
- Nematus monochroma* Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 161. ♀. Mass.
- Hemichroa nigricans* Cameron, 1884. Ent. Soc. London, Trans., p. 482. N. Sonora, Mexico.
- Nematus nigratus* Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 159. ♂. Conn.
- Nematus nortonii* Dalla Torre, 1894. Cat. Hym., v. 1, p. 246. N. name for *fallax* Norton.
- Nematus obtusus* Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 148. N. name for *crassus* Eschscholtz.
- Nematus proximatus* Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 160. ♀. Maine, Mass., Conn.
- Nematus quercicola* Walsh, 1866. Ent. Soc. Phila., Proc. 6: 260. Nom. nud.
- Nematus rufo-fasciatus* Norton, 1867. Amer. Ent. Soc., Trans. 1: 205. ♀. MacKenzie River, N. W. T., Canada.
- Pontania salicum* Cockerell, 1905. In Aldrich, Smiths. Misc. Coll., v. 46, p. 163. Nom. nud.
- Nematus sathkatchewan* Norton, 1867. Amer. Ent. Soc., Trans. 1: 200. ♀. "Lake Sathkatchewan."
- Nematus sumptus* Norton, 1867. Amer. Ent. Soc., Trans. 1: 207. ♂. Maine.
- Nematus vertebratus* Say, 1836. Boston Jour. Nat. Hist. 1: 218. ♀. Ind.

SUBFAMILY HETERARTHRIINAE

Most of these sawflies are small black insects, among the smallest of the Tenthredinidae. Larvae of the Caliroini feed externally, skeletonizing the foliage of the host, and larvae of the Heterarthriini and Fenusini are all leafminers.

Revision: Smith, 1971. U. S. Dept. Agr., Tech. Bul. 1420, 84 pp. (adults and larvae of Nearctic species). — Smith, 1973. Ent. Soc. Wash., Proc. 75: 337-345 (Neotropical species).

Taxonomy: Smith, 1967. Ent. Soc. Wash., Proc. 69: 277-284 (review of subfamily in N. Amer.).

TRIBE CALIROINI

Genus ENDELOMYIA Ashmead

Endelomyia Ashmead, 1898. Canad. Ent. 30: 256.

Type-species: *Selandria rosae* Harris. Orig. desig.

aethiops (Fabricius). Que., Conn. to Va. w. to B. C., Oreg.; Europe. Ecology: Widespread; a common pest of cultivated roses. Host: *Rosa*. Rose-slug.

Tenthredo aethiops Fabricius, 1781. Species Insectorum, v. 1, p. 416.

Tenthredo (Selandria) atratula Dahlbom, 1835. Conspectus Tenthred., Sircid., Oryssin. Scand., p. 10.

Selandria rosae Harris, 1841. Rpt. Ins. Mass. Injurious to Veg., p. 380.

Eriocampa Livonensis Gimmerthal, 1844. Stettin Ent. Ztg. 5: 38. ♀.

Eriocampa nitida Tischbein, 1846. Stettin Ent. Ztg. 7: 113.

Tenthredo (Selandria) dolosa Eversmann, 1847. Soc. Nat. Moscou, Bul. 20: 33. ♀.

Selandria sorror Vollenhoven, 1869. Tijdschr. v. Ent. 12: 123.

Eriocampa testaceipes Cameron, 1874. Ent. Monthly Mag. 11: 128. ♂.

Poecilosoma nigricolle Cameron, 1882. Monog. Brit. Phytophagous Hym., v. 1, p. 218.

Biology: Riley, 1892. U. S. Dept. Agr., Insect Life 5: 6-11. — Chittenden, 1908. U. S. Dept. Agr., Cir. 105, 12 pp. — Middleton, 1922. U. S. Dept. Agr., Farmers' Bul. 1252, 14 pp.

— Miles, 1935. Ann. Appl. Biol. 22: 116-133.

Genus CALIROA Costa

Caliroa Costa, 1859. Fauna del Regno di Napoli, Imen., pt. 3, p. 59.

Type-species: *Caliroa sebetia* Costa. Monotypic.

Eriocampoides Konow, 1890. Deut. Ent. Ztschr., p. 239.

Type-species: *Tenthredo limacina* Retzius. Desig. by MacGillivray, 1909.

Periclistoptera Ashmead, 1898. Canad. Ent. 30: 255.

Type-species: *Monostegia alba* Norton. Orig. desig.

Larvae of this genus are sluglike in appearance and feed on the underside of the foliage of the host. Host records not listed below are *Acer*, *Ceanothus*, and *Cotoneaster*, all from larvae that cannot be identified. Larvae have not been associated with adults for many species and are all very similar; therefore, adults are needed in most cases for species determination.

annulipes (Klug). Ont.; Europe. Host: *Betula papyrifera*.

Tenthredo (Allantus) annulipes Klug, 1814. Mag. Gesell. Naturf. Freunde Berlin 8: 70.

cerasi (Linnaeus). Que., Ont. to Fla. w. to B. C., Wash., Oreg., Calif., N. Mex.; Eurasia; Africa; Argentina, Chile, Uruguay; Australia, Tasmania, New Zealand; China. Ecology:

Widespread; most commonly a pest of pear trees. Probably native to Europe and introduced to other parts of the world, including N. Amer., by commerce. Host: *Pyrus*, *Prunus*, *Crataegus*, *Sorbus*, and probably many other Rosaceae. Pear-slug.

Tenthredo cerasi Linnaeus, 1758. Syst. Nat., Ed. 10, p. 557.

Tenthredo limacina Retzius, 1783. Genera et Species Insectorum, p. 73.

Tenthredo cerasi Peck, 1799. Mass. Agr. Rpt., p. 9.

Tenthredo (Allantus) adumbrata Klug, 1814. Mag. Gesell. Naturf. Freunde Berlin 8: 64. ♀.

Caliroa laudata MacGillivray, 1909. Canad. Ent. 41: 356. ♀.

Caliroa lacinata MacGillivray, 1909. Canad. Ent. 41: 357. ♀.

Biology: Peck, 1799. Mass. Agr. Rpt., p. 9. — Harris, 1841. Rpt. Ins. Mass. Injurious to Veg., p. 383. — Winchell, 1865. Boston Soc. Nat. Hist., Proc. 9: 321-325. — Riley, 1870. Amer. Ent. and Bot. 2: 296. — Marlatt, 1897. U. S. Dept. Agr., Cir. 26 (ser. 2), 7 pp. — Webster, 1912. N. Y. Ent. Soc., Jour. 20: 125-130 (number of moults). — Webster, 1912. Iowa Agr. Expt. Sta., Bul. 130: 167-193. — Wilson, 1913. Oreg. Agr. Expt. Sta., Rpt. for 1911-12, pp. 217. — Ewing, 1917. Ent. Soc. Amer., Ann. 10: 330-336 (parthenogenesis). — Britton, 1921. Conn. (State) Agr. Expt. Sta., Bul. 226: 199-201. — Miles, 1935. Ann. Appl. Biol. 22: 116-133. — Carl, 1972. Ztschr. Angew. Ent. 71: 58-83.

distincta Smith. B. C., Oreg., Nev., Calif.

Caliroa distincta Smith, 1971. U. S. Dept. Agr., Tech. Bul. 1420, p. 17. ♀.

fasciata (Norton). Ont., Maine to Va. w. to Iowa, Ill. Host: *Quercus velutina*, *Q. palustris*, *Q. rubra*, and probably other oaks.

Selandria fasciata Norton, 1864. Ent. Soc. Phila., Proc. 3: 9. ♀.

floridana Smith. Fla.

Caliroa floridana Smith, 1971. U. S. Dept. Agr., Tech. Bul. 1420, p. 19. ♀.

hyalina Smith. Oreg. Ecology: Adults collected from cherry.

Caliroa hyalina Smith, 1971. U. S. Dept. Agr. Tech. Bul. 1420, p. 19. ♀, ♂.

labrata MacGillivray. Alta., B. C., Oreg., Nev., Calif. Host: *Salix*.

Caliroa labrata MacGillivray, 1909. Canad. Ent. 41: 360. ♂.

litrurata MacGillivray. Conn. to Fla. w. to Mont., Colo., La. Host: *Prunus*, peach, and plum.

Caliroa liturata MacGillivray, 1909. Canad. Ent. 41: 349. ♀.

- Caliroa lineata* MacGillivray, 1909. Canad. Ent. 41: 350. ♀.
Caliroa loricata MacGillivray, 1909. Canad. Ent. 41: 351. ♀.
Caliroa (Eriocampoides) amygdalina Rohwer, 1911. Ent. News 22: 263. ♀, ♂.

Biology: Cushman, 1911. U. S. Dept. Agr., Bur. Ent. Bul. 97: 91-102.

lobata MacGillivray. Vt. to Va. w. to Iowa, Tex. Host: *Quercus palustris*, *Q. velutina*, and probably other oaks.

Caliroa lobata MacGillivray, 1909. Canad. Ent. 41: 355. ♀.

lorata MacGillivray. Maine to Ala. w. to Wis. Host: *Castanea dentata*.

Caliroa lorata MacGillivray, 1909. Canad. Ent. 41: 355. ♀.

Eriocampoides castaneae Rohwer, 1917. U. S. Natl. Mus., Proc. 53: 152. ♀.

lunata MacGillivray. Newfoundland to Va. w. to Mich., Ill., Tex.

Caliroa lunata MacGillivray, 1909. Canad. Ent. 41: 353. ♀.

Caliroa lata MacGillivray, 1909. Canad. Ent. 41: 361. ♀.

nyssae Smith. Pa. to Ga. w. to Miss. Host: *Nyssa sylvatica*.

Caliroa nyssae Smith, 1971. U. S. Dept. Agr., Tech. Bul. 1420, p. 25. ♀, ♂.

obsoleta (Norton). Ont., Mass. to Ga. w. to Minn., Iowa, Ill. Host: *Quercus alba*, *Q. stellata*, *Q. prinus*, and probably other oaks.

Selandria obsoleta Norton, 1867. Amer. Ent. Soc., Trans. 1: 254. ♀.

Selandria quercus alba Norton, 1867. Amer. Ent. Soc., Trans. 1: 258. ♀, ♂.

Selandria quercus-alba Cresson, 1880. Amer. Ent. Soc., Trans. 8: 60. Emend.

Eriocampoides quercus Konow, 1905. In Wytsman, Gen. Ins., v. 29, p. 74. Emend.

petiolata Smith. Pa., Md., Va. Host: *Quercus palustris*.

Caliroa petiolata Smith, 1971. U. S. Dept. Agr., Tech. Bul. 1420, p. 28. ♀, ♂.

quercuscoccineae (Dyar). Maine to N. C. w. to Minn., Ill., Mo., La. Host: *Quercus coccinea*, *Q. velutina*, *Q. palustris*, *Q. alba*, and probably other oaks.

Monostegia quercus-coccineae Dyar, 1894. Canad. Ent. 26: 42. ♀, larva.

TRIBE HETERARTHRIINI

Genus HETERARTHURUS Stephens

Phyllotoma Fallen, 1829. Monog. Tenthred. Suec., p. 25. Preocc. by Leach, 1819.

Type-species: *Phyllotoma vagans* Fallen. Desig. by Rohwer, 1911.

Heterarthrus Stephens, 1835. Illus. Brit. Ent., v. 7, p. 94.

Type-species: *Tenthredo (Emphytus) ochropoda* Klug. Monotypic.

Decatria Stephens, 1835. Illus. Brit. Ent., v. 7, p. 94.

Type-species: *Decatria fuscipennis* Stephens. Monotypic.

Druida Newman, 1838. Ent. Mag. 5: 484.

Type-species: *Druida parviceps* Newman. Monotypic.

Heterarthrus Cameron, 1882. Monog. Brit. Phytophagous Hym., v. 1, p. 282. Emend.

Phlebatrophia MacGillivray, 1909. Canad. Ent. 41: 345.

Type-species: *Phlebatrophia mathesoni* MacGillivray. Monotypic.

This genus is Palaearctic with one introduced species in North America. All larvae are leaf-miners.

memoratus (Fallen). Newfoundland, N. S., N. B., Que., Maine, N. H., Mass., N. Y., Ont.; Europe.

Ecology: A leafminer. Introduced, first found at Pictou, N.S. in 1908. Host: *Betula*.

Hyilotoma memorata Fallen, 1808. Svenska Vetensk. Akad., Handl. 29: 47.

Phyllotoma memoralis Fallen, 1829. Monog. Tenthred. Suec., p. 35.

Fenusa parviceps Newman 1837. Ent. Mag. 4: 261.

Phyllotoma tenella Zaddach, 1859. Programm Friedr. Col. Königsberg, p. 28. ♀.

Phlebatrophia mathesoni MacGillivray, 1909. Canad. Ent. 41: 345. ♀.

Biology: Pierson, 1929. Jour. Econ. Ent. 22: 588-594. —Pierson, Taylor, and Wilkins, 1930.

Maine Forest Service, Cir. 1, 8 pp. —Glasgow, 1932. Jour. Econ. Ent. 25: 693-695.

—Pierson and Brower, 1936. Maine Forest Service and Hardwood Assoc., Bul. 11, 37 pp.

—Gobeil, 1937. Prov. de Quebec Min. des Terres et Forêts, Bul. 1, 7 pp. —Lindquist, 1959. Canad. Ent. 91: 625-627.

TRIBE FENUSINI

Genus **METALLUS** Forbes

Metallus Forbes, 1885. State Ent. Ill. Rpt. 14: 87.

Type-species: *Metallus rubi* Forbes. Monotypic.

Entodecta Konow, 1886. Wien. Ent. Ztg. 5: 184.

Type-species: *Tenthredo (Allantus) pumila* Klug. Desig. by MacGillivray, 1909.

Polybates MacGillivray, 1909. Ent. Soc. Amer., Ann. 2: 264.

Type-species: *Polybates slossonae* MacGillivray. Monotypic.

bensoni Smith, N. Y., B. C.

Metallus bensoni Smith, 1971. U. S. Dept. Agr., Tech. Bul. 1420, p. 34. ♀.

capitalis (Norton). Newfoundland to N. Y. w. to Ill.; Alaska, B. C., Oreg. Ecology: A leafminer.

Host: *Rubus*.

Selandria capitalis Norton, 1867. Amer. Ent. Soc., Trans. 1: 247. ♀.

Entodecta humilis Konow, 1908. Ztschr. System. Hym. Dipt. 8: 84. ♀.

Polybates slossonae MacGillivray, 1909. Ent. Soc. Amer., Ann. 2: 265. ♀.

Polybates secundus Rohwer, 1910. U. S. Natl. Mus., Proc. 38: 202. ♀.

rohweri MacGillivray. N. S., Maine to Fla. w. to Ont., Wis., Ill., Mo. Ecology: A leafminer.

Host: *Rubus*.

Metallus rubi Forbes, 1885. State Ent. Ill. Rpt. 14: 87. ♂. Preocc. by Boie, 1848.

Metallus rohweri MacGillivray, 1909. Ent. Soc. Amer., Ann. 2: 267. ♀.

Metallus bethunei MacGillivray, 1914. Canad. Ent. 46: 366. ♀, ♂.

Biology: Houghton, 1908. Ent. News 19: 212-216 (*capitalis*, not Norton). —Houghton, 1910.

Del. Col. Agr. Expt. Sta., Bul. 87: 3-15 (*capitalis*, not Norton). —Daniel, 1928. N. Y. State

Agr. Expt. Sta., Tech. Bul. 133: 3-38.

Genus **MESSA** Leach

Messa Leach, 1817. Zool. Misc., v. 3, p. 126.

Type-species: *Tenthredo hortulana* Klug. Monotypic.

Fenusella Enslin, 1914. Deut. Ent. Ztschr., Beih., p. 270.

Type-species: *Fenusella wustneii* Konow. Orig. desig.

Melanobates MacGillivray, 1916. Conn. State Geol. and Nat. Hist. Survey, Bul. 22: 158.

Type-species: *Parabates leucostomus* Rohwer. Monotypic.

hortulana (Klug). Mass.; Europe. Ecology: A leafminer. Introduced (?). Host: *Populus*.

Tenthredo (Emphytus) hortulana Klug, 1814. Mag. Gesell. Naturf. Freunde Berlin 8: 276.

♀.

Phaenusa doederleinii Destefani, 1883. Nat. Sicil. 3: 12. ♀, ♂.

Phaenusa ticinensis Magretti, 1886. Soc. Ent. Ital., Bul. 18: 25. ♀.

leucostoma (Rohwer). N. B., Minn., Iowa, Colo., Alta., Wash., Oreg., Calif. Ecology: Adults collected from *Populus*.

Parabates leucostoma Rohwer, 1910. U. S. Natl. Mus., Proc. 38: 202. ♀.

Blennocampa amara MacGillivray, 1923. Canad. Ent. 55: 161. ♀.

nana (Klug). Maine, Mass., N. Y., Ont.; Europe. Ecology: A leafminer. Introduced, first recorded from Maine in 1967. Host: *Betula*.

Tenthredo (Allantus) nana Klug, 1814. Mag. Gesell. Naturf. Freunde Berlin 8: 72.

Tenthredo intercus Zetterstedt, 1838. Ins. Lapp., v. 1, p. 340.

Fenusella quercus Cameron, 1885. Monog. Brit. Phytophagous Hym., v. 2, p. 222.

Biology: Lindquist and Thomson, 1970. Canad. Ent. 102: 108-111.

populifoliella (Townsend). N. B. to Conn. w. to Man., S. Dak., Colo., N. Mex., Ariz., Calif.

Ecology: A leafminer. Host: *Populus*.

Blennocampa populifoliella Townsend, 1893. Canad. Ent. 25: 304.

Scolioneura populi Marlatt, 1895. Ent. Soc. Wash., Proc. 3: 235. ♀, ♂.

Scolioneura luteopicta Rohwer, 1911. U. S. Natl. Mus., Proc. 3: 235. ♀, ♂.

- Biology: Townsend, 1892. U. S. Dept. Agr., Insect Life 4: 26-27 (Cottonwood leafminer).
 —Townsend, 1892. Zoe 3: 234-236 (Tineidae ? larvae). —Underwood and Titus, 1968.
 Canad. Ent. 100: 407-411. —Brown and Eads, 1969. Jour. Econ. Ent. 62: 672-674.
wuestnei (Konow). Que. to Alaska s. to Colo., Calif.; Europe. Ecology: A leafminer. Host:
Salix.
Fenusa wuestnei Konow, 1894. Wien. Ent. Ztg. 13: 91. ♀, ♂.
Fenusa alaskana Kincaid, 1900. Wash. Acad. Sci., Proc. 2: 345. ♂.

Genus SETABARA Ross

- Parabates* MacGillivray, 1909. Ent. Soc. Amer., Ann. 2: 262. Preocc.
 Type-species: *Parabates histrionicus* MacGillivray. Orig. desig.
Setabara Ross, 1951. In Muesebeck, et al., U. S. Dept. Agr., Agr. Monog. 2: 31. N. name.
 A monotypic genus found only in western North America.
histrionica (MacGillivray). Colo., Idaho, Nev., Wash., Oreg., Calif. Ecology: Adults collected
 from *Prunus*.
Parabates histrionicus MacGillivray, 1909. Ent. Soc. Amer., Ann. 2: 263. ♀.

Genus BIDIGITUS Smith

- Bidigitus* Smith, 1967. Ent. Soc. Wash., Proc. 69: 280.
 Type-species: *Profenusa platani* Burks. Orig. desig.
platani (Burks). Calif. Ecology: A leafminer. Host: *Platanus racemosa*.
Profenusa platanae(!) Burks, 1957. Ent. News 68: 207. ♀, ♂.
 Biology: Brown and Eads, 1965. Calif. Agr. Expt. Sta., Bul. 818: 14, 22-32.

Genus PROFENUSA MacGillivray

- Profenusa* MacGillivray, 1914. Canad. Ent. 46: 364.
 Type-species: *Profenusa collaris* MacGillivray. Monotypic.
Gunnea Malaise, 1964. Ent. Tidskr. 85: 33.
 Type-species: *Tenthredo pygmaea* Klug. Orig. desig.
alumna (MacGillivray). Maine to Va. w. to Wis., Ill. Ecology: A leafminer. Host: *Quercus rubra*
 and probably other oaks. References to *alumna* as a leafminer of *Betula* are actually
thomsoni (Konow).
Messa alumna MacGillivray, 1923. Ill. Univ. Bul. 20(50): 23. ♀.
Messa amica MacGillivray, 1923. Ill. Univ. Bul. 20(50): 23. ♂.
Messa appota MacGillivray, 1923. Ill. Univ. Bul. 20(50): 24. ♂.
Profenusa mainensis Smith, 1966. Ent. Soc. Amer., Ann. 59: 720. ♀, larva.
canadensis (Marlatt). Que., Ont. to D. C. w. to Iowa, Mo., Ark. Ecology: A leafminer. Host:
Crataegus, to a lesser extent *Prunus*.
Scolieura canadensis Marlatt, 1895. Ent. Soc. Wash., Proc. 3: 235. ♀.
Profenusa collaris MacGillivray, 1914. Canad. Ent. 46: 364. ♀, ♂.
 Biology: Parrott and Fulton, 1915. N. Y. Agr. Expt. Sta., Bul. 411: 551-580. —Parrott and
 Fulton, 1915. Jour. Agr. Res. 5: 519-528. —Hamilton, 1943. N. Y. Agr. Expt. Sta., Bul. 703:
 59-61. —Hamilton, 1950. Jour. Econ. Ent. 43: 694-696.
inspirata (MacGillivray). Oreg., Nev., Calif. Ecology: A leafminer. Host: *Quercus*.
Parabates inspiratus MacGillivray, 1909. Ent. Soc. Amer., Ann. 2: 264. ♀.
lucifex (Ross). Maine, Ont., N. Y., Ill. Ecology: Leafminer. Host: *Quercus alba*, *Q. macrocarpa*.
Fenusa lucifex Ross, 1936. Ill. State Acad. Sci., Trans. 29: 266. ♀.
 Biology: Lindquist and Jackson, 1965. Canad. Dept. Forestry, Bimonthly Prog. Rpt. 21(4): 1.
thomsoni (Konow). Que., Maine, Vt., Conn., Ont., Man.; Ecology: A leafminer. Introduced.
 Host: *Betula*.
Fenusa thomsoni Konow, 1886. Wien. Ent. Ztg. 5: 270. ♀.

Biology: Lindquist, 1959. *Canad. Ent.* 91: 625-627 (*alumna*, not MacGillivray). — Watson, 1959. *Canad. Ent.* 91: 618-625 (*alumna* not MacGillivray). — Martin, 1960. *Canad. Ent.* 92: 376-384.

Genus NEFUSA Ross

Nefusa Ross, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2, p. 31.

Type-species: *Nefusa anita* MacGillivray. Orig. desig.

The single species in this genus is known only from North America.

ambigua (Norton). Que., Maine to Tenn. w. to Wis. Ecology: A leafminer. Host: *Viola*.

Fenusa ambiguus Norton, 1867. *Amer. Ent. Soc., Trans.* 1: 225. ♂.

Messa anita MacGillivray, 1923. *Ill. Univ. Bul.* 20(50): 23. ♀.

Biology: Shaw, 1940. *Jour. Econ. Ent.* 33: 951 (*Fenusa* sp.).

Genus PROLATUS Smith

Prolatus Smith, 1967. *Ent. Soc. Wash., Proc.* 69: 282.

Type-species: *Prolatus artus* Smith. Orig. desig.

A monotypic genus known only from western North America.

artus Smith. Oreg.

Prolatus artus Smith, 1967. *Ent. Soc. Wash., Proc.* 69: 283. ♀, ♂ (?).

Genus FENUSA Leach

Fenusa Leach, 1817. *Zool. Misc.*, v. 3, p. 126.

Type-species: *Tenthredo (Emphytus) pumila* Klug. Monotypic.

Kaliosysphinga Tischbein, 1846. *Stettin Ent. Ztg.* 7: 79.

Type-species: *Kaliosysphinga dohrnii* Tischbein. Monotypic.

Aphadnurus Costa, 1859. *Fauna del Regno di Napoli*, Imen., pt. 3, p. 40.

Type-species: *Aphadnurus tantillus* Costa. Monotypic.

Caliosysphinga Konow, 1905. In Wytsmann, *Gen. Ins.*, v. 29, p. 89. Emend.

Kaliofenusa Viereck, 1910. *N. J. State Mus., Ann. Rpt.* 1909, p. 591.

Type-species: *Fenusa ulmi* Sundevall. Monotypic.

A genus of several species most of which are holarctic though two of them were probably introduced into this continent.

dohnii (Tischbein). Newfoundland to Pa. w. to B. C., Oreg., Utah., N. Mex.; Europe; Japan; S.

Africa. Ecology: A widespread leafminer. Host: *Alnus*. European alder leafminer.

Kaliosysphinga dohrnii Tischbein, 1846. *Stettin Ent. Ztg.* 7: 80.

Fenusa curtis Norton, 1861. *Ent. Soc. Phila., Proc.* 1: 199. ♀.

Phaenusa melanopoda Cameron, 1876. *Glasgow Nat. Hist. Soc., Proc.* 3: 6.

Fenusa nigricans Thomson, 1870. *Opusc. Ent.*, 2nd Fasc., p. 271.

Fenella westwoodi Cameron, 1882. *Monog. Brit. Phytophagous Hym.*, v. 1, p. 289.

Biology: Slingerland, 1905. N. Y. (Cornell) Agr. Expt. Sta. Bul. 233: 49-62. — Frankenhuyzen, 1970. *Ent. Ber.* 30: 49-52 (in Netherlands).

pusilla (Lepeletier). Newfoundland to Md. w. to Ont., Minn., Iowa; Wash., Oreg.; Europe.

Ecology: A leafminer. Introduced, first reported in Conn. in 1925. Host: *Betula*. Birch leafminer.

Tenthredo (Emphytus) pumila Klug, 1814. *Mag. Gesell. Naturf. Freunde Berlin* 8: 277.

Preocc.

Dolerus (Fenusa?) pusillus Lepeletier, 1823. *Monog. Tenthred.*, p. 120.

Tenthredo pygmaea Zetterstedt, 1838. *Ins. Lapp.*, v. 1, p. 340. ♀, ♂.

Aphadnurus tantillus Costa, 1859. *Fauna del Regno di Napoli*, Imen., pt. 3, p. 41. ♂.

Fenusa fuliginosa Healy, 1869. *Entomologist* 4: 225-227.

Fenusa minima Brischke, 1883. *Schrift. Naturf. Gesell. Danzig* 4: 264. ♀.

Biology: Britton, 1925. Conn. (State) Agr. Expt. Sta. Bul. 265: 340. — Friend, 1931. Jour. Econ. Ent. 24: 171-177. — Friend, 1933. Conn. (State) Agr. Expt. Sta. Bul. 348: 291-364. — Cheng and LeRoux, 1965. Ent. Soc. Quebec, Ann. 10: 173-188. — Schread, 1971. Conn. (State) Agr. Expt. Sta. Bul. 693: 5-19. — Cheng and LeRoux, 1970. Canad. Ent. 102: 995-1002 (factors in survival of immature stages).

ulmi Sundevall. Que., Ont., Mass., N. Y., Mich.; Europe. Ecology: A leafminer. Introduced. Host: *Ulmus*. Elm leafminer.

Fenusa ulmi Sundevall, 1844. Skand. Naturf. Forhandl., p. 249.

Fenusa intermedia Thomson, 1871. Hym. Scand., v. 1, p. 186. ♀.

Messa alsia MacGillivray, 1923. Ill. Univ. Bul. 20(50): 22. ♀.

Biology: Felt, 1898. N. Y. State Mus., Bul. 5(23): 237 (an elm leafminer). — Slingerland, 1905. N. Y. (Cornell) Agr. Expt. Sta. Bul. 233: 49-62.

Genus FENELLA Westwood

Fenella Westwood, 1840. Introduct. Modern Class. Ins., v. II, p. 54.

Type-species: *Fenella nigrita* Westwood. Monotypic.

Melinia Costa, 1859. Fauna del Regno di Napoli, Imen., pt. 3, p. 41.

Type-species: *Melinia minutissima* Costa. Desig. by Rohwer, 1911.

Paraphyllotoma Forsius, 1930. Notulae Ent. 10: 103.

Type-species: *Paraphyllotoma judaica* Forsius Orig. desig.

Taxonomy: Benson, 1953. Roy. Ent. Soc. London, Proc., Ser. B: Taxonomy 22: 136-138 (key to European species).

nigrita Westwood. Conn., Ont., Mich.; Europe. Ecology: A leafminer. Introduced (?). Host:

Potentilla, *Agrimonia*. *Agrimonia* was recorded as a host-plant in Europe.

Fenella nigrita Westwood, 1840. Introduct. Modern Class. Ins., v. II, p. 54.

SUBFAMILY BLENNOCAMPINAE

A diverse subfamily with various hosts. Most of these sawflies are small to medium, stout insects. Most larvae are external leaf feeders, and adults fall and feign death when disturbed.

Revision: Smith, 1969. U. S. Dept. Agr., Tech. Bul. 1397, 179 pp. (adults and larvae of Nearctic species).

TRIBE LYCAOTINI

Revision: Smith, 1973. Pan-Pacific Ent. 49: 93-101 (S. Amer.).

Taxonomy: Benson, 1966. Roy. Ent. Soc. London, Proc., Ser. B: Taxonomy 35: 75-77 (key to world genera).

Genus BLENNOGENERIS MacGillivray

Blennogeneris MacGillivray, 1923. Ill. Univ. Bul. 20(50): 8.

Type-species: *Blennocampa typicella* MacGillivray. Monotypic.

Lycaotella Ross, 1932. Canad. Ent. 64: 41.

Type-species: *Selandria (Hoplocampa) spissipes* Cresson. Orig. desig.

coloradensis (Rohwer). Man., Colo., Idaho, Utah, Wash.

Lycaota coloradensis Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 384.

gittinsi Smith. Idaho, Wash.

Blennogeneris gittinsi Smith, 1969. U. S. Dept. Agr. Tech. Bul. 1397, p. 24. ♀.

spissipes (Cresson). Ont., Minn., Colo. w. to B. C., Wash., Oreg., Calif. Ecology: Larva lives in terminal bud gall. Host: *Symphoricarpos*.

Selandria (Hoplocampa) spissipes Cresson, 1880. Amer. Ent. Soc., Trans. 8: 14. ♀.

Selandria (Hoplocampa) lenis Cresson, 1880. Amer. Ent. Soc., Trans. 8: 14. ♂.

Lycaota bruneri Rohwer, 1908. N. Y. Ent. Soc., Jour. 14: 104. ♀. N. syn.

Lycaota spissipes brunneus Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 384. ♀.

Blennocampa typicella MacGillivray, 1923. Ill. Univ. Bul. 20(50): 8. ♂.

Biology: Ross, 1932. Canad. Ent. 64: 42-44.

Genus LYCAOTA Konow

Lycaota Konow, 1903. Ztschr. System. Hym. Dipt. 3: 147.

Type-species: *Selandria sodalis* Cresson. Desig. by Rohwer, 1911.

bouquetensis Smith. S. Calif.

Lycaota bouquetensis Smith, 1969. U. S. Dept. Agr., Tech. Bul. 1397, p. 29. ♀.

janetae Smith. Oreg., Calif. Ecology: Adult collected from *Symphoricarpos*.

Lycaota janetae Smith, 1969. U. S. Dept. Agr., Tech. Bul. 1397, p. 29. ♀, ♂.

sodalis (Cresson). Sask., Colo., Utah w. to B. C., Wash., Oreg.

Selandria sodalis Cresson, 1880. Amer. Ent. Soc., Trans. 8: 14. ♀.

Lycaota fusca Rohwer, 1908. Canad. Ent. 40: 180. ♂.

TRIBE TOMOSTETHINI

Genus TOMOSTETHUS Konow

Tomostethus Konow, 1886. Wien. Ent. Ztg. 5: 184, 214.

Type-species: *Tenthredo nigrita* Fabricius. Desig. by Rohwer, 1911.

A small holarctic genus.

multicinctus (Rohwer). Mass., Ont. to N. C. w. to S. Dak., Kans., Okla., Tex.; Oreg., Calif. Host:

Fraxinus americana, *F. oregana*. Brown-headed ash sawfly.

Monophadnus multicinctus Rohwer, 1909. Canad. Ent. 41: 90. ♂.

Biology: Sasseer, 1911. Ent. Soc. Wash., Proc. 13: 107-110. — Langford and McConnell, 1935.

Jour. Econ. Ent. 28: 208-210. — MacNay, 1957. Canad. Ins. Pest Rev. 35: 184. — Armitage,

1950. Calif. Dept. Agr., Bul. 39: 183.

Genus TETHIDA Ross

Tethida Ross, 1937. Ill. Biol. Monog. 15(2): 96.

Type-species: *Tenthredo cordigera* Beauvois. Orig. desig.

This genus contains a single North American species.

cordigera (Beauvois). N. B., Que. to Fla. w. to Sask., Mont., S. Dak., Nebr., Kans., Tex. Host:

Fraxinus americana, *F. nigra*, *F. pennsylvanica*. Black-headed ash sawfly.

Tenthredo cordigera Beauvois, 1809. Ins. Afr. Amer., p. 97. ♀.

Tenthredo (*Selandria*) *barda* Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool.

Mass., p. 583. Nom. nud.

Tenthredo bardus Say, 1836. Boston Jour. Nat. Hist. 1: 218. ♀.

Selandria dubia Cresson, 1865. Ent. Soc. Phila., Proc. 4: 244. ♀.

Biology: Osborne, 1884. Canad. Ent. 16: 148-152. — Osborne, 1884. Ont. Ent. Soc., Ann. Rpt.

15: 32-34. — Packard, 1890. U. S. Ent. Comm. Rpt. 4 (Bul. 7, rev.), p. 544.

TRIBE PHYMATOCERINI

Genus PHYMATOCERA Dahlbom

Tenthredo subg. *Phymatocera* Dahlbom, 1835. Conspectus Tenthred., Siricid., Oryssin.

Scand., p. 11.

Type-species: *Tenthredo* (*Allantus*) *aterrima* Klug. Monotypic.

Pectinia Brulle, 1846. In Lepeletier, Hist. Nat. Ins., Hym., p. 664.

Type-species: *Tenthredo* (*Allantus*) *aterrima* Klug. Orig. desig.

Melanoselandria Ashmead, 1900. In Smith, N. J. State Bd. Agr. Ann. Rpt. 27: 606. Nom. nud.

Hypargyricus MacGillivray, 1908. Canad. Ent. 40: 290.

Type-species: *Hypargyricus infuscatus* MacGillivray. Orig. desig.

Melanoselandria MacGillivray, 1909. Canad. Ent. 41: 404.

Type-species: *Melanoselandria zabriskiei* MacGillivray. Monotypic.

Species of this holarctic genus are associated with Liliaceae.

- fumipennis* (Norton). Que. to Ala. w. to Wis., Ill., Mo. Host: *Smilacina*.
Selandria fumipennis Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 222. ♀, ♂.
offensa (MacGillivray). Que., Maine to B. C. s. to Ont., Ill., Colo., Utah, Calif. Host: *Smilacina*.
Paracharactus offensus MacGillivray, 1923. Ill. Univ. Bul. 20(50): 28. ♀.
racemosae Smith. Que. to N. C. w. to Wis., Ill.; B. C. Ecology: Adults collected from
Smilacina(?), *Polygonatum*(?).
Phymatocera racemosae Smith, 1969. U. S. Dept. Agr., Tech. Bul. 1397, p. 49. ♀, ♂.
similata (MacGillivray). Ont., N. Y. to B. C. s. to Mich., Ill., Iowa, Nebr., Colo., Utah, Calif.
Host: *Smilacina*.
Rhadinoceraea similata MacGillivray, 1908. Canad. Ent. 40: 290. ♀.
Hypargyricus infuscatus MacGillivray, 1908. Canad. Ent. 40: 290. ♀.
Rhadinoceraea lucida Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 229. ♀.
smilacinae Smith. Que. to Va. w. to Wis., Ill. Ecology: Adults collected from *Smilacina* and
Polygonatum.
Phymatocera smilacinae Smith, 1969. U. S. Dept. Agr., Tech. Bul. 1397, p. 55. ♀, ♂.

UNPLACED TAXA OF PHYMATOCERA DAHLBOM

- ruscula* (MacGillivray). Oreg. (Marys Peak).
Monophadnus ruscullus MacGillivray, 1923. Psyche 30: 80. ♂.
zabriskiei (MacGillivray). No locality.
Melanoselandria zabriskiei MacGillivray, 1909. Canad. Ent. 41: 404.

Genus PARACHARACTUS MacGillivray

- Paracharactus* MacGillivray, 1908. Canad. Ent. 40: 292.
Type-species: *Paracharactus obscuratus* MacGillivray. Orig. desig.
Dicrostema Benson, 1952. Handb. Ident. Brit. Ins., v. 6, pt. 2(b), p. 101.
Type-species: *Selandria gracilicornis* Zaddach. Orig. desig.

A small holarctic genus. Adults are most commonly collected by sweeping grasses and sedges.

- montivagus* (Cresson). Mont., Idaho, Wash., Oreg., Nev., Calif.
Selandria montivaga Cresson, 1880. Amer. Ent. Soc., Trans. 8: 13. ♀.
Selandria scelestia Cresson, 1880. Amer. Ent. Soc., Trans. 8: 14. ♂.
niger (Harrington). Que., Maine to Md. w. to Minn., Iowa, Kans. Host: *Carex*.
Phymatocera nigra Harrington, 1889. Canad. Ent. 21: 96. ♀.
Monophadnus distinctus MacGillivray, 1908. Canad. Ent. 40: 291. ♀.
Tomostethus nortonii MacGillivray, 1908. Canad. Ent. 40: 291. ♀.
rudis (Norton). Que., Maine to Ga. w. to Sask., S. Dak., Colo.
Selandria rudis Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 221. ♀.
Selandria rufula Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 221. ♂.
Paracharactus obscuratus MacGillivray, 1908. Canad. Ent. 40: 293. ♀.

Genus RHADINOCERAEAE Konow

Species of this holarctic genus are associated with Liliaceae and Iridaceae.

Genus RHADINOCERAEAE Subgenus RHADINOCERAEAE Konow

- Rhadinoceraea* Konow, 1886. Wien. Ent. Ztg. 5: 184, 211.
Type-species: *Tenthredo (Allantus) micans* Klug. Desig. by Rohwer, 1911.
brysonensis Smith. Calif. (Bryson).
Rhadinoceraea (Rhadinoceraea) brysonensis Smith, 1969. U. S. Dept. Agr., Tech. Bul. 1397, p. 67. ♀.
ctenidium Smith. Calif. (Mt. Pinos, Kern Co., 8900 ft.).
Rhadinoceraea (Rhadinoceraea) ctenidium Smith, 1969. U. S. Dept. Agr., Tech. Bul. 1397, p. 67. ♀.
nigra (Rohwer). S. Calif. Host: *Calochortus venustus*.
Paracharactus niger Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 231. ♀.

utahensis Smith. N. Utah.

Rhadinoceraea (*Rhadinoceraea*) *utahensis* Smith, 1969. U. S. Dept. Agr., Tech. Bul. 1397, p. 70. ♀, ♂.

Genus RHADINOCERAEA Subgenus VERATRA Smith

Rhadinoceraea subg. *Veratra* Smith, 1969. U. S. Dept. Agr. Tech. Bul. 1397, p. 70.

Type-species: *Selandria nubilipennis* Norton. Orig. desig.

aldrichi (MacGillivray). Alta., Idaho, B. C., Wash., Oreg., Nev., Calif. Host: *Veratrum*.

Pareophora aldrichi MacGillivray, 1923. Ill. Univ. Bul. 20(50): 28. ♀, ♂.

insularis (Kincaid). Alaska, B. C., Wash., Oreg., Calif. Host: *Veratrum*.

Monophadnus insularis Kincaid, 1900. Wash. Acad. Sci., Proc. 2: 346. ♂.

jacintensis Smith. S. Calif.

Rhadinoceraea (*Veratra*) *jacintensis* Smith, 1969. U. S. Dept. Agr., Tech. Bul. 1397, p. 75. ♀, ♂.

nubilipennis (Norton). N. B., Que. s. to N. C. Host: *Veratrum*.

Selandria nubilipennis Norton, 1867. Amer. Ent. Soc., Trans. 1: 252. ♀, ♂.

Neopareophora scelestia MacGillivray, 1908. Canad. Ent. 40: 289. ♀.

Monophadnus planus MacGillivray, 1921. Brooklyn Ent. Soc., Bul. 16: 23. ♂. Preocc. by Klug, 1814.

Monophadnus vupularis Benson, 1930. Entomologist 63: 107. N. name for *planus* MacGillivray.

Genus LAGONIS Ross

Lagonis Ross, 1937. Ill. Biol. Monog. 15(2): 99.

Type-species: *Selandria nevadensis* Cresson. Orig. desig.

A small genus known from western North America and east Asia.

nevadensis (Cresson). Alta., Wyo., Utah w. to B. C., Wash., Oreg., Calif. Host: *Sambucus*.

Selandria nevadensis Cresson, 1880. Amer. Ent. Soc., Trans. 8: 13. ♀.

Paracharactus leucostomus Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 230. ♀.

Genus MONOPHADNUS Hartig

Tenthredo subg. *Monophadnus* Hartig, 1837. Fam. Blattwespen und Holzwespen, nebst Einleitung Naturgesch. Hym., p. 271.

Type-species: *Tenthredo albipes* Gmelin. Desig. by Ashmead, 1898.

Monophadnus subg. *Doderia* Malaise, 1935. Ent. Tidskr. 56: 167.

Type-species: *Tenthredo* (*Allantus*) *spinolae* Klug. Orig. desig.

aequalis MacGillivray. Ont., Maine to Md. w. to Alta., Colo. Host: *Ranunculus*.

Monophadnus aequalis MacGillivray, 1908. Canad. Ent. 40: 292. ♀.

Monophadnus plicatus MacGillivray, 1908. Canad. Ent. 40: 292. ♀, ♂.

Monophadnus transversus MacGillivray, 1908. Canad. Ent. 40: 292. ♀.

Monophadnus truncatus Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 232. ♀.

assaracus MacGillivray. Oreg.

Monophadnus assaracus MacGillivray, 1923. Ill. Univ. Bul. 20(50): 26. ♂.

bakeri Smith. Md., Va., Ill., Mont., Kans.

Monophadnus bakeri Smith, 1969. U. S. Dept. Agr., Tech. Bul. 1397, p. 86. ♀.

californicus (Rohwer). Oreg., Calif. Host: *Ranunculus*.

Neocharactus californicus Rohwer, 1909. Canad. Ent. 41: 89. ♀.

Monophadnoides conductus MacGillivray, 1923. Ill. Univ. Bul. 20(50): 24. ♀.

contortus (MacGillivray). Mont., Idaho, B. C., Oreg., Calif.

Monophadnoides contorta MacGillivray, 1923. Psyche 30: 78. ♀.

Monophadnus aeratus MacGillivray, 1923. Psyche 30: 79. ♂.

Aphanisus obsitus MacGillivray, 1923. Ill. Univ. Bul. 20(50): 7. ♀.

Aphanisus occiduus MacGillivray, 1923. Ill. Univ. Bul. 20(50): 7. ♀.

lattini Smith. N. H., Mass., Conn., Wis., Man., Minn.

Monophadnus lattini Smith, 1969. U. S. Dept. Agr., Tech. Bul. 1397, p. 91. ♀, ♂.

- pallascens** (Gmelin). Newfoundland to N. Y. w. to Mich.; B. C.; Europe. Introduced (?). Host: *Ranunculus*. The host was recorded in Europe.
Tenthredo albipes Gmelin, 1790. In Linnaeus, Syst. Nat., Ed. 13, p. 2667. Preocc. by Geoffroy, 1785.
Tenthredo pallascens Gmelin, 1790. In Linnaeus, Syst. Nat., Ed. 13, p. 2668.
Selandria tiliæ Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 221. ♀.
Monophadnus bipunctatus MacGillivray, 1908. Canad. Ent. 40: 292. ♀.
Monophadnus furvus Benson, 1930. Entomologist 63: 107. Unnecessary n. name for *bipunctata* MacGillivray, but also preocc. by Konow, 1898.

Genus STETHOMOSTUS Benson

- Stethomostus* Benson, 1939. Ent. Monthly Mag. 75: 111.
 Type-species: *Tenthredo fuliginosa* Schrank. Orig. desig.
fuliginosus (Schrank). N. S., Que. to Md. w. to Mich.; Europe; Japan. Introduced (?). Host: *Ranunculus*.
Tenthredo fuliginosa Schrank, 1781. Enum. Ins. Austriae, p. 334.
Tenthredo (Selandria) fuscus Lepeletier, 1823. Monog. Tenthred., p. 106. ♂.
Tenthredo (Selandria) fraxini Lepeletier, 1823. Monog. Tenthred., p. 106. ♀, ♂.
Monophadnus fukaii Rohwer, 1910. U. S. Natl. Mus., Proc. 39: 108. ♀, ♂.

Genus EUTOMOSTETHUS Enslin

- Tomostethus* subg. *Eutomostethus* Enslin, 1914. Deut. Ent. Ztschr., Beih., p. 286.
 Type-species: *Tenthredo luteiventris* Klug. Orig. desig.
Tomostethus subg. *Atomostethus* Enslin, 1914. Deut. Ent. Ztschr., Beih. p. 287.
 Type-species: *Tenthredo ephippium* Panzer. Orig. desig.
Tomostethopsis Sato, 1928. Insecta Matsumurana 2: 178.
 Type-species: *Tomostethopsis metallicus* Sato. Orig. desig.
Forsia Malaise, 1932. Arkiv for Zool. 23: 29.
 Type-species: *Forsia tomostethi* Malaise. Orig. desig.

Most of the species of this genus are found in Asia.

- ephippium** (Panzer). Newfoundland, N. S., Que., Ont. s. to Md.; Tex.; B. C., Wash.; Europe, N. Africa, Asia Minor. Introduced (?). Host: *Poa* and other Gramineae. Hosts recorded in Europe.
Tenthredo ephippium Panzer, 1798. Faunae Ins. German., heft 52, pl. 5. ♀.
Selandria inhabilis Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 220. ♀.
luteiventris (Klug). N. S., Que. to Md. w. to Mich.; Alta., B. C., Wash., Oreg.; Europe. Ecology: Larva bores in sterile shoots of *Juncus* until last instar when it emerges and feeds externally, according to European observations. Introduced (?). Host: *Juncus*.
Tenthredo luteiventris Klug, 1814. Mag. Gesell. Naturf. Freunde Berlin 8: 56.
Tenthredo (Selandria) fuscipennis Lepeletier, 1823. Monog. Tenthred. p. 107. ♀, ♂.

TRIBE BLENNOCAMPINI

Genus ARDIS Konow

- Ardis* Konow, 1886. Wien. Ent. Ztg. 5: 184, 188.
 Type-species: *Tenthredo (Allantus) bipunctata* Klug. Desig. by Rohwer, 1911.
Valco Ross, 1937. Ill. Biol. Monog. 15(2): 99.
 Type-species: *Selandria irrogata* Cresson. Orig. desig.

A small holarctic genus associated with roses.

- atrata** (Harrington). B. C., Wash., Oreg., Calif. Ecology: Adults collected from *Rosa*.
Monophadnus atrata Harrington, 1894. Canad. Ent. 26: 193. ♂.
Monophadnoides circina MacGillivray, 1923. Ill. Univ. Bul. 20(50): 24. ♂.
Paracharactus obtentus MacGillivray, 1923. Ill. Univ. Bul. 20(50): 28. ♀.

brunniventris (Hartig). Maine to N. W. T. s. to N. C., Ill., N. Mex., Calif.; Europe to Siberia, Japan. Ecology: Widespread. Larva bores and feeds in shoots of wild and cultivated roses. Host: *Rosa*. Previous reports of *Ardis sulcata* (Cameron) in N. Amer. were based on a misidentification and pertain to this species.

Tenthredo (*Allantus*) *bipunctata* Klug, 1814. Mag. Gesell. Naturf. Freunde Berlin 8: 215. ♀. Preocc. by Muller, 1776.

Tenthredo (*Monophadnus*) *brunniventris* Hartig, 1837. Fam. Blattwespen und Holzwespen, nebst Einleitung Naturgesch. Hym., p. 274. ♀.

Selandria irrogata Cresson, 1880. Amer. Ent. Soc., Trans. 8: 13. ♀.

Aphanisus odoratus MacGillivray, 1908. Canad. Ent. 40: 296. ♀.

Aphanisus parallelus MacGillivray, 1923. Ill. Univ. Bul. 20(50): 7. ♀.

Taxonomy: Smith, 1965. Pan-Pacific Ent. 41: 9-10 (synonymy). —Smith, 1966. Ent. Soc. Amer., Ann. 59: 1292 (larva separated from related species).

Biology: Eide, 1948. Jour. Econ. Ent. 41: 819-821. —Middlekauff, 1958. Pan-Pacific Ent. 34: 202.

Genus MONARDIS Enslin

Monardis Enslin, 1914. Deut. Ent. Ztschr., Beih., p. 284.

Type-species: *Tenthredo plana* Klug. Monotypic.

pulla Smith. Sask. to Colo., Utah and w. to B. C.

Monardis pulla Smith, 1969. U. S. Dept. Agr., Tech. Bul. 1397, p. 114. ♀.

Genus APAREOPHORA Sato

Apareophora Sato, 1928. Insecta Matsumurana 2: 185.

Type-species: *Apareophora forsythiae* Sato Orig. desig.

This small genus is found in east Asia and North America.

dyari (Benson). N. B. to N. Y. and Ont. Host: *Spiraea salicifolia*.

Blennocampa spiraea Dyar, 1895. Canad. Ent. 27: 194. ♀, ♂, larva. Preocc. by Brischke and Zaddach, 1883.

Blennocampa dyari Benson, 1930. Entomologist 63: 107. N. name.

Biology: Dyar, 1895. Canad. Ent. 27: 194.

rossi Smith. Maine w. to Wis., Minn.

Apareophora rossi Smith, 1969. U. S. Dept. Agr., Tech. Bul. 1397, p. 118. ♀, ♂.

Genus EUPAREOPHORA Enslin

Eupareophora Enslin, 1914. Deut. Ent. Ztschr., Beih., p. 283.

Type-species: *Blennocampa exarmata* Thomson. Monotypic.

Only two species are known, the type-species from Europe and the species below.

parca (Cresson). N. B. to Md. w. to Sask., N. Dak., Iowa, Kans., Tex.; Oreg., Calif. Host.

Fraxinus pennsylvanica, *F. nigra*, *F. americana*, *F. oregona*, *Carya illinoensis*, *Chionanthus*(?).

Selandria parca Cresson, 1880. Amer. Ent. Soc., Trans. 8: 13. ♂.

Periclista chionanthi Dyar, 1898. N. Y. Ent. Soc., Jour. 6: 132. ♀, larva.

Monophadnus minutus MacGillivray, 1908. Canad. Ent. 40: 291. ♀.

Pareophora guana MacGillivray, 1923. Ill. Univ. Bul. 20(50): 28. ♂.

Pareophora guana MacGillivray, 1923. Brooklyn Ent. Soc., Bul. 18: 54. ♀.

Biology: Packard, 1890. U. S. Ent. Comm. Rpt. 5 (Bul. 7, rev.), p. 545 (*Selandria* sp.).

Genus PERICLISTA Konow

Larvae of this genus feed on the foliage of *Quercus* and *Carya*. The genus is holarctic as well as being found in Chile and southern Argentina.

Revision: Stannard, 1949. Amer. Ent. Soc., Trans. 75: 7-42.

Genus PERICLISTA Subgenus PERICLISTA Konow

Periclista Konow, 1886. Wien. Ent. Ztg. 5: 184, 186.

Type-species: *Tenthredo (Allantus) lineolata* Klug. Desig. by Rohwer, 1911.

Mogerus MacGillivray, 1895. Canad. Ent. 27: 281. Unnecessary n. name for *Periclista* Konow.

Isodyctium Ashmead, 1898. In Dyar, N. Y. Ent. Soc., Jour. 6: 127.

Type-species: *Mogerus caryicolus* Dyar. Orig. desig.

Apericlista Enslin, 1914. Deut. Ent. Ztschr., Beih., p. 265.

Type-species: *Tenthredo albipennis* Zaddach. Orig. desig.

Neoclista Malaise, 1964. Ent. Tidskr. 85: 22.

Type-species: *Periclista andrei* Konow. Orig. desig.

Cornaria Malaise, 1964. Ent. Tidskr. 85: 22.

Type-species: *Cornaria fumipennis* Malaise. Monotypic.

Taxonomy: Benson, 1968. Brit. Mus. (Nat. Hist.) Ent., Bul. 22: 152-153 (key to European species).

SPECIES GROUP LINEOLATA

albicollis (Norton). Maine, Ont. to Va. w. to Man., Iowa, Kans., Okla., Tex. Host: *Quercus alba*, *Q. ilicifolia*, *Q. macrocarpa*, *Q. rubra*, *Q. velutina*.

Selandria albicollis Norton, 1872. Amer. Ent. Soc., Trans. 4: 85. ♂.

Periclista mutabilis Konow, 1904. Ztschr. System. Hym. Dipt. 4: 241. ♀, ♂.

Periclista quercus Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 232. ♀, ♂.

linea Stannard. Oreg., Calif. Host: *Quercus agrifolia*.

Periclista linea Stannard, 1949. Amer. Ent. Soc., Trans. 75: 19. ♀, ♂.

Biology: Beer, 1955. Kans. Ent. Soc., Jour. 28: 19-26 (also description of larva).

media (Norton). N. H., Mass. to Fla. w. to Man., Wis., Iowa. Host: *Quercus alba*.

Selandria media Norton, 1864. Ent. Soc. Phila., Proc. 3: 9. ♀, ♂.

Selandria (Hoplocampa) floridana Cresson, 1880. Amer. Ent. Soc., Trans. 8: 12. ♂.

Periclista purpuridorsum Dyar, 1898. N. Y. Ent. Soc., Jour. 6: 129. ♀, ♂.

Periclista confusa MacGillivray, 1908. Canad. Ent. 40: 291. ♀.

Periclista similis Rohwer, 1917. U. S. Natl. Mus., Proc. 53: 155. ♀.

Taxonomy: Middleton, 1922. U. S. Natl. Mus., Proc. 61: 4-6 (larva, *similis*).

naranga Stannard. Calif.

Periclista naranga Stannard, 1949. Amer. Ent. Soc., Trans. 75: 20. ♀.

spicula Stannard. Calif.

Periclista spicula Stannard, 1949. Amer. Ent. Soc., Trans. 75: 21. ♂.

SPECIES GROUP MELANOCEPHALA

bipartita (Cresson). Mass. to Fla. w. to Mo., Tex. Host: *Quercus coccinea*.

Selandria (Blennocampa) bipartita Cresson, 1880. Amer. Ent. Soc., Trans. 8: 12. ♂.

Mogerus emarginatus MacGillivray, 1895. Canad. Ent. 25: 281. ♂.

Isodyctium murtfeldtii Dyar, 1898. N. Y. Ent. Soc., Jour. 6: 135. ♀.

diluta (Cresson). Maine, Ont. to Fla. w. to Wis., Kans., Tex. Host: *Quercus alba*, *Q. prinus*.

Selandria (Monophadnus) diluta Cresson, 1880. Amer. Ent. Soc., Trans. 8: 12. ♀.

Isodyctium subgregarium Dyar, 1898. N. Y. Ent. Soc., Jour. 6: 134. ♀, ♂.

Taxonomy: Smith, 1969. U. S. Dept. Agr., Tech. Bul. 1397, p. 127 (male).

entella MacGillivray. Oreg., Calif. Ecology: Adults collected from *Quercus*.

Periclista entella MacGillivray, 1923. Ill. Univ. Bul. 20(50): 29. ♂.

Taxonomy: Smith, 1969. U. S. Dept. Agr., Tech. Bul. 1397, p. 128 (female).

marginicollis (Norton). Conn., Ont. to Fla. w. to Iowa, Kans., Okla., Tex. Host: *Carya*, *Quercus alba*(?).

Tenthredo (Allantus) marginicollis Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., p. 583. Nom. nud.

Selandria marginicollis Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 220. ♀.

Mogerus caryicolus Dyar, 1897. N. Y. Ent. Soc., Jour. 5: 193. ♀, ♂.

Isodyctium (!) *atratum* MacGillivray, 1908. Canad. Ent. 40: 290. ♀.

Periclista hickoriae Rohwer, 1917. U. S. Natl. Mus., Proc. 53: 154. ♀.

Periclista xanthognatha Rohwer, 1917. U. S. Natl. Mus., Proc. 53: 156. ♀.

Periclista plesia Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 211. ♀.

Periclista pecanivora Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 212. ♀.

Taxonomy: Middleton, 1922. U. S. Natl. Mus., Proc. 61: 2-4 (larva). —Smith, 1969. U. S. Dept. Agr., Tech. Bul. 1397, p. 129 (larva).

rileyi (Cresson). Fla., Ill., Mo., Tex.

Selandria (*Monophadnus*) *rileyi* Cresson, 1880. Amer. Ent. Soc., Trans. 8: 13. ♀.

Isodyctium floridense Dyar, 1898. N. Y. Ent. Soc., Jour. 6: 134. ♀.

stannardi Smith. Iowa, Tex.

Periclista stannardi Smith, 1969. U. S. Dept. Agr., Tech. Bul. 1397, p. 130. ♀.

sulfurana Stannard. N. Y., Mich., Ill., Iowa. Host: *Quercus*.

Periclista sulfurana Stannard, 1949. Amer. Ent. Soc., Trans. 75: 28. ♀, ♂.

SPECIES GROUP CALIFORNICA

californica Rohwer. Calif.

Periclista californica Rohwer, 1917. U. S. Natl. Mus., Proc. 53: 154. ♀.

electa MacGillivray. Oreg., Calif. Ecology: Adults collected from *Quercus*.

Periclista electa MacGillivray, 1923. Psyche 30: 80. ♂.

vergorba Stannard. Calif.

Periclista vergorba Stannard, 1949. Amer. Ent. Soc., Trans. 75: 32. ♀.

Genus PERICLISTA Subgenus NEOCHARACTUS MacGillivray

Neocharactus MacGillivray, 1908. Canad. Ent. 40: 293.

Type-species: *Neocharactus bakeri* MacGillivray. Monotypic.

Aphanis MacGillivray, 1908. Canad. Ent. 40: 295.

Type-species: *Aphanis lobatus* MacGillivray. Orig. desig.

bakeri (MacGillivray). Calif. Ecology: Adults collected from *Quercus agrifolia*.

Neocharactus bakeri MacGillivray, 1908. Canad. Ent. 40: 293. ♂.

Periclista leucostoma Rohwer, 1909. Canad. Ent. 41: 397. ♀, ♂.

inaequidens (Norton). N. H. to Md. w. to Wis., Ill., Tex. Host: *Quercus alba*.

Selandria inaequidens Norton, 1872. Amer. Ent. Soc., Trans. 4: 84. ♀.

Isodyctium infrequens Dyar, 1898. N. Y. Ent. Soc., Jour. 6: 134. ♀.

pallipes (Provancher). Calif. Ecology: Adults collected from *Quercus agrifolia*, *Q. wislizenii*.

Monophadnus pallipes Provancher, 1895. Nat. Canad. 22: 80. ♀, ♂.

Periclista occidentalis Rohwer, 1909. Canad. Ent. 41: 398. ♀, ♂.

subtruncata Dyar. N. Y. to Fla. w. to Ill., Tex. Host: *Quercus coccinea*.

Tenthredo (*Allantus*) *labiata* Klug, 1818. Mag. Gesell. Naturf. Freunde Berlin 8: 73. ♀.

Preocc. by Geoffroy, 1785.

Periclista subtruncata Dyar, 1898. N. Y. Ent. Soc., Jour. 6: 131. ♀.

Aphanis lobatus MacGillivray, 1908. Canad. Ent. 40: 295. ♀.

Aphanis muricatus MacGillivray, 1908. Canad. Ent. 40: 296. ♀.

Genus MONOPHADNOIDES Ashmead

Monophadnoides Ashmead, 1898. Canad. Ent. 30: 253.

Type-species: *Monophadnus rubi* Harris. Orig. desig.

Claremontia Rohwer, 1909. Canad. Ent. 41: 397.

Type-species: *Claremontia typica* Rohwer. Orig. desig.

Monophadnus subg. *Pseudomonophadnus* Malaise, 1935. Ent. Tidskr. 56: 167.

Type-species: *Tenthredo geniculata* Hartig. Orig. desig.

Monophadnus subg. *Pseudoblennocampa* Malaise, 1935. Ent. Tidskr. 56: 167.

Type-species: *Tenthredo* (*Allantus*) *tenuicornis* Klug. Orig. desig.

A holarctic genus mostly associated with Rosaceae though the host for only one North American species is known.

- atratus* (MacGillivray). N. W. T. (Norman Wells), Alaska s. to Oreg.
Blennocampa atrata MacGillivray, 1893. Canad. Ent. 25: 239. ♀.
Erythraspides ashmeadi Kincaid, 1900. Wash. Acad. Sci., Proc. 2: 345. ♀, ♂.
- conspiculatus* MacGillivray. N. S., Ont. s. to N. C., Tenn.
Monophadnoides conspiculata MacGillivray, 1908. Canad. Ent. 40: 293. ♀.
- geniculatus* (Hartig). Labrador to N. W. T. s. to Ga., Ark., Tex., Colo., Calif.; Europe and Asia.
 Ecology: Widespread. Host: *Rubus*. An extremely variable species in N. Amer.
 Raspberry sawfly.
Tenthredo geniculatus Hartig, 1837. Fam. Blattwespen und Holzwespen, nebst Einleitung Naturgesch. Hym., p. 274.
Selandria (Hoplocampa) rubi Harris, 1845. In Darling, New Haven Hort. Soc., Trans., p. 13.
- Selandria nigella* Cresson, 1880. Amer. Ent. Soc., Trans. 8: 12. ♀.
Monophadnus hudsonicus Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 176. ♂.
Monophadnus atracornis MacGillivray, 1893. Canad. Ent. 25: 239. ♀.
Blennocampa Gillettei Weldon, 1907. Canad. Ent. 39: 304. ♀.
Monophadnoides conspicuus MacGillivray, 1908. Canad. Ent. 40: 293. ♀.
Monophadnoides consobrinus MacGillivray, 1908. Canad. Ent. 40: 294. ♀.
Monophadnoides concessus MacGillivray, 1908. Canad. Ent. 40: 294. ♀.
Monophadnoides crassus MacGillivray, 1908. Canad. Ent. 40: 294. ♀.
Monophadnoides conspersus MacGillivray, 1908. Canad. Ent. 40: 294. ♀.
Monophadnoides costalis MacGillivray, 1908. Canad. Ent. 40: 295. ♀.
Monophadnoides coracinus MacGillivray, 1908. Canad. Ent. 40: 295. ♂.
Monophadnoides collaris MacGillivray, 1908. Canad. Ent. 40: 295. ♀.
Aphanisus nigrilus MacGillivray, 1908. Canad. Ent. 40: 296. ♀.
Aphanisus(?) lentis Rohwer, 1909. Canad. Ent. 41: 309. ♀, ♂.
Monophadnoides corytus MacGillivray, 1923. Psyche 30: 79. ♂.
Monophadnoides consonus MacGillivray, 1923. Ill. Univ. Bul. 20(50): 25. ♀.
Monophadnoides constitutus MacGillivray, 1923. Ill. Univ. Bul. 20(50): 25. ♀.
Monophadnoides curiosus MacGillivray, 1923. Ill. Univ. Bul. 20(50): 25. ♀.
Monophadnoides kincaidi MacGillivray, 1923. Ill. Univ. Bul. 20(50): 26. ♀.
Monophadnoides shawi MacGillivray, 1923. Ill. Univ. Bul. 20(50): 26. ♀, ♂.
Paracharactus obversus MacGillivray, 1923. Ill. Univ. Bul. 20(50): 28. ♀.
- Biology: Harris, 1850. New England Farmer 2: 33. —Saunders, 1873. Canad. Ent. 5: 101-103. —Riley, 1877. Ill. State Ent. Rpt. 6: 61. —Saunders, 1885. Canad. Ent. 17: 1-2. —Petit, 1900. Mich. Agr. Expt. Sta., Bul. 180: 137-138. —Lowe, 1898. N. Y. State Agr. Expt. Sta., Bul. 150, pp. 251-262.
- osgoodi* Smith. Maine, N. H., Ont.
Monophadnoides osgoodi Smith, 1969. U. S. Dept. Agr., Tech. Bul. 1397, p. 146. ♀.
- pauper* (Provancher). Labrador to Md. w. to Alta., Colo.
Selandria paupera Provancher, 1882. Nat. Canad. 13: 293. ♀.
Monophadnoides cordatus MacGillivray, 1908. Canad. Ent. 40: 294. ♀.
Blennocampa abnorma MacGillivray, 1908. Canad. Ent. 40: 296. ♂.
Blennocampa antennata MacGillivray, 1908. Canad. Ent. 40: 296. ♀.
Blennocampa acuminata MacGillivray, 1908. Canad. Ent. 40: 297. ♀.
Blennocampa adusta MacGillivray, 1908. Canad. Ent. 40: 297. ♀.
Blennocampa angulata MacGillivray, 1908. Canad. Ent. 40: 297. ♀.
Blennocampa aperta MacGillivray, 1908. Canad. Ent. 40: 297. ♀.
Erythraspides tuckeri Rohwer, 1909. Canad. Ent. 41: 145. ♀.
Paracharactus nigrisomus Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 231. ♂.
- quebecensis* Smith. Que.
Monophadnoides quebecensis Smith, 1969. U. S. Dept. Agr., Tech. Bul. 1397, p. 150. ♀.
- typicus* (Rohwer). B. C. to Calif.
Claremontia typica Rohwer, 1909. Canad. Ent. 41: 397. ♀.

TRIBE CERATULINI

Genus CERATULUS MacGillivray

Ceratulus MacGillivray, 1908. *Canad. Ent.* 40: 454.

Type-species: *Ceratulus spectabilis* MacGillivray. Orig. desig.

Only a single species is known for this genus.

spectabilis MacGillivray. *Tex. Host: Cissus incisa.*

Ceratulus spectabilis MacGillivray, 1908. *Canad. Ent.* 40: 454. ♀, ♂.

TRIBE WALDHEIMIINI

Genus WALDHEIMIA Brulle

Waldheimia Brulle, 1846. *In* Lepeletier, *Hist. Nat. Ins. Hym.*, p. 665.

Type-species: *Tenthredo brasiliensis* Lepeletier. Orig. desig.

Zarca Cameron, 1878. *Ent. Soc. London, Trans.* p. 142.

Type-species: *Zarca apicalis* Cameron. Monotypic.

Parazarca Ashmead, 1898. *In* Dyar, N. Y. *Ent. Soc., Jour.* 6: 128. N. syn.

Type-species: *Parazarca fumipennis* Ashmead. Orig. desig.

Calozarca Ashmead, 1898. *In* Dyar, N. Y. *Ent. Soc., Jour.* 6: 129. N. syn.

Type-species: *Selandria fascipennis* Norton. Orig. desig.

A large genus found from southwestern United States to Argentina. Of the more than 70 described species, only one reaches north of Mexico.

Revision: Malaise, 1949. *Arkiv for Zool.* 42A: 33-58 (key to species).

bedeae Smith. S. Ariz.; Mexico.

Waldheimia bedeae Smith, 1969. U. S. Dept. Agr., *Tech. Bul.* 1397, p. 156. ♀.

Genus ERYTHRASPIDES Ashmead

Erythraspides Ashmead, 1898. *In* Dyar, N. Y. *Ent. Soc., Jour.* 6: 128.

Type-species: *Tenthredo pygmaea* Say. Orig. desig.

A small genus found also in Mexico and Central America.

carbonarius (Cresson). Maine, Ont. to Ga. w. to Sask., Colo., *Tex. Host: Oenothera.*

Selandria carbonaria Cresson, 1880. *Amer. Ent. Soc., Trans.* 8: 12. ♀.

Selandria parva Cresson, 1880. *Amer. Ent. Soc., Trans.* 8: 12. ♂.

Blennocampa abjecta MacGillivray, 1921. *Brooklyn Ent. Soc., Bul.* 16: 22. ♀.

Blennocampa absona MacGillivray, 1921. *Brooklyn Ent. Soc., Bul.* 16: 22. ♂.

vitis (Harris). N. H. to Fla. w. to Iowa, Ark., La. *Host: Vitis.* Grape sawfly.

Tenthredo pygmaea Say, 1824. *In* Keating, *Narr. Long's 2nd Exped. (App.)* p. 318. ♀, ♂.

Preocc. by Klug, 1814.

Tenthredo (Selandria) vitis Harris, 1835. *In* Hitchcock, *Rpt. Geol. Mineral. Bot. Zool.*

Mass., p. 586. *Nom. nud.*

Selandria vitis Harris, 1841. *Rpt. Ins. Mass. Injurious to Veg., Ed. 1*, p. 378.

Selandria caryae Norton, 1869. *In* Packard, *Guide Study Ins.*, p. 224. Adults only, larvae are *Eriocampa juglandis* (Fitch).

Biology: Horsfall, 1929. *Ent. News* 40: 174-177.

Genus HALIDAMIA Benson

Halidamia Benson, 1939. *Ent. Monthly Mag.* 75: 111.

Type-species: *Blennocampa affinis* (Fallen). Orig. desig.

The single species in this genus was probably introduced into North America.

affinis (Fallen). Conn. to Md. w. to Ont., Wis.; Europe. Probably introduced. *Host: Galium.*

Host recorded in Europe.

Hylotoma affinis Fallen, 1807. *Svenska Vetensk. Akad., Handl.* 28: 207.

Hylotoma assimilis Fallen, 1807. *Svenska Vetensk. Akad., Handl.* 28: 204. ♀.

Tenthredo (Allantus) hyalina Klug, 1814. Mag. Gesell. Naturf. Freunde Berlin 8: 58. ♀.
Blennocampa formosella Costa, 1882. Rend. Accad. Sci. fis Napoli, p. 198.

SUBFAMILY ALLANTINAE

Members of this subfamily are associated with various plants. Some hosts are strawberries, raspberries, roses, violets, and dogwood. After feeding is completed, larvae of many species bore into fruits, wood, or other suitable substances for pupating or overwintering. The occurrence of larvae in these secondary hosts is sometimes more significant if in cultivated fruits or structural wood, but it is purely incidental depending on their proximity to the true host plant. Adults of this subfamily are medium to large sawflies and may be either rather stout or elongated.

TRIBE ERIOCAMPINI

Genus PSEUDOSIOBLA Ashmead

Pseudosiobla Ashmead, 1898. Canad. Ent. 30: 308.

Type-species: *Allantus excavatus* Norton. Orig. desig.

cephalanthi Rohwer. Mass., N. Y., Mo. Host: *Cephalanthus occidentalis*.

Pseudosiobla cephalanthi Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 404. ♂.

excavata (Norton). Maine to Fla. w. to Ill., Tex. Host: *Cephalanthus*.

Allantus excavatus Norton, 1862. Ent. Soc. Phila., Proc. 1: 143. ♀.

Siobla robusta Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 253. ♀.

Taxonus floridanus Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 352. ♂.

Genus ERIOCAMPA Hartig

Eriocampa Hartig, 1837. Fam. Blattwespen und Holzwespen, nebst Einleitung Naturgesch. Hym., p. 279.

Type-species: *Tenthredo ovata* Linnaeus. Desig. by Rohwer, 1911.

Eriocampa subg. *Brachyocampa* Zirngiebl, 1956. Munchen Ent. Gesell. Mitt. 46: 326.

Type-species: *Eriocampa dorpatica* Konow. Orig. desig.

juglandis (Fitch). N. B., Que., Ont. to N. C. w. to Minn., Nebr. Host: *Juglans*.

Tenthredo (Allantus) obesa Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., p. 583. Nom. nud.

Selandria? juglandis Fitch, 1857. N. Y. State Agr. Soc., Trans. 16: 467. Larva.

Allantus obesus Norton, 1860. Boston Jour. Nat. Hist. 7: 260. ♂.

Sciapteryx rotundus Norton, 1867. Amer. Ent. Soc., Trans. 1: 242. ♀.

Eriocampa rotundiformis Rohwer, 1909. Canad. Ent. 41: 16. ♂.

ovata (Linnaeus). Que., Mass., N. Y., Ont., B. C., Wash.; Europe. Probably introduced independently into east and west N. Amer. Host: *Alnus rubra*.

Tenthredo ovata Linnaeus, 1761. Fauna Suecica, Ed. 2, p. 392.

Tenthredo gossypina Retzius, 1783. Genera et Species Insectorum, p. 72.

Tenthredo leucogona Schrank, 1802. Fauna Boica, v. 2, p. 251.

Biology: Bouchard, 1961. Ent. Soc. Quebec, Ann. 6: 69-80. —Borden and Dean, 1971. Ent. Soc. Brit. Columbia, Proc. 68: 26-28 (in B. C.).

Morphology: Hsin, 1935. Ztschr. Angew. Ent. 22: 253-294 (epidermal glands of larva).

Genus DIMORPHOPTERYX Ashmead

Dimorphopteryx Ashmead, 1898. Canad. Ent. 30: 308.

Type-species: *Allantus pinguis* Norton. Orig. desig.

Revision: Rohwer, 1915. U. S. Natl. Mus., Proc. 48: 445-448.

Taxonomy: Middleton, 1915. U. S. Natl. Mus., Proc. 48: 497-501 (larvae).

abnormis Rohwer. Ont., Maine to N. C. w. to Sask., Mont., Ill. Host: *Prunus*, *Pyrus*, *Amelanchier*, *Crataegus*.

Dimorphopteryx abnormis Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 406. ♀, ♂.

Dimorphopteryx desidiosus MacGillivray, 1923. Ill. Univ. Bul. 20(50): 10. ♀.

Dimorphopteryx ithacus MacGillivray, 1923. Ill. Univ. Bul. 20(50): 10. ♀.

Dimorphopteryx salinus MacGillivray, 1923. Ill. Univ. Bul. 20(50): 11. ♀.

autumnalis Rohwer. Va., Wis. Host: *Quercus*.

Dimorphopteryx autumnalis Rohwer, 1915. U. S. Natl. Mus., Proc. 48: 447. ♀.

Dimorphopteryx quercivora Rohwer, 1915. U. S. Natl. Mus., Proc. 48: 448. ♂.

melanognathus Rohwer. Newfoundland to Va. w. to Ont., Mich. Host: *Betula papyrifera*.

Dimorphopteryx melanognathus Rohwer, 1910. U. S. Natl. Mus., Proc. 38: 205. ♀.

Dimorphopteryx enucleatus MacGillivray, 1923. Ill. Univ. Bul. 20(50): 10. ♀.

Dimorphopteryx scopulosus MacGillivray, 1923. Ill. Univ. Bul. 20(50): 12. ♀.

Biology: Dyar, 1895. Amer. Ent. Soc., Trans. 22: 311 (*pinguis*, not Norton). —Dyar, 1897. N. Y. Ent. Soc., Jour. 8: 199. (*pinguis*, not Norton).

pinguis (Norton). N. S., P. E. I., N. B., Que. to Va. w. to Sask., Colo. Host: *Alnus*, *Betula*.

Allantus pinguis Norton, 1860. Boston Jour. Nat. Hist. 7: 244. ♀.

Sciapteryx punctum Provancher, 1878. Nat. Canad. 10: 72. ♂.

Dimorphopteryx pinguis errans Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 406. ♀, ♂.

Dimorphopteryx coloradensis Rohwer, 1915. U. S. Natl. Mus., Proc. 49: 206. ♀.

Dimorphopteryx oronis MacGillivray, 1923. Ill. Univ. Bul. 20(50): 11. ♀.

Dimorphopteryx morsei MacGillivray, 1923. Ill. Univ. Bul. 20(50): 11. ♀.

Biology: Wong, 1954. Canad. Ent. 86: 154.

virginicus Rohwer. Pa., Ohio s. to Ga. Host: *Castanea dentata*.

Dimorphopteryx pinguis virginica Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 406. ♀, ♂.

Dimorphopteryx castaneae Rohwer, 1915. U. S. Natl. Mus., Proc. 48: 447. ♀, ♂.

TRIBE EMPRIINI

Genus EMPRIA Lepeletier

Empria Lepeletier, 1828. Encycl. Meth., Dict. Ins., p. 571.

Type-species: *Dolerus* (*Empria*) *pallimaculata* Lepeletier. Desig. by Brulle, 1846.

Poecilostoma Dahlbom, 1835. Conspectus Tenthred., Siricid, Oryssin. Scand., p. 13.

Type-species: *Tenthredo guttatum* Fallen. Desig. by Rohwer, 1911.

Prosecria Gistel, 1848. Naturgesch. Thierr. f. hoh. Schul., p. 10. Unnecessary n. name for *Poecilostoma*.

Poecilostoma Thomson, 1870. Opusc. Ent. 2: 265. Emend. of *Poecilostoma*. Preocc. by Huebner, 1819, and four others.

Poecilostomidea Ashmead, 1898. Canad. Ent. 30: 256.

Type-species: *Emphytus maculatus* Norton. Orig. desig.

Tetratneura Ashmead, 1898. Canad. Ent. 30: 256.

Type-species: *Selandria ignotus* Norton. Orig. desig.

Tetratneura Konow, 1905. In Wytsman, Gen. Ins., v. 29, pp. 102, 171. Emend. Preocc. by Hartig, 1814.

Parataxonius MacGillivray, 1908. Canad. Ent. 40: 367.

Type-species: *Taxonius multicolor* Norton. Orig. desig.

Leucempria Enslein, 1913. Deut. Ent. Ztschr., Beih., p. 187.

Type-species: *Tenthredo candidata* Fallen. Orig. desig.

Empria subg. *Triempria* Enslein, 1914. Deut. Ent. Ztschr., Beih., p. 213.

Type-species: *Empria tridens* Konow. Orig. desig.

Species of this holarctic genus show considerable color variation; consequently the long list of synonyms under some species. This genus also extends into Mexico.

Revision: Ross, 1936. Pan-Pacific Ent. 12: 172-178.

alpina Benson. N. W. T., B. C.; Europe. Host: *Salix* spp.

Empria alpina Benson, 1938. Soc. Brit. Ent., Trans. 5: 190, 195. ♀, ♂.

candidata (Fallen). Que., Maine, N. H., N. W. T., Man., Alta., Yukon, B. C. Alaska; Europe to Siberia. Host: *Betula*.

Tenthredo candidata Fallen, 1807. Svenska Vetensk. Akad., Handl. 28: 105.

Tenthredo (*Allantus*) *repanda* Klug, 1814. Mag. Gesell. Naturf. Freunde Berlin 8: 77. ♀.

Taxonomy: Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 390 (distribution).

coryli (Dyar). N. H., N. Y. w. to Wis., Iowa, Mo. Host: *Corylus*.

Harpiphorus maculatus var. *coryli* Dyar, 1897. N. Y. Ent. Soc., Jour. 5: 194. ♀, larva.

Empria mellipes Rohwer, 1910. Canad. Ent. 42: 175. ♀.

Empria caetrata MacGillivray, 1911. Canad. Ent. 43: 305. ♀.

Biology: Dyar, 1897. N. Y. Ent. Soc., Jour. 5: 194.

ignota (Norton). Maine to Pa. w. to Alaska, B. C., Wash., Oreg., Calif. Ecology: Widespread.

Adult captured from *Salix*.

Selandria ignotus Norton, 1867. Amer. Ent. Soc., Trans. 1: 257. ♀.

Monostegia kincaidi MacGillivray, 1893. Canad. Ent. 25: 239. ♀.

Empria calda MacGillivray, 1911. Canad. Ent. 43: 307. ♀.

Empria cata MacGillivray, 1911. Canad. Ent. 43: 307. ♂.

Empria castigata MacGillivray, 1911. Canad. Ent. 43: 309. ♀.

Empria casca MacGillivray, 1911. Canad. Ent. 43: 310. ♀.

Empria evecta MacGillivray, 1911. Canad. Ent. 43: 310. ♀.

Empria confirmata MacGillivray, 1911. Canad. Ent. 43: 341. ♀.

Empria concitata MacGillivray, 1911. Canad. Ent. 43: 342. ♂.

Empria culpata MacGillivray, 1911. Canad. Ent. 43: 343. ♀.

Empria cerina MacGillivray, 1921. Psyche 28: 34. ♀, ♂.

Empria cirrha MacGillivray, 1923. Ill. Univ. Bul. 20(50): 16. ♀.

Empria cithara MacGillivray, 1923. Ill. Univ. Bul. 20(50): 17. ♀.

improba (Cresson). Maine, Ont. w. to N. W. T., Alaska, B. C., Oreg., Colo., Calif. Ecology:

Widespread. Adults collected from *Salix*.

Emphytus improbus Cresson, 1880. Amer. Ent. Soc., Trans. 8: 11. ♀.

Empria salicis Rohwer, 1910. Canad. Ent. 42: 174. ♀, ♂.

Empria contexta MacGillivray, 1911. Canad. Ent. 43: 345. ♀.

maculata (Norton). Newfoundland to N. C. w. to Alaska, B. C., Oreg., Calif. Ecology:

Widespread; recorded from nearly every state in its range. Sometimes a pest of cultivated strawberries. Host: *Fragaria*, *Potentilla*, *Rubus*.

Emphytus maculatus Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 157. ♀, ♂.

Poecilostoma conveza MacGillivray, 1909. Canad. Ent. 41: 402. ♀.

Empria distincta Rohwer, 1910. Canad. Ent. 42: 173. ♀.

Empria submaculata Rohwer, 1910. Canad. Ent. 42: 174. ♀, ♂.

Empria melanostoma Rohwer, 1910. Canad. Ent. 42: 175. ♀, ♂.

Monosoma maura Rohwer, 1910. U. S. Natl. Mus., Proc. 38: 204. ♀.

Empria callosa MacGillivray, 1911. Canad. Ent. 43: 305. ♀.

Empria celsa MacGillivray, 1911. Canad. Ent. 43: 306. ♀.

Empria callida MacGillivray, 1911. Canad. Ent. 43: 306. ♀.

Empria caprina MacGillivray, 1911. Canad. Ent. 43: 307. ♀, ♂.

Empria casta MacGillivray, 1911. Canad. Ent. 43: 308. ♀, ♂.

Empria celebrata MacGillivray, 1911. Canad. Ent. 43: 308. ♀.

Empria captiosa MacGillivray, 1911. Canad. Ent. 43: 308. ♀.

Empria caeca MacGillivray, 1911. Canad. Ent. 43: 308. ♀.

Empria cariosa MacGillivray, 1911. Canad. Ent. 43: 309. ♀.

Empria candidula MacGillivray, 1911. Canad. Ent. 43: 310. ♀.

Empria canora MacGillivray, 1911. Canad. Ent. 43: 310. ♀.

Empria cauta MacGillivray, 1911. Canad. Ent. 43: 311. ♀.

Empria condensa MacGillivray, 1911. Canad. Ent. 43: 342. ♀.

Empria cumulata MacGillivray, 1911. Canad. Ent. 43: 343. ♀.

Empria curata MacGillivray, 1911. Canad. Ent. 43: 345. ♀.

Empria cuneata MacGillivray, 1911. Canad. Ent. 43: 345. ♀.

Empria cupida MacGillivray, 1911. Canad. Ent. 43: 346. ♀.

Empria schwarzi Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 398. ♀.

Empria cadurca MacGillivray, 1923. Canad. Ent. 55: 158. ♀, ♂.

Biology: Riley, 1867. Prairie Farmer, May, p. 348. —Petit, 1899. Mich. Agr. Expt. Sta. Bul. 175: 365. —Webster, 1915. Iowa Agr. Expt. Sta. Bul. 162, 20 pp. —Webster, 1916. Iowa Acad. Sci., Proc. 23: 291-297. —Neiswander, 1944. Ohio Agr. Expt. Sta. Bul. 651: 35.

mexicana (Cameron). N. Mex., Ariz.; Mexico.

Poecilosoma mexicanum Cameron, 1883. Biol.-Cent. Amer., v. 1, p. 34.

Empria arizonensis Rohwer, 1910. Canad. Ent. 42: 174. ♀.

multicolor (Norton). N. B., Que. to Ga. w. to Alta., Wash., Oreg., Calif. Ecology: Widespread.

Host: *Alnus*, *Betula papyrifera*, *B. lutea*.

Strongylogaster multicolor Norton, 1862. Boston Soc. Nat. Hist., Proc. 9: 120. ♀, ♂.

Emphytus hullensis Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 25. ♂.

Empria carbacea MacGillivray, 1911. Canad. Ent. 43: 341. ♀.

Aphlodactium maculatum Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 408. ♀.

Aphlodactium multicolor erythrogastrum Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 408. ♀, ♂.

Biology: Wong, 1954. Canad. Ent. 86: 154.

nordica Ross. N. W. T., Man.

Empria nordica Ross, 1936. Pan-Pacific Ent. 12: 175. ♀.

obscurata (Cresson). Maine to Pa. w. to N. W. T., Alaska, B. C., Wash., Oreg., Calif. Ecology: Widespread; sometimes a pest of cultivated strawberries. Host: *Fragaria*. Either a variable species or a species complex.

Selandria obscurata Cresson, 1880. Amer. Ent. Soc., Trans. 8: 15. ♀, ♂.

Poecilosoma punctulata Weldon, 1907. Canad. Ent. 39: 304. ♀, ♂.

Empria affinis Rohwer, 1910. Canad. Ent. 42: 173. ♀.

Empria caudelli Rohwer, 1910. Canad. Ent. 42: 173. ♀.

Empria cava MacGillivray, 1911. Canad. Ent. 43: 306. ♀.

Empria cauduca MacGillivray, 1911. Canad. Ent. 43: 309. ♀.

Empria capillata MacGillivray, 1911. Canad. Ent. 43: 341. ♀.

Empria condita MacGillivray, 1911. Canad. Ent. 43: 342. ♀.

Empria contorta MacGillivray, 1911. Canad. Ent. 43: 343. ♀.

Empria conferta MacGillivray, 1911. Canad. Ent. 43: 344. ♀.

Empria concreta MacGillivray, 1911. Canad. Ent. 43: 344. ♀.

Empria conciliata MacGillivray, 1911. Canad. Ent. 43: 344. ♀.

Empria concisa MacGillivray, 1911. Canad. Ent. 43: 346. ♀.

Empria costata MacGillivray, 1914. Canad. Ent. 46: 103. ♀.

Empria fragariae Rohwer, 1914. Jour. Econ. Ent. 7: 479. ♀.

Empria cista MacGillivray, 1923. Ill. Univ. Bul. 20(50): 16. ♀.

Empria cistula MacGillivray, 1923. Ill. Univ. Bul. 20(50): 16. ♀.

Biology: Malley, 1889. U. S. Dept. Agr., Insect Life 2: 137-140 (*ignota*, not Norton). —Malley, 1890. U. S. Dept. Agr., Insect Life 3: 9-12 (*ignota*, not Norton). —Osborn and Gossard, 1892. Iowa Agr. Expt. Sta. Bul. 18: 512-514 (*ignota*, not Norton). —Webster, 1915. Iowa Agr. Expt. Sta., Bul. 162, 20 pp. (*fragariae*). —Webster, 1916. Iowa Acad. Sci., Proc. 23: 291-297 (*fragariae*).

Genus PHRONTOSOMA MacGillivray

Phrontosoma MacGillivray, 1908. Canad. Ent. 40: 366.

Type-species: *Phrontosoma atrum* MacGillivray. Orig. design.

A small, exclusively North American genus. One unidentified species extends the distribution of this genus to western United States.

belfragei (Cresson). Mass. to Pa. w. to Ont., Wis., Kans., Tex. Ecology: Adults collected from *Cornus*.

Selandria belfragei Cresson, 1880. Amer. Ent. Soc., Trans. 8: 15. ♀.

Caliroa nortonia MacGillivray, 1894. Canad. Ent. 24: 324. ♂.

Phrontosoma atrum MacGillivray, 1908. Canad. Ent. 40: 367. ♂.

Phrontosoma daeckei MacGillivray, 1908. Canad. Ent. 40: 367. ♀.

Phrontosoma collaris MacGillivray, 1908. Canad. Ent. 40: 367. ♀.

Genus MONOSOMA MacGillivray

Monsoma(!) MacGillivray, 1908. Canad. Ent. 40: 368.

Type-species: *Taxonus inferentia* Norton. Orig. desig.

Monosoma Viereck, 1910. N. J. State Mus., Ann. Rpt. 1909, p. 583. Emend.

A small genus with two species, one Nearctic the other Palaearctic.

inferentia (Norton). Newfoundland to N. C. w. to Minn., Ill. Host: *Alnus*.

Poecilostoma inferentia Norton, 1868. Amer. Ent. Soc., Trans. 2: 224. ♂.

Strongylogaster albosectus Provancher, 1878. Nat. Canad. 10: 168. ♀.

Monophadnus lineatus Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 177. ♀. A questionable synonym.

Monosoma inferentia var. *andronosa* Ross, 1932. Canad. Ent. 64: 249. ♀.

Genus MONOSTEGIA Costa

Monostegia Costa, 1859. Fauna del Regno di Napoli, Imen., pt. 3, p. 60.

Type-species: *Tenthredo* (*Allantus*) *luteola* Klug. Desig. by Ross, 1951.

Poecilostoma subg. *Nematoceros* Konow, 1896. Wien. Ent. Ztg. 15: 52, 54.

Type-species: *Tenthredo* (*Allantus*) *luteola* Klug. Monotypic.

abdominalis (Fabricius). Que., Ont. to N. J., Pa. w. to Ohio; Europe to Siberia. Probably introduced. Host: *Lysimachia nummularia*, *L. vulgaris*, *L. terrestris*, *Anagallis*.

Tenthredo abdominalis Fabricius, 1798. Sup. Ent. System., p. 216. ♀.

Tenthredo (*Allantus*) *luteola* Klug, 1814. Mag. Gesell. Naturf. Freunde Berlin 8: 48.

Monostegia martini MacGillivray, 1908. Canad. Ent. 40: 366. ♀.

Monostegia nearctica Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 209. ♀, ♂.

Biology: Price, 1970. Canad. Ent. 102: 491-495.

Genus AMETASTEGIA Costa

Ametastegia Costa, 1882. Accad. delle Sci. Fis. e Mat. Napoli, Rend. 21(10): 198.

Type-species: *Ametastegia fulvipes* Costa. Monotypic.

Aomodyctium Ashmead, 1898. Canad. Ent. 30: 309. No included species.

Type-species: *Strongylogaster abnormis* Provancher. Desig. by Rohwer, 1911.

Protemphytus Rohwer, 1909. Canad. Ent. 41: 92.

Type-species: *Emphytus coloradensis* Weldon. Monotypic.

Emphytina Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 399.

Type-species: *Emphytina pulchella* Rohwer. Orig. desig.

Simplemphytus MacGillivray, 1914. Canad. Ent. 46: 363.

Type-species: *Simplemphytus pacificus* MacGillivray. Monotypic.

Unitaxonus MacGillivray, 1921. Psyche 28: 32.

Type-species: *Unitaxonus repentinus* MacGillivray. Orig. desig.

Species of this holarctic genus feed on herbaceous plants. On maturing, larvae bore into soft substances to form a pupal cell. This secondary host may be apples, other fruits, soft wood, or pith of other plants. Such records as hosts for species of this genus do not constitute the true host on which the larvae feed.

Revision: Ross, 1937. Arb. uber Morph. u. Taxonom. Ent. 4: 84-91.

aperta (Norton). Newfoundland to N. C. w. to Mich., Colo.

Tenthredo (*Emphytus*) *aperta* Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., p. 583. Nom. nud.

Emphytus apertus Norton, 1861. Boston Nat. Hist. Soc., Proc. 8: 155. ♀.

Emphytus leucostoma Rohwer, 1908. N. Y. Ent. Soc., Jour. 16: 110. ♀. Preocc. by Costa, 1890.

Emphytina plesia Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 402. N. name.

articulata (Klug). Que., Maine to Fla. w. to Minn., Iowa, Ark., Tex. Host: *Rumex*, *Polygonum*.

Tenthredo (*Emphytus*) *articulatus* Klug, 1814. Mag. Gesell. Naturf. Freunde Berlin 8: 284. ♂.

Dolerus inornatus Say, 1824. In Keating, Narr. Long's 2nd Exped., v. 2, (App.) p. 319. ♀.

Emphytus halitus MacGillivray, 1923. Ill. Univ. Bul. 20(50): 14. ♀.

Taxonomy: Smith, 1973. Ent. Soc. Wash., Proc. 75: 29.

- coloradensis** (Weldon). Labrador, Colo., Alta., B. C., Oreg., Calif.
Emphytus coloradensis Weldon, 1907. *Canad. Ent.* 39: 304. ♂.
Emphytus hiulcus MacGillivray, 1923. *Ill. Univ. Bul.* 20(50): 15. ♀.
- equiseti** (Fallen). Que., Maine to N. C. w. to Alaska, Oreg.; Europe to Siberia. Ecology:
 Widespread. Host: *Rumex*, *Polygonum*.
Tenthredo equiseti Fallen, 1808. *Svenska Vetensk. Akad., Handl.* 29: 60.
Tenthredo (Allantus) bicolor Klug, 1814. *Mag. Gesell. Naturf. Freunde Berlin* 8: 204. ♀, ♂.
Tenthredo bizonata Zetterstedt, 1838. *Ins. Lapp.*, v. 1, p. 344. ♀.
Taxonus innominatus MacGillivray, 1901. *N. Y. State Mus. Bul.* 47: 585. ♀.
Strongylogastroides depressata MacGillivray, 1921. *Psyche* 28: 31. ♀.
Unitaxonus repentinus MacGillivray, 1921. *Psyche* 28: 31. ♀, ♂.
Unitaxonus rumicis MacGillivray, 1921. *Psyche* 28: 31. ♀.
Hemitaxonus dedititus MacGillivray, 1923. *Psyche* 30: 77. ♂.
Strongylogastroides rufocinctella MacGillivray, 1923. *Ill. Univ. Bul.* 20(50): 32. ♀.
- glabrata** (Fallen). N. S., Que. to Md. w. to B. C., Wash., Oreg.; Europe to Siberia. Ecology:
 Widespread. If adjacent to host, larva commonly bores into apples or other fruits to pupate. Host: *Rumex*. Dock sawfly.
Tenthredo glabrata Fallen, 1808. *Svenska Vetensk. Akad., Handl.* 29: 108.
Tenthredo (Allantus) agilis Klug, 1814. *Mag. Gesell. Naturf. Freunde Berlin* 8: 208. ♀, ♂.
Tenthredo (Allantus) rufipes Lepeletier, 1823. *Monog. Tenthred.*, p. 239. ♀.
Taxonus nigrisoma Norton, 1862. *Boston Soc. Nat. Hist., Proc.* 9: 119. ♀.
Strongylogaster abnormis Provancher, 1885. *Addit. Corr. Faune Ent. Canada Hym.*, p. 10. ♀, ♂.
Strongylogastroides potulenta MacGillivray, 1923. *Ill. Univ. Bul.* 20(50): 31. ♀.
- Biology: Chittenden and Titus, 1905. *U. S. Dept. Agr. Bul.* 54: 40-43. — Webster, 1908. *Jour. Econ. Ent.* 1: 310-311 (in apples). — Dustan and Gilliatt, 1916. *Ent. Soc. Nova Scotia, Proc.*, pp. 45-48. — Newcomer, 1916. *U. S. Dept. Agr., Bul.* 265, 40 pp. — Blackman and Stage, 1924. *N. Y. State Col. Forestry, Syracuse Univ., Tech. Pub.* 17, v. 24, p. 153 (in dead and decaying hickory). — Zuk, 1961. *Ent. Soc. Brit. Columbia, Proc.* 58: 21 (boring holes in cedar siding).
- pallipes** (Spinola). Newfoundland to Md. w. to B. C., Oreg., Calif.; Europe to Siberia; Iceland. Ecology: Widespread. Host: *Viola*. Violet sawfly.
Tenthredo pallipes Spinola, 1808. *Insectorum Liguriaie*, v. 2, p. 19.
Tenthredo (Emphytus) grossulariae Klug, 1814. *Mag. Gesell. Naturf. Freunde Berlin* 8: 283. ♀.
Dolerus leucopodus Lepeletier, 1823. *Monog. Tenthred.*, p. 119. ♀.
Tenthredo pallipes Provancher, 1878. *Nat. Canad.* 10: 66. ♀, ♂. Homonym and Synonym.
Emphytus canadense Kirby, 1882. *List Hym. Brit. Mus.*, v. 1, p. 204. N. name for *pallipes* Provancher.
Emphytus pallidipes Dalla Torre, 1894. *Cat. Hym.*, v. 1, p. 119. Emend.
Empria cavata MacGillivray, 1911. *Canad. Ent.* 43: 305. ♀.
Empria cetaria MacGillivray, 1921. *Psyche* 28: 33. ♀.
Emphytus halesus MacGillivray, 1923. *Ill. Univ. Bul.* 20(50): 13. ♀.
Emphytus heroicus MacGillivray, 1923. *Ill. Univ. Bul.* 20(50): 14. ♀.
Emphytus hiatus MacGillivray, 1923. *Ill. Univ. Bul.* 20(50): 14. ♀.
Emphytus hospitus MacGillivray, 1923. *Ill. Univ. Bul.* 20(50): 15. ♀.
Emphytus hyacinthus MacGillivray, 1923. *Ill. Univ. Bul.* 20(50): 16. ♀.
- Biology: Dyar, 1894. *Canad. Ent.* 26: 185 (*canadensis*).
- recens** (Say). Newfoundland to Ala. w. to Alaska, B. C., Oreg. Ecology: Widespread. Host: *Polygonum*. Several species are currently going under this name.
Emphytus recens Say, 1836. *Boston Jour. Nat. Hist.* 1: 221. ♂.
Emphytus stramineipes Cresson, 1880. *Amer. Ent. Soc., Trans.* 8: 52. ♀. A questionable synonym.
Emphytus angustus Kincaid, 1900. *Wash. Acad. Sci., Proc.* 2: 360. ♂. A questionable synonym.
Emphytina pulchella Rohwer, 1911. *U. S. Natl. Mus., Proc.* 41: 400. ♀.
Emphytina pallidiscapa Rohwer, 1911. *U. S. Natl. Mus., Proc.* 41: 401. ♀, ♂.

- Emphytina virginica* Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 401. ♀.
Emphytus yuasi MacGillivray, 1921. Psyche 28: 31. ♀.
tener (Fallen). Que., Ont. to Va. w. to B. C., Wash., Oreg.; Europe to Siberia. Ecology:
 Widespread. Host: *Rumex*.
Tenthredo tener Fallen, 1808. Svenska Vetensk. Akad., Handl. 29: 109.
Tenthredo (*Emphytus*) *patellatus* Klug, 1814. Mag. Gesell. Naturf. Freunde Berlin 8: 283.
 ♀, ♂.
Dolerus luctuosus Lepeletier, 1823. Monog. Tenthred., p. 119. ♀, ♂.
Dolerus nigrinus Lepeletier, 1823. Monog. Tenthred., p. 120. ♂.
Simplemphytus pacificus MacGillivray, 1914. Canad. Ent. 46: 363. ♀, ♂.
Emphytina vanduzeei Rohwer, 1915. U. S. Natl. Mus., Proc. 49: 205. ♀.
Empria columna MacGillivray, 1923. Brooklyn Ent. Soc., Bul. 18: 54. ♀.
Emphytus haliartus MacGillivray, 1923. Ill. Univ. Bul. 20(50): 14. ♀.
Emphytus haustus MacGillivray, 1923. Ill. Univ. Bul. 20(50): 14. ♂.

Genus APHILODYCTIUM Ashmead

- Aphilodyctium* Ashmead, 1898. Canad. Ent. 30: 310.
 Type-species: *Strongylogaster rubripes* Cresson. Orig. desig.
Polytaxonus MacGillivray, 1908. Canad. Ent. 40: 368.
 Type-species: *Taxonus robustus* Provancher. Orig. desig.
 The single species in this genus is found only in North America.
 Taxonomy: Ross, 1937. Arb. uber Morph. u. Taxonom. Ent. 4: 90.
fidus (Cresson). Que., Maine to Md. w. to B. C., Wash., Oreg., Calif. Ecology: Widespread.
 Host: *Rosa*.
Strongylogaster fidus Cresson, 1880. Amer. Ent. Soc., Trans. 8: 19. ♀.
Strongylogaster rubripes Cresson, 1880. Amer. Ent. Soc., Trans. 8: 20. ♀.
Taxonus robustus Provancher, 1882. Nat. Canad. 13: 294. ♀.
Taxonus parens Provancher, 1889. Addit. Corr. Faune Ent. Canada Hym., p. 9.
Taxonus lenis Rohwer, 1908. N. Y. Ent. Soc., Jour. 16: 110. ♀, ♂.
Aphilodyctium rubripes nigratarsis Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 408. ♀, ♂.
Taxonus inclinatus MacGillivray, 1923. Psyche 30: 78. ♂.

TRIBE ALLANTINI

Genus ALLANTUS Panzer

- Allantus* Panzer, 1801. Faunae Ins. German., heft 82, pl. 12.
 Type-species: *Tenthredo* (*Allantus*) *togatus* Panzer. Monotypic.
Emphytus Klug, 1813. Mag. Gesell. Naturf. Freunde Berlin 7: 273.
 Type-species: *Tenthredo cincta* Linnaeus. Desig. by Curtis, 1833.
 This is a much larger genus in the Palearctic region. Three of the seven North American forms were introduced.
 Revision: Ross, 1937. Arb. uber Morph. u. Taxonom. Ent. 4: 91.
 Taxonomy: Wong, 1966. Canad. Ent. 98: 852-854.
albolabris (Rohwer). Sask., Alaska, B. C., Wash., Oreg.
Emphytus mellipes var. *albolabris* Rohwer, 1917. U. S. Natl. Mus., Proc. 53: 152. ♀.
Emphytus genitus MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 163. ♀.
basalis (Klug). Newfoundland, N. Y., Tenn.; Europe to Siberia, China. Introduced. Host: *Rosa*.
Tenthredo (*Emphytus*) *basalis* Klug, 1814. Mag. Gesell. Naturf. Freunde Berlin 8: 282. ♂.
cinctus (Linnaeus). Newfoundland to Va. w. to B. C., Wash.; Europe to Siberia. Ecology:
 Widespread; most commonly a pest of cultivated roses. Introduced (?). Host: *Rosa*,
Fragaria. Curled rose sawfly.
Tenthredo cinctus Linnaeus, 1758. Syst. Nat., Ed. 10, v. 1, p. 557.
Tenthredo togatus Zetterstedt, 1838. Ins. Lapp., v. 1, p. 342. ♀, ♂.
Dolerus cingulatus Blanchard, 1840. Hist. Nat. Ins., v. 3, p. 240.
Emphytus neglectus Zaddach, 1859. Programm Friedr. Col. Konigsberg, p. 27. ♂.

Emphytus cinctipes Norton, 1867. Amer. Ent. Soc., Trans. 1: 229. ♀, ♂.

Biology: Jack, 1889. Psyche 5: 279. — Britton, 1916. Conn. (State) Agr. Expt. Sta., Ann. Rpt. 1915, pt. 2, pp. 185-186. — Middleton, 1922. U. S. Dept. Agr., Farmers' Bul. 1252, 4 pp. — McNay, 1958. Canad. Ins. Pest Rev. 36: 141 (on strawberry).

Morphology: Will, 1933. Pa. Acad. Sci., Proc. 7: 30-32 (wing venation variations).

mellipes (Norton). N. B., Que. to Fla. w. to Alta., Colo. Host: *Fragaria*.

Tenthredo (Emphytus) mellipes Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., p. 583. Nom. nud.

Emphytus mellipes Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 155. ♀.

Emphytus gillettei MacGillivray, 1902. In Johnson, Colo. Expt. Sta., Ann. Rpt. 15: 113. ♀.

Biology: Johnson, 1902. Colo. Expt. Sta., Ann. Rpt. 15: 113-114.

nigritibialis Rohwer. N. J., Va; Siberia, China. Possibly introduced. Host: *Rosa*(?). May be only a color form of *cinctus* (L.).

Allantus cinctus nigritibialis Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 407. ♀. Described from specimens intercepted in New Jersey from Hong Kong.

umbonatus Wong. Ont., Man., Sask., Alta. Host: *Betula*.

Allantus umbonatus Wong, 1966. Canad. Ent. 98: 852. ♀.

viennensis (Schränk). N. Y. (Tompkins Co.); Europe. Introduced. Host: *Rosa*, *Rubus*.

Tenthredo Viennensis Schränk, 1781. Enum. Ins. Austr., p. 331.

Taxonomy: Smith, 1975. Coop. Econ. Ins. Rpt. 25 (10): 163-165 (first U. S. record).

Biology: Kartasheva, 1964. Zashch. Rast. ot Vred. i Boleznei 9 (10): 41-42. — Scheibelreiter, 1973. Ztschr. Angewandte Ent. 72: 243-244.

Genus MACREMPHYTUS MacGillivray

Macremphytus MacGillivray, 1908. Canad. Ent. 40: 368.

Type-species: *Harpiphorus varianus* Norton. Orig. desig.

Larvae of this North American genus feed on *Cornus* species of the osier dogwood group. After feeding, larvae sometimes bore into wood to form pupal cells.

lovetti MacGillivray. Alta., Mont., B. C., Idaho, Oreg. Ecology: Adults collected from *Cornus*.

Macremphytus lovetti MacGillivray, 1923. Psyche 30: 77. ♀.

semicornis (Say). Newfoundland to N. Y. w. to B. C. (Terrace), Man., Minn., Ill. Host: *Cornus*.

Emphytus semicornis Say, 1836. Boston Jour. Nat. Hist. 1: 220. ♀.

Macremphytus bicornis MacGillivray, 1923. Ill. Univ. Bul. 20(50): 21. ♀.

tarsatus (Say). N. B., Que. to Fla. w. to Minn., Ill., Kans., Tex. Host: *Cornus* sp., *C. alternifolia*.

Tenthredo (Emphytus) tarsata Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool.

Mass., p. 583. Nom. nud.

Emphytus tarsatus Say, 1836. Boston Jour. Nat. Hist. 1: 220. ♀.

Emphytus bollii Norton, 1872. Amer. Ent. Soc., Trans. 4: 80. ♀.

Harpiphorus intermedius Dyar, 1900. N. Y. Ent. Soc., Jour. 8: 30. ♀, larva.

testaceus (Norton). Maine, Ont. to Ga. w. to Man., Minn., Colo. Host: *Cornus* sp., *C. stolonifera* *C. candidissima*.

Emphytus (Harpiphorus) testaceus Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 156. ♀.

Emphytus (Harpiphorus) varianus Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 156. ♀, ♂.

Emphytus (Harpiphorus) versicolor Norton, 1867. Amer. Ent. Soc., Trans. 1: 230. ♀.

Biology: Jack, 1889. Garden and Forest 2: 520. — Riley and Howard, 1890. U. S. Dept. Agr., Insect Life 2: 239-243. — Will, 1944. Pa. Acad. Sci., Proc. 18: 48. — Will, 1959. Pa. Acad. Sci., Proc. 33: 214.

Morphology: Kreiger, Gilvert, and Wilkinson, 1970. Jour. Econ. Ent. 63: 1322-1323 (microsomal mixed-function oxidase activity).

Genus TAXONUS Hartig

Taxonus Hartig, 1837. Fam. Blattwespen und Holzwespen, nebst Einleitung Naturgesch. Hym., p. 297.

Type-species: *Tenthredo* (*Allantus*) *nitida* Klug. Desig. by Rohwer, 1911.

Ermilia Costa, 1859. Fauna del Regno di Napoli, Imen., pt. 3, p. 106.

Type-species: *Ermilia pulchella* Costa. Monotypic.

Strongylogastroidea Ashmead, 1898. Canad. Ent. 30: 308.

Type-species: *Allantus apicalis* Say. Orig. desig.

Parasiobla Ashmead, 1898. Canad. Ent. 30: 308.

Type-species: *Allantus rufocinctus* Norton. Orig. desig.

Hypotaxonus Ashmead, 1898. Canad. Ent. 30: 311.

Type-species: *Allantus pallipes* Say. Orig. desig.

This genus is better represented in east Asia and eastern North America than in other parts of the world. Judging from the few records, plants of the Rosaceae serve as hosts.

borealis MacGillivray. Newfoundland to N. C., Tenn. w. to Mich., Wis.

Taxonus borealis MacGillivray, 1895. Canad. Ent. 27: 78. ♀.

epicera (Say). N. H., Ont. to N. C. w. to Wis., Ill. Kans., Tex.

Allantus epicaria Say, 1836. Boston Jour. Nat. Hist. 1: 216. ♂.

pallicoxus (Provancher). N. S., N. B., Que. to Va. w. to Alta., Ill. Host: *Fragaria*.

Tenthredo (*Taxonus*) *unicinctus* Norton, 1862. Boston Soc. Nat. Hist., Proc. 9: 119. ♀, ♂.

Preocc. by Brulle, 1832.

Strongylogaster pallicoxus Provancher, 1885. Addit. Corr. Faune Ent. Canada Hym., p. 11. ♀, ♂.

Strongylogaster pallidicoxis Dalla Torre, 1894. Cat. Hym., v. 1, p. 137. Emend.

Strongylogastroidea rufocinctana MacGillivray, 1923. Ill. Univ. Bul. 20(50): 31. ♀.

pallidicornis (Norton). Que., Maine, Ont. to Fla. w. to Wis., Ill., La. Host: *Rubus*.

Strongylogaster pallidicornis Norton, 1868. Amer. Ent. Soc., Trans. 2: 216. ♀.

pallipes (Say). N. H. to Ga., Ala. w. to Mich., Ill.

Allantus pallipes Say, 1823. West. Quart. Rptr. 2: 72.

Strongylogaster pallidipes Dalla Torre, 1894. Cat. Hym., v. 1, p. 137. Emend.

Strongylogastroidea rufula MacGillivray, 1923. Ill. Univ. Bul. 20(50): 32. ♀.

proximus (Provancher). Que., Maine, Ont. s. to Ga.

Strongylogaster proximus Provancher, 1885. Addit. Corr. Faune Ent. Canada Hym., p. 12. ♀.

Strongylogastroidea rufinerva MacGillivray, 1923. Ill. Univ. Bul. 20(50): 31. ♀.

rufocinctus (Norton). Que., Maine, Ont. to N. C. w. to Minn., Ill., Ark.

Allantus rufocinctus Norton, 1860. Boston Jour. Nat. Hist. 7: 248. ♀, ♂.

Taxonus (*Parasiobla*) *rufocinctus virginicus* Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 405. ♀.

Strongylogastroidea uncinella MacGillivray, 1923. Ill. Univ. Bul. 20(50): 33. ♀.

spiculatus (MacGillivray). Maine to N. C., Tenn. w. to Ohio, W. Va.

Strongylogastroidea spiculata MacGillivray, 1908. Canad. Ent. 40: 369. ♀.

terminalis (Say). N. S., N. B., Que., Ont. to Fla. w. to Minn., Ill., Tex.

Tenthredo (*terminalis*) Say, 1824. In Keating, Narr. Long's 2nd Exped., v. 2 (App.), p. 318. ♀, ♂.

Tenthredo (*Allantus*) *melisoma* Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., p. 583. Nom. nud.

Allantus apicalis Say, 1836. Boston Jour. Nat. Hist. 1: 216.

Allantus abdominalis Norton, 1860. Boston Jour. Nat. Hist. 7: 238. ♀, ♂.

Allantus mellosus Norton, 1860. Boston Jour. Nat. Hist. 7: 287. ♀, ♂.

Strongylogaster rufoculus MacGillivray, 1894. Canad. Ent. 26: 327. ♀.

Strongylogastroidea confusa MacGillivray, 1908. Canad. Ent. 40: 369. ♀.

Strongylogastroidea shermani MacGillivray, 1923. Ill. Univ. Bul. 20(50): 32. ♀.

SUBFAMILY TENTHREDININAE

This subfamily contains most of the larger and more colorful members of the Tenthredinidae. Though commonly collected, hosts and life histories are known for very few species.

Taxonomy: Benson, 1959. Roy. Ent. Soc. London, Proc., Ser. B: Taxonomy 28: 121-127 (tribes).

TRIBE PERINEURINI

Genus *LEUCOPELMONUS* MacGillivray

Leucopelmonus MacGillivray, 1916. Conn. State Geol. and Nat. Hist. Survey Bul. 22: 83.

Type-species: *Leucopelmonus annulatus* MacGillivray. Monotypic.

annulicornis (Harrington). Newfoundland, Que., Ont. s. to N. C.

Tenthredo confusus Norton, 1869. Amer. Ent. Soc., Trans. 2: 241. ♂. Preocc. by Lepeletier, 1823.

Tenthredopsis? *annulicornis* Harrington, 1893. Canad. Ent. 25: 61. ♀, ♂.

Perineura turbata Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 408. ♀, ♂.

Leucopelmonus annulatus MacGillivray, 1916. Conn. State Geol. and Nat. Hist. Survey, Bul. 22: 83. ♀.

TRIBE SCIAPTERYGINI

Genus *ZASCHIZONYX* Ashmead

Zaschizonyx Ashmead, 1898. Canad. Ent. 30: 257.

Type-species: *Hoplocampa montana* Cresson. Orig. desig.

Opisthoneura Ashmead, 1898. Canad. Ent. 30: 287.

Type-species: *Opisthoneura Crevecoeurii* Ashmead. Orig. desig.

Revision: Ross, 1929. Canad. Ent. 61: 272-273.

Taxonomy: Benson, 1959. Roy. Ent. Soc. London, Proc., Ser. B: Taxonomy 28: 127.

montana (Cresson). Ont., Minn., Ill., Iowa, Mo. w. to B. C., Wash., Oreg., Calif. Host: *Symphoricarpos*.

Selandria montana Cresson, 1865. Ent. Soc. Phila., Proc. 4: 244. ♀.

Selandria (Hoplocampa) gentilis Cresson, 1880. Amer. Ent. Soc., Trans. 8: 14. ♂.

Opisthoneura Crevecoeurii Ashmead, 1898. Canad. Ent. 30: 287.

Zaschizonyx(!) *montana* var. *drabula* Ross, 1929. Canad. Ent. 61: 272. ♀.

Zaschizonyx(!) *montana* subsp. *occidentalis* Ross, 1929. Canad. Ent. 61: 272. ♀.

pluricincta (Norton). Ariz., Calif.

Macrophya pluricinctus Norton, 1862. Boston Soc. Nat. Hist., Proc. 9: 118. ♀, ♂.

Macrophya albipes Provancher, 1895. Nat. Canad. 22: 95. ♀, ♂. Preocc. by Geoffroy, 1785.

Labidia doanei Rohwer, 1909. Canad. Ent. 41: 91. ♀.

Macrophya provancheri Rohwer, 1909. Canad. Ent. 41: 328. N. name for *albipes* Provancher.

Macrophya nigricornis Rohwer, 1909. Canad. Ent. 41: 329. ♀, ♂.

Macrophya occidentalis Rohwer, 1909. Canad. Ent. 41: 330. ♂.

Macrophya bakeri Rohwer, 1909. Canad. Ent. 41: 331. ♂.

Macrophya truncata Rohwer, 1909. Canad. Ent. 41: 331. ♀, ♂.

Macrophya pluricinctella Rohwer, 1909. Canad. Ent. 41: 332. ♀.

Macrophya multicincta Rohwer, 1909. Canad. Ent. 41: 333. ♀.

Macrophya melanostoma Rohwer, 1909. Canad. Ent. 41: 333. ♀.

Macrophya napensis Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 410. ♀.

Morphology: Matsuda, 1957. Kans. Ent. Soc., Jour. 30: 99-108 (head).

TRIBE TENTHREDOPSINI

Genus *AGLAOSTIGMA* Kirby

Aglaostigma Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 325.

Type-species: *Aglaostigma eburneiguttatum* Kirby. Monotypic.

Laurentia Costa, 1890. Accad. delle Sci. Fis. e Mat. Napoli, Rend. (ser. 2) 4: 173. Preocc. by Ragonot, 1888.

Type-species: *Laurentia craverii* Costa. Monotypic.

Bivena MacGillivray, 1894. Canad. Ent. 24: 328.

Type-species: *Bivena maria* MacGillivray. Orig. desig.

Homoeoneura Ashmead, 1898. Canad. Ent. 30: 313.

Type-species: *Pachyprotasis delta* Provancher. Orig. desig.

Neopus Viereck, 1910. In Smith, N. J. State Mus., Ann. Rpt. 1909, p. 585.

Type-species: *Tenthredo quattuordecimpunctatus* Norton. Orig. desig.

Macrophypopsis Enslein, 1913. Deut. Ent. Ztschr., Beih., p. 128.

Type-species: *Macrophya nebulosa* Andre. Orig. desig.

Astochus MacGillivray, 1914. Canad. Ent. 46: 107.

Type-species: *Astochus fletcheri* MacGillivray. Orig. desig.

Kincaidia MacGillivray, 1914. Canad. Ent. 46: 107.

Type-species: *Tenthredopsis ruficornia* MacGillivray. Orig. desig.

Parallomma Malaise, 1933. Ent. Tidskr. 54: 53.

Type-species: *Rhogogaster lichtwardti* Konow. Orig. desig.

Neurosiobla Conde, 1935. Notulae Ent. 14: 79.

Type-species: *Neurosiobla malaisei* Conde. Orig. desig.

Laurentina Malaise, 1937. Rev. d'Ent. Franc. 4: 44.

Type-species: *Laurentina ruficornis* Malaise. Orig. desig.

Revision: Ross, 1943. Ent. Soc. Wash., Proc. 45: 79-84.

dilutum (Cresson). Calif.

Tenthredo diluta Cresson, 1880. Amer. Ent. Soc., Trans. 8: 24. ♀.

quattuordecimpunctatum (Norton). Que., Maine, Ont. s. to N. C. Host: *Podophyllum peltatum*.

Tenthredo 14-punctatus Norton, 1862. Ent. Soc. Phila., Proc. 1: 143. ♀, ♂.

rubens (Cresson). Idaho, Nev. B. C., Wash., Oreg., Calif.

Tenthredo rubens Cresson, 1880. Amer. Ent. Soc., Trans. 8: 24. ♂.

Tenthredo Edwardsii Cresson, 1880. Amer. Ent. Soc., Trans. 8: 24. ♀.

Tenthredo atravenus MacGillivray, 1895. Canad. Ent. 27: 283. ♂.

Astochus fletcheri MacGillivray, 1914. Canad. Ent. 46: 108. ♀.

Astochus aldrichi MacGillivray, 1914. Canad. Ent. 46: 137. ♀.

Tenthredo racilia MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 112. ♂.

Tenthredo refractaria MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 113. ♀.

ruficornum (MacGillivray). Wash., Oreg.

Tenthredopsis ruficornia MacGillivray, 1893. Canad. Ent. 25: 242. ♀.

semiluteum (Norton). Que., Maine to S. C. w. to Mont., Iowa, Kans. Host: *Impatiens biflora*.

Tenthredo semiluteus Norton, 1862. Boston Soc. Nat. Hist., Proc. 9: 121. ♀, ♂.

Pachyprotasis delta Provancher, 1878. Nat. Canad. 10: 108. ♀.

Bivena maria MacGillivray, 1894. Canad. Ent. 26: 328. ♀.

jocosa (Provancher). Que., N. H., Mass., Man.

Tenthredo jocosa Provancher, 1882. Nat. Canad. 13: 298. ♀.

Harpiphorus varipictus Harrington, 1889. Canad. Ent. 21: 96. ♀.

Aglaostigma dentatum Ross, 1943. Ent. Soc. Wash., Proc. 45: 82. ♀, ♂.

veedee Ross. Calif.

Aglaostigma veedee Ross, 1943. Ent. Soc. Wash., Proc. 45: 81. ♀, ♂.

TRIBE TENTHREDININI

Genus LAGIUM Konow

Lagium Konow, 1904. Ztschr. System. Hym. Dipt. 4: 246.

Type-species: *Tenthredo atrovioleaceum* Norton. Orig. desig.

Revision: Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 213.

- atroviolaceum** (Norton). Que. to Va. w. to Wis., Ill., Kans. Host: *Sambucus*.
Tenthredo (*Allantus*) *atroviolacea* Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., p. 583. Nom. nud.
Allantus atroviolaceus Norton, 1860. Boston Jour. Nat. Hist. 7: 255. ♀, ♂.
Tenthredo atroviolacea var. *peratra* Dyar, 1897. N. Y. Ent. Soc., Jour. 5: 192. ♂, larva.
Lagium angulabre Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 215. ♂.
Lagium planifrons Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 216. ♀, ♂.
- tardum** (Norton). Mass. to Ga. w. to Wis., Ill., Kans.
Tenthredo (*Allantus*) *tarda* Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., p. 583. Nom. nud.
Allantus tardus Norton, 1860. Boston Jour. Nat. Hist. 7: 246. ♀, ♂.
Lagium erythrogastrum Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 214. ♀.

Genus RHOGOGASTER Konow

Rhogogaster Konow, 1884. Deut. Ent. Ztschr. 28: 257.

Type-species: *Tenthredo viridis* Linnaeus. Desig. by Rohwer, 1911.

Rhogogastera Konow, 1885. Wien. Ent. Ztg. 4: 123. Emend.

Primarily a Palaearctic genus with only four species in North America. Three of the six species groups separated by Benson (1965) are represented on this continent.

Revision: Ross, 1943. Pan-Pacific Ent. 19: 129-136.

Taxonomy: Benson, 1965. Roy. Ent. Soc. London, Proc., Ser. B: Taxonomy 34: 105-112 (world species and species groups).

SPECIES GROUP LATERARIA

- addenda** (Cresson). Mont. and Colo. w. to B. C., Wash., Oreg., Calif.
Tenthredo addenda Cresson, 1880. Amer. Ent. Soc., Trans. 8: 23. ♀.
Tenthredo vittatipes Cresson, 1880. Amer. Ent. Soc., Trans. 8: 24. ♂.
Rhogogaster truncatus Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 211. ♀.
Rhogogaster pitohatus Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 211. ♀.
- lateraria** (Cresson). Alta., Mont., Nev. w. to B. C., Wash., Oreg., Calif.
Tenthredo lateraria Cresson, 1880. Amer. Ent. Soc., Trans. 8: 23. ♀.
Tenthredo retosta MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 109. ♂.

SPECIES GROUP CALIFORNICA

- californica** (Norton). Que. to Yukon s. to N. Y., Man., N. Mex., Utah, Calif.; Norway. Host: *Populus balsamifera*, *P. tremuloides*.
Tenthredo californicus Norton, 1862. Ent. Soc. Phila., Proc. 1: 198. ♀.
Tenthredopsis Evansii Harrington, 1889. Canad. Ent. 21: 98. ♀.
Tenthredo ripula MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 109. ♂.
Rhogogaster polaris Lindqvist, 1964. Notulae Ent. 44: 121. ♂.

Taxonomy: Benson, 1965. Roy. Ent. Soc. London, Proc. Ser. B: Taxonomy 34: 108.

SPECIES GROUP VIRIDIS

- viridis** (Linnaeus). Yukon and Alaska s. to Man., Mont., Calif.; Eurasia, Japan. Host: *Salix*, *Populus*, *Alnus*, *Ranunculus*, *Filipendula*, *Stellaria*, *Circaea*. These hosts recorded in Europe.
Tenthredo viridis Linnaeus, 1758. Syst. Nat., Ed. 10, v. 1, p. 557. ♀.
Rhogogastera ruga MacGillivray, 1923. Canad. Ent. 55: 160. ♀.
Rhogogastera respectus MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 165. ♀.
Rhogogaster similis Lindqvist, 1958. Notulae Ent. 38: 68.

Taxonomy: Benson, 1963. Notulae Ent. 43: 137-138 (wear and damage of saws).

Morphology: Zacwilichowska, 1953. Polski Pismo Ent. 23: 114-128 (innervation and sense organs in wings).

Genus ISCHYROCERAEA Kiaer

Ischyroceraea Kiaer, 1898. Tromsø Mus. Aarsh. 19: 68.

Type-species: *Ischyroceraea hyperborea* Kiaer. Monotypic.

The species below is sometimes given in the genus *Eniscia* Thomson, 1870. However, the only valid type-species designation of *Eniscia* is *Tenthredo consobrina* Klug as designated by Rohwer, 1911. Because of this *Eniscia* is a synonym of *Sciapteryx* Stephens, 1835, a Palearctic genus.

Taxonomy: Smith, 1974. Coop. Econ. Ins. Rpt. 24 (35): 707-710 (first N. Amer. record). arctica (Thomson). Alaska (Umiat); Siberia, Scandinavia.

Eniscia arctica Thomson, 1870. Opusc. Ent. 2: 300.

Ischyroceraea hyperborea Kiaer, 1898. Tromsø Mus. Aarsh. 19: 68.

Genus TENTHREDO Linnaeus

Tenthredo Linnaeus, 1758. Syst. Nat., Ed. 10, v. 1, p. 343.

Type-species: *Tenthredo scrophulariae* Linnaeus. Desig. by Latreille, 1810.

Labidia Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 21.

Type-species: *Labidia columbiana* Provancher. Monotypic.

Parastatis Kirby, 1881. Ent. Monthly Mag. 18: 107.

Type-species: *Parastatis indica* Kirby. Monotypic.

Rethrax Cameron, 1899. Manchester Lit. Phil. Soc., Mem. and Proc. 43: 33.

Type-species: *Rethrax carinata* Cameron. Monotypic.

Fethalia Cameron, 1902. Bombay Nat. Hist. Soc., Trans. 14: 439.

Type-species: *Fethalia nigra* Cameron. Monotypic.

Clydostomus Konow, 1908. Ztschr. System. Hym. Dipt. 8: 19.

Type-species: *Clydostomus cestatus* Konow. Desig. by Rohwer, 1911.

Tenthredella Rohwer, 1910. U. S. Natl. Mus., Proc. 39: 117.

Type-species: *Tenthredo atra* Linnaeus. Orig. desig.

Zamacrophya Rohwer, 1912. U. S. Natl. Mus., Proc. 39: 221.

Type-species: *Zamacrophya nigrilabris* Rohwer. Orig. desig.

Probably the largest sawfly genus, with over 700 described world species. Adults are large and many are brightly colored. They are commonly found on flowers of various plants where they feed on nectar and pollen and may also be factors in pollination. Adults are also predaceous on other arthropods. Hosts and biologies are known for very few species. European authors have devised their own species groups within the genus; however, until the North American forms are studied in relation to the world fauna, the species groups below are retained from previous catalogs.

Taxonomy: Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 225-226 (key to species of *Labidia* [originalis group]). —Smulyan, 1923. Boston Soc. Nat. Hist., Proc. 36: 385-465 (New England species).

SPECIES GROUP ORIGINALIS

anomocera Rohwer. Alta., Wyo., Colo. w. to B. C., Oreg., Calif.

Tenthredo (Labidia) anomocerus Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 223. ♀.

Tenthredo (Labidia) alienatus Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 224. ♀.

Tenthredo (Labidia) anomus Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 225. ♀.

devia (Konow). Alaska (Aleutian Islands to Popof Is.); Japan, N. Siberia to N. Europe.

Allantus devius Konow, 1900. Ent. Nachr. 26: 124. ♀.

Allantus heraclei Kincaid, 1900. Wash. Acad. Sci., Proc. 2: 364. ♀, ♂. Preocc. by Rudow, 1872.

Allantus alaskanus Enslin, 1910. Rev. Russe d'Ent. 10: 371. N. name for *heraclei* Kincaid.

Taxonomy: Benson, 1959. Roy. Ent. Soc. London, Proc., Ser. B: Taxonomy 28: 98.

maxima (Norton). Alta., Mont., Wyo., Colo., N. Mex. w. to Wash., Oreg., Calif.

Allantus uninctus Norton, 1864. Ent. Soc. Phila., Proc. 3: 9. ♀, ♂. Preocc. by Brulle, 1832.

Allantus maximus Norton, 1867. Amer. Ent. Soc., Trans. 1: 263. ♀.

- Allantus uncinetulus* Dalla Torre, 1894. Cat. Hym., v. 1, p. 80. N. name for *unicinctus* Norton.
- ocampa** Ross. Ariz., Mexico.
Zamacrophya nigrilabris Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 222. ♀, ♂. Preocc. by Friwaldovsky, 1876.
Tenthredo ocampa Ross, 1951. In Muesebeck, *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 71. N. name for *nigrilabris* Rohwer.
- opima** (Cresson). Colo. w. to B. C., Wash., Oreg., Calif.
Allantus opimus Cresson, 1880. Amer. Ent. Soc., Trans. 8: 15. ♀, ♂.
Labidia Columbiana Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 21. ♂.
Tenthredo (Labidia) opimus coloradensis Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 224. ♀.
- originalis** (Norton). Labrador s. to N. Y.
Allantus originalis Norton, 1867. Amer. Ent. Soc., Trans. 1: 261. ♀.
- retura** Ross. Nev., Calif.
Allantus nigriceps Cresson, 1880. Amer. Ent. Soc., Trans. 8: 16. ♀, ♂. Preocc. by Spinola, 1851.
Tenthredo retura Ross, 1951. In Muesebeck, *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 71. N. name for *nigriceps* Cresson.
- subnigriceps** (Rohwer). N. Mex., Utah w. to Wash., Oreg., Calif.
Allantus subnigriceps Rohwer, 1909. Canad. Ent. 41: 148. ♀.

SPECIES GROUP PICEOCINCTA

- piceocincta** (Norton). Ont. to Alaska s. to N. H., N. Y., B. C., Wash.
Allantus piceocinctus Norton, 1860. Boston Jour. Nat. Hist. 7: 249. ♀.
Allantus cogitans Provancher, 1878. Nat. Canad. 10: 163. ♀.
Tenthredo basilaris Provancher, 1878. Nat. Canad. 10: 196. ♀. Preocc. by Say, 1824.
Tenthredo hudsoni Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 318. ♀. A questionable synonym.
Allantus robustus Provancher, 1885. Addit. Corr. Faune Ent. Canada Hym., p. 8. ♀.
Tenthredo ruficoxa Provancher, 1885. Addit. Corr. Faune Ent. Canada Hym., p. 14. ♀.
Tenthredo ventricus MacGillivray, 1895. Canad. Ent. 27: 284. ♂.
Tenthredo siccatus MacGillivray, 1900. Canad. Ent. 32: 179. ♂.
Tenthredo lunatus MacGillivray, 1900. Canad. Ent. 32: 180. ♀.
Tenthredo harrimani Kincaid, 1900. Wash. Acad. Sci., Proc. 2: 363. ♀.
Tenthredo cynthia Enslein, 1912. Arch. f. Naturgesch. 6: 105. N. name for *basilaris* Provancher.
Tenthredo neoslossoni MacGillivray, 1914. Canad. Ent. 46: 138. ♀.
Tenthredo yuasi MacGillivray, 1920. Brooklyn Ent. Soc., Bul. 15: 112. ♀.
Tenthredo smetica MacGillivray, 1920. Brooklyn Ent. Soc., Bul. 15: 113. ♀.
Tenthredo reptinella MacGillivray, 1923. Ill. Univ. Bul. 20(50): 33. ♂.

SPECIES GROUP BASILARIS

- basilaris** Say. N. S., N. B., Que. to N. C. w. to Alta., Minn., Colo., N. Mex.
Tenthredo (Allantus) coronatus Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., p. 583. Nom. nud.
Tenthredo basilaris Say, 1824. In Keating, Narr. Long's 2nd Exped. (App.) p. 316. ♀.
Allantus universus MacGillivray, 1923. Ill. Univ. Bul. 20(50): 6. ♀.
Tenthredo rumina MacGillivray, 1923. Canad. Ent. 55: 160. ♀.
- fernaldii** MacGillivray. Maine, Ont. to Pa. w. to Minn., Colo.
Allantus dubius Norton, 1860. Boston Jour. Nat. Hist. 7: 241. ♀. Preocc. by Strom, 1768.
Tenthredo fernaldii MacGillivray, 1900. Canad. Ent. 32: 177. ♀.
- perplexa** MacGillivray. Alaska s. to Oreg.
Tenthredo perplexus MacGillivray, 1897. N. Y. Ent. Soc., Jour. 5: 104. ♀.
Tenthredo commata Konow, 1908. Ztschr. System Hym. Dipt. 8: 90. ♀, ♂.
Tenthredo rabula MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 112. ♂.
Tenthredo rima MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 110. ♂.

SPECIES GROUP OLIVACEA

olivacea Klug, Yukon, Alaska; Europe to Siberia.

Tenthredo (Allantus) olivacea Klug, 1814. Mag. Gesell Naturf. Freunde Berlin 8: 193. ♀, ♂.

Tenthredo dissimulans Kincaid, 1900. Wash. Acad. Sci., Proc. 2: 363. ♀, ♂.

Rhogogastera respersus MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 165. ♂.

SPECIES GROUP RUFOPECTA

mellicoxa Provancher. Ont. to Va. w. to Minn., W. Va.

Tenthredo mellicoxa Provancher, 1878. Nat. Canad. 10: 198. ♀, ♂.

repleta MacGillivray. Wash., Ore.

Tenthredo repleta MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 111. ♀, ♂.

rufopecta (Norton). N. B. to N. C. w. to Wis.

Allantus rufopectus Norton, 1860. Boston Jour. Nat. Hist. 7: 255. ♀, ♂.

rurigena MacGillivray. N. B., Que., Ont. to N. Y. w. to Minn., Colo.

Tenthredo lineata Provancher, 1878. Nat. Canad. 10: 198. ♀. Preocc. by Christ, 1791.

Tenthredo rurigena MacGillivray, 1923. Ill. Univ. Bul. 20(50): 36. ♀.

SPECIES GROUP PECTORALIS

associata Enslein. Calif.

Allantus limbatus Cresson, 1880. Amer. Ent. Soc., Trans. 8: 17. ♀. Preocc. by Klug, 1814.

Tenthredo associata Enslein, 1912. Arch. f. Naturgesch. 6: 103. N. name for *limbatus* Cresson.

Tenthredo cryptella Ross, 1951. In Muesebeck, et al., U. S. Dept. Agr., Agr. Monog. 2: 73. N. name for *limbatus* Cresson.

pectoralis Norton. Idaho, Colo. w. to Alaska, B. C., Wash., Ore., Calif.

Tenthredo pectoralis Norton, 1864. Ent. Soc. Phila., Proc. 3: 11. ♂.

Tenthredo variegatus Norton, 1864. Ent. Soc. Phila., Proc. 3: 12. ♂. A questionable synonym.

Allantus afflictus Cresson, 1880. Amer. Ent. Soc., Trans. 8: 17. ♀, ♂.

Allantus nevadensis Cresson, 1880. Amer. Ent. Soc., Trans. 8: 17. ♀, ♂.

Allantus occidentalis Cresson, 1880. Amer. Ent. Soc., Trans. 8: 18. ♀.

Tenthredo parvula Cresson, 1880. Amer. Ent. Soc., Trans. 8: 22. ♂. Preocc. by Lepeletier, 1823.

Tenthredo lateralis MacGillivray, 1897. N. Y. Ent. Soc., Jour. 5: 108. ♀.

Tenthredo aldrichi MacGillivray, 1900. Canad. Ent. 32: 183. ♀.

Tenthredo atracostus MacGillivray, 1900. Canad. Ent. 32: 183. ♀.

Tenthredo nigrofascia MacGillivray, 1900. Canad. Ent. 32: 184. ♀.

Tenthredo savagei MacGillivray, 1900. Canad. Ent. 32: 184. ♀.

Tenthredo coenobita Enslein, 1912. Arch. f. Naturgesch. 6: 104. N. name for *parvula* Cresson.

Tenthredo remissa MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 114. ♂.

Tenthredo reperta MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 115. ♀.

Tenthredo replata MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 115. ♀.

Tenthredo reticentia MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 114. ♀.

Tenthredo refuga MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 167. ♀.

Tenthredo rota MacGillivray, 1923. Ill. Univ. Bul. 20(50): 34. ♀.

Tenthredo rufofascia MacGillivray, 1923. Ill. Univ. Bul. 20(50): 36. ♀.

Tenthredo ruta MacGillivray, 1923. Ill. Univ. Bul. 20(50): 37. ♀.

SPECIES GROUP ANGULIFERA

angulifera (Norton). N. B., Que. to Pa. w. to Mich., Ohio.

Allantus angulifer Norton, 1860. Boston Jour. Nat. Hist. 7: 252. ♀, ♂.

carolina (Rohwer). N. C., Ohio.

Tenthredella carolina Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 275. ♀.

dissimilis (Norton). Maine, N. Y.

Allantus dissimilis Norton, 1860. Boston Jour. Nat. Hist. 7: 250. ♀.

Tenthredo bilineatus MacGillivray, 1895. Canad. Ent. 27: 282. ♀.

- fisheri* (Rohwer). N. J., Md., Va., Ill.
Tenthredella fisheri Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 276. ♀.
glacialis (Ross). Ill.
Tenthredella glacialis Ross, 1931. Ent. Soc. Amer., Ann. 24: 110. ♀, ♂.
lobata (Norton). N. Y. to N. C. w. to Wis.
Allantus lobatus Norton, 1860. Boston Jour. Nat. Hist. 7: 253. ♀.
mantha Ross. Conn. w. to Wis., Ill.
Tenthredella lobata maculosa Smulyan, 1915. Canad. Ent. 47: 324. ♀, ♂. Preocc. by
 Lepelletier, 1823.
Tenthredo mantha Ross, 1951. In Muesebeck, et al., U. S. Dept. Agr., Agr. Monog. 2: 73. N.
 name.

SPECIES GROUP LEUCOSTOMA

- cinctitibiis* Norton. N. H., N. Y. w. to Alta.
Tenthredo cinctitibiis Norton, 1869. Amer. Ent. Soc., Trans. 2: 239. ♀.
Tenthredo decorata Provancher, 1878. Nat. Canad. 10: 200. ♀. A questionable synonym.
erythromera Provancher. Que., S. Dak., Colo. w. to Alaska, B. C., Wash., Oreg., Calif.
Tenthredo erythromera Provancher, 1885. Addit. Corr. Faune Ent. Canada Hym., p. 13. ♀.
Tenthredo atrocoerulea Provancher, 1885. Addit. Corr. Faune Ent. Canada Hym., p. 13. ♀.
Tenthredo nigricostata Provancher, 1885. Addit. Corr. Faune Ent. Canada Hym., p. 14. ♀.
Tenthredo terminalis Provancher, 1885. Addit. Corr. Faune Ent. Canada Hym., p. 14. ♂.
 Preocc. by Smith, 1878.
Tenthredo nigrisoma Harrington, 1894. Canad. Ent. 26: 195. ♀. Preocc.
Tenthredo chaonica Enslein, 1912. Arch. f. Naturgesch. 6: 105. N. name for *terminalis*
 Provancher.
Tenthredo regula MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 166. ♀.
Tenthredo requieta MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 167. ♀.
fraternalis (Ross). Alta., B. C.
Tenthredella fraternalis Ross, 1931. Ent. Soc. Amer., Ann. 24: 113. ♀.
fumipennis Norton. Calif.
Tenthredo fumipennis Norton, 1869. Amer. Ent. Soc., Trans. 2: 236. ♂.
leucostoma Kirby. N. S. to Pa. w. to Alta., S. Dak., Colo.
Tenthredo rufipes Say, 1824. In Keating, Narr. Long's 2nd Exped. (App.) p. 317. ♀. Preocc.
 by Linnaeus, 1758.
Tenthredo leucostoma Kirby, 1837. Fauna Bor.-Amer., v. 4, p. 256.
Tenthredo rufopedibus Norton, 1864. Ent. Soc. Phila., Proc. 3: 15. ♂.
 Taxonomy: Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 392 (Possibly a geographical
 race of *Tenthredo atra* Linnaeus, a widespread species in Eurasia).
mellipes Rohwer. Colo.
Tenthredo mellipes Rohwer, 1909. Canad. Ent. 41: 105. ♀.
nigritibialis MacGillivray. Wash.
Tenthredo nigritibialis MacGillivray, 1897. N. Y. Ent. Soc., Jour. 5: 107. ♂.
nimbipennis Cresson. Md., Ill., Ark., Tex.
Tenthredo nimbipennis Cresson, 1872. Amer. Ent. Soc., Trans. 4: 155. ♀.
remae MacGillivray. Oreg.
Tenthredo remae MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 107. ♀.
Tenthredo remora MacGillivray, 1923. N. Y. Ent. Soc., Jour. 21: 108. ♂.
ruficollis Harrington. B. C.
Tenthredo ruficollis Harrington, 1894. Canad. Ent. 26: 195. ♀.
ruma MacGillivray. Pa.
Tenthredo ruma MacGillivray, 1923. Ill. Univ. Bul. 20(50): 36. ♂.
subcoerulea Eschscholtz. Que. to Alaska s. to Fla., Colo., Calif. Ecology: Widespread.
Tenthredo subcoerulea Eschscholtz, 1822. Entomographien, p. 91.
Allantus flavomarginis Norton, 1860. Boston Jour. Nat. Hist. 7: 254. ♀.
Tenthredo melanosoma Harrington, 1894. Canad. Ent. 26: 194. ♀.

Tenthredo pallipunctus MacGillivray, 1895. *Canad. Ent.* 27: 282. ♀. A questionable synonym.

Tenthredo sahlbergii Konow, 1908. *Ztschr. System. Hym. Dipt.* 8: 91. ♀, ♂.

SPECIES GROUP OCCIDENTALIS

bella Cresson. Colo.

Tenthredo bella Cresson, 1880. *Amer. Ent. Soc., Trans.* 8: 21. ♀.

occidentalis Cresson. Ont. (?), Wyo., Colo.

Tenthredo occidentalis Cresson, 1880. *Amer. Ent. Soc., Trans.* 8: 23. ♀.

Tenthredo vapida Kirby, 1882. *List Hym. Brit. Mus.*, v. 1, p. 315. ♀, ♂. A questionable synonym.

Tenthredo ferrugineipes var. *pikoi* Rohwer, 1909. *Canad. Ent.* 41: 107. ♀.

Tenthredo varifrons Rohwer, 1909. *Canad. Ent.* 41: 110. ♂. A questionable synonym.

subrufescens Kirby. Ont.

Tenthredo subrufescens Kirby, 1882. *List Hym. Brit. Mus.*, v. 1, p. 311. ♀.

SPECIES GROUP GRANDIS

colon Klug. Labrador, N. B., N. H. w. to Alaska; Europe, Asia Minor, Siberia. Host: *Viburnum*, *Salix*, *Rosa*, *Corylus*, *Sorbus*. These hosts recorded in Europe.

Tenthredo (Allantus) colon Klug, 1814. *Mag. Gesell. Naturf. Freunde Berlin* 8: 182. ♀, ♂.

Tenthredo eburneifrons Kirby, 1882. *List Hym. Brit. Mus.*, v. 1, p. 306. ♀.

Tenthredo nigricollis Kirby, 1882. *List Hym. Brit. Mus.*, v. 1, p. 308. ♀.

Taxonomy: Benson, 1962. *Brit. Mus. (Nat. Hist.) Ent.*, *Bul.* 12: 392 (*Tenthredo livida* of American authors, not Linnaeus).

grandis (Norton). N. B., Que., Ont. s. to N. C.

Allantus grandis Norton, 1860. *Boston Jour. Nat. Hist.* 7: 239. ♀.

Tenthredo antennata Kirby, 1882. *List Hym. Brit. Mus.*, v. 1, p. 308. ♀.

Tenthredo dubitatus MacGillivray, 1897. *N. Y. Ent. Soc., Jour.* 5: 103. ♂.

SPECIES GROUP VERTICALIS

borealis Kirby. Ont., N. Y. w. to Alta., Minn.

Tenthredo cingulata Provancher, 1878. *Nat. Canad.* 10: 196. ♀. Preocc.

Tenthredo borealis Kirby, 1882. *List Hym. Brit. Mus.*, v. 1, p. 318. ♀.

Tenthredo rutila MacGillivray 1923. *Canad. Ent.* 55: 160. ♀.

verticalis Say. N. B., Que., Ont. to N. C. w. to Minn.

Tenthredo verticalis Say, 1824. *In* Keating, *Narr. Long's Exped. (App.)* p. 317. ♀.

Tenthredo causatus MacGillivray, 1900. *Canad. Ent.* 32: 178. ♂.

Tenthredo rubripes MacGillivray, 1900. *Canad. Ent.* 32: 178. ♂.

SPECIES GROUP SEMIRUFA

attracta Norton. "English River."

Tenthredo attractus Norton, 1869. *Amer. Ent. Soc., Trans.* 2: 240. ♀.

concessa Norton. Ont. to Pa. w. to Alta., S. Dak., Mont., Colo. Host: *Betula*.

Allantus tricolor Norton, 1860. *Boston Jour. Nat. Hist.* 7: 247. ♀. Preocc.

Tenthredo concessus Norton, 1869. *Amer. Ent. Soc., Trans.* 2: 238. ♀.

Tenthredo barnstoni Kirby, 1882. *List Hym. Brit. Mus.*, v. 1, p. 314. ♀, ♂. A questionable synonym.

Tenthredo cressonii Kirby, 1882. *List Hym. Brit. Mus.*, v. 1, p. 315. ♀.

Tenthredo uniformis Kirby, 1882. *List Hym. Brit. Mus.*, v. 1, p. 317. ♀.

Tenthredella rohweri Smulyan, 1915. *Canad. Ent.* 47: 323. N. name for *tricolor* Norton.

Tenthredella tricolor var. *savanna* Ross, 1931. *Ent. Soc. Amer., Ann.* 24: 116. ♀.

Biology: Dyar, 1895. *Amer. Ent. Soc., Trans.* 12: 312.

eximia Norton. Maine to N. J. w. to Alta., Colo.

Tenthredo eximius Norton, 1869. *Amer. Ent. Soc., Trans.* 2: 231. ♀, ♂.

Tenthredo pallicoxa Provancher, 1878. *Nat. Canad.* 10: 201. ♀. A questionable synonym.

Tenthredo nova MacGillivray, 1897. *N. Y. Ent. Soc., Jour.* 5: 105. ♀.

- ferrugineipes** Cresson. Idaho, Colo., N. Mex. w. to Alaska, B. C., Oreg., Calif.
Tenthredo ferrugineipes Cresson, 1880. Amer. Ent. Soc., Trans. 8: 22. ♀.
Tenthredo sectilis Cresson, 1880. Amer. Ent. Soc., Trans. 8: 22. ♀.
Tenthredo luteipes Cresson, 1880. Amer. Ent. Soc., Trans. 8: 21. ♀. A questionable synonym.
Tenthredo terminatus MacGillivray, 1895. Canad. Ent. 27: 283. ♀.
Tenthredo aequalis MacGillivray, 1895. Canad. Ent. 27: 284. ♀.
Tenthredo rubrisommus MacGillivray, 1900. Canad. Ent. 32: 181. ♀.
Tenthredo retinentia MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 166. ♀.
Tenthredo rubrica MacGillivray, 1923. Ill. Univ. Bul. 20(50): 35. ♀.
- lacticincta** Cresson. Nev., Calif.
Tenthredo lacticincta Cresson, 1880. Amer. Ent. Soc., Trans. 8: 21. ♀, ♂.
- olivatipes** MacGillivray. Wash., Calif.
Allantus interruptus Norton, 1867. Amer. Ent. Soc., Trans. 1: 263. ♂. Preocc. by Fabricius, 1804.
Tenthredo olivatipes MacGillivray, 1900. Canad. Ent. 32: 180. ♀.
Tenthredo asella Ensln, 1912. Arch. f. Naturgesch. 6: 103. N. name for *interruptus* Norton.
- ornaticeps** (Cresson). Nev., Calif.
Allantus ornaticeps Cresson, 1880. Amer. Ent. Soc., Trans. 8: 16. ♀, ♂.
- pallicola** MacGillivray. N. H., Alta., N. Mex.
Tenthredo pallicola MacGillivray, 1895. Canad. Ent. 27: 80. ♀.
Tenthredo pallicola var. *beulahensis* Rohwer, 1909. Canad. Ent. 41: 108. ♀.
- pleuralis** Cresson. Colo.
Tenthredo pleuralis Cresson, 1865. Ent. Soc. Phila., Proc. 4: 245. ♀, ♂.
Tenthredo utensis Rohwer, 1909. Canad. Ent. 41: 109. ♀.
- rabida** MacGillivray. Oreg.
Tenthredo rabida MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 110. ♀.
- ralla** MacGillivray. Oreg.
Tenthredo ralla MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 111. ♀.
- reduvia** MacGillivray. Oreg.
Tenthredo reduvia MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 108. ♀.
Tenthredo rabiosa MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 112. ♀.
- resima** MacGillivray. Oreg.
Tenthredo resima MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 109. ♀.
- rubeola** Cresson. Nev.
Tenthredo rubeola Cresson, 1880. Amer. Ent. Soc., Trans. 8: 23. ♂.
- rubicunda** MacGillivray. N. H.
Tenthredo rubicunda MacGillivray, 1923. Ill. Univ. Bul. 20(50): 34. ♀.
- semirufa** Norton. N. H. to N. C. w. to Idaho, Colo. Host: *Betula*.
Allantus signatus Norton, 1860. Boston Jour. Nat. Hist. 7: 247. ♀. Preocc. by Scopoli, 1763.
Tenthredo semirufus Norton, 1864. Ent. Soc. Phila., Proc. 3: 12. ♀.
Tenthredo semirubra Norton, 1864. Ent. Soc. Phila., Proc. 3: 14. ♀.
Tenthredo thora Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 310. ♀, ♂. A questionable synonym.
Tenthredo remota MacGillivray, 1895. Canad. Ent. 27: 81. ♀.
Tenthredo junghansii MacGillivray, 1900. Canad. Ent. 32: 179. ♀.
Tenthredo denotata Ensln, 1912. Arch. f. Naturgesch. 6: 105. Unnecessary n. name for *basilaris* MacGillivray, 1897.
Tenthredo ruina MacGillivray, 1923. Ill. Univ. Bul. 20(50): 36. ♀.
Tenthredo rusticana MacGillivray, 1923. Ill. Univ. Bul. 20(50): 37. ♀.
Tenthredo russa MacGillivray, 1923. Ill. Univ. Bul. 20(50): 37. ♀.
- Taxonomy: Dyar, 1897. N. Y. Ent. Soc., Jour. 5: 19 (larva and host of *remota* MacGillivray).
- variata** Norton. Colo., Wash.
Tenthredo variatus Norton, 1864. Ent. Soc. Phila., Proc. 3: 12. ♀, ♂.
Tenthredo capitatus MacGillivray, 1897. N. Y. Ent. Soc., Jour. 5: 108. ♀.

varipicta Norton. Alaska s. to Nev., Calif.

Tenthredo varipictus Norton, 1868. Amer. Ent. Soc., Trans. 2: 234. ♀.

Tenthredo scaevola Cresson, 1880. Amer. Ent. Soc., Trans. 8: 20. ♀.

Tenthredo magnifica MacGillivray, 1893. Canad. Ent. 25: 240. ♀.

Tenthredo linipes MacGillivray, 1897. N. Y. Ent. Soc., Jour. 5: 104. ♂.

SPECIES GROUP SECUNDA

nortoni (Smulyan). Mass., N. Y., N. J.

Tenthredo angulatus Norton, 1864. Ent. Soc. Phila., Proc. 3: 13. ♂. Preocc. by Westwood, 1838.

Tenthredella nortoni Smulyan, 1915. Canad. Ent. 47: 321. ♂.

relativa Rohwer. Nebr.

Tenthredo relativus Rohwer, 1909. Canad. Ent. 41: 108. ♀.

rhammisia MacGillivray. B. C., Wash., Oreg.

Tenthredo rhammisia MacGillivray, 1923. Ill. Univ. Bul. 20(50): 33. ♀.

rutata MacGillivray. N. J.

Tenthredo rutata MacGillivray, 1923. Ill. Univ. Bul. 20(50): 38. ♀.

secunda MacGillivray. N. H., Mass., N. Y., Ont.

Tenthredo secundus MacGillivray, 1897. N. Y. Ent. Soc., Jour. 5: 105. ♀.

Tenthredo simulatus MacGillivray, 1897. N. Y. Ent. Soc., Jour. 5: 105. ♀.

stricklandi (Ross). Alta., Idaho, Alaska, Oreg.

Tenthredella stricklandi Ross, 1931. Ent. Soc. Amer., Ann. 24: 117. ♀, ♂.

vellosa Ross. Conn.

Tenthredo formosus Norton, 1864. Ent. Soc. Phila., Proc. 3: 14. ♀, ♂. Preocc. by Klug, 1814.

Tenthredo vellosa Ross, 1951. In Muesebeck, et al., U. S. Dept. Agr., Agr. Monog. 2: 77. N. name.

SPECIES GROUP XANTHA

macgillivrayi (Smulyan). N. B., Que., Vt. w. to Alta.

Tenthredella macgillivrayi Smulyan, 1915. Canad. Ent. 47: 323. ♀.

mellina (Norton). Maine.

Allantus mellinus Norton, 1860. Boston Jour. Nat. Hist. 7: 248. ♀, ♂.

obscuripennis Cresson. Oreg., Nev., Calif.

Tenthredo obscuripennis Cresson, 1880. Amer. Ent. Soc., Trans. 8: 20. ♀.

Tenthredo rubella Cresson, 1880. Amer. Ent. Soc., Trans. 8: 22. ♂.

prosopa Stannard. N. Y. to Ga.

Tenthredo prosopa Stannard, 1947. Ent. Soc. Amer., Ann. 40: 434. ♀, ♂.

redimacula MacGillivray. N. H., Ont.

Tenthredo vittata Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 319. ♀. Preocc. by Kriechbaumer, 1869.

Tenthredo redimacula MacGillivray, 1895. Canad. Ent. 27: 78. ♀.

Tenthredo consoma Enslein, 1912. Arch. f. Naturgesch. 6: 105. N. name for *vittata* Kirby.

xantha Norton. Maine, Ont. to Alaska s. to Minn., N. Mex., S. Dak., Utah, Calif. Ecology:

Widespread. Host: *Rubus*(?).

Tenthredo xanthus Norton, 1864. Ent. Soc. Phila., Proc. 3: 13. ♀.

Tenthredo ruficolor Norton, 1868. Amer. Ent. Soc., Trans. 2: 228. ♀.

Tenthredo nupera Cresson, 1880. Amer. Ent. Soc., Trans. 8: 22. ♂. A questionable synonym.

Tenthredo castanea Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 319. ♀.

Allantus rubricus Provancher, 1885. Addit. Corr. Faune Ent. Canada Hym., p. 9. ♀.

Tenthredo reliquia MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 168. ♀.

Tenthredo resticula MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 168. ♀.

Biology: Smith and Kido, 1949. Hilgardia 19: 54 (host).

SPECIES GROUP BIGEMINA

bigemina (Dyar). B. C. s. to Nev., Calif.

Allantus annularis Norton, 1867. Amer. Ent. Soc., Trans. 1: 262. ♀, ♂. Preocc. by Schrank, 1776.

Allantus elegantulus Cresson, 1880. Amer. Ent. Soc., Trans. 8: 17. ♀, ♂. Preocc. by Fallen, 1808.

Labidia opimus var. *bigeminus* Dyar, 1893. Canad. Ent. 25: 195. ♀.

Tenthredo obliquatus MacGillivray, 1897. N. Y. Ent. Soc., Jour. 5: 105. ♀, ♂.

Tenthredo elegantula oregona Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 411. ♀.

Tenthredo admata Enslin, 1912. Arch. f. Naturgesch. 6: 103. N. name for *annularis* Norton.

Tenthredo arethusa Enslin, 1912. Arch. f. Naturgesch. 6: 103. N. name for *elegantulus* Cresson.

UNPLACED TAXA OF TENTHREDO LINNAEUS

Most of the species in the following list were described from males and belong to groups in which it is impossible to identify this sex with any degree of certainty.

alpestris Rohwer. Colo.

Tenthredo alpestris Rohwer, 1909. Canad. Ent. 41: 146. ♂.

auraria Konow. Alaska (Ft. Wrangel).

Tenthredo auraria Konow, 1899. Ent. Nachr. 25: 7. ♀.

bivittata Kincaid. Alaska.

Tenthredo bivittata Kincaid, 1900. Wash. Acad. Sci., Proc. 2: 364. ♀.

cinctitibiis abdominalis (Smulyan), n. comb. N. H.

Tenthredella cinctitibiis abdominalis Smulyan, 1915. Canad. Ent. 47: 324. ♀. Preocc. by Fabricius, 1798.

discrepans Norton. Ont.

Tenthredo discrepans Norton, 1868. Amer. Ent. Soc., Trans. 2: 235. ♂.

divergens Rohwer. Colo.

Tenthredo divergens Rohwer, 1909. Canad. Ent. 41: 112. ♂.

diversiceps Rohwer. N. B.

Tenthredo diversiceps Rohwer, 1910. U. S. Natl. Mus., Proc. 38: 208. ♂.

frigida MacGillivray. N. H., Wash.

Tenthredo frigida MacGillivray, 1895. Canad. Ent. 27: 80. ♂.

hyalina MacGillivray. N. Y.

Tenthredo hyalina MacGillivray, 1897. N. Y. Ent. Soc., Jour. 5: 108. ♂. Preocc.

hypoleuca Rohwer. Colo.

Tenthredo hypoleuca Rohwer, 1909. Canad. Ent. 41: 147. ♂.

juga Konow. Alaska.

Tenthredo juga Konow, 1908. Ztschr. System. Hym. Dipt. 8: 89. ♀.

loveti Benson. Oreg.

Tenthredo rustica MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 113. ♂. Preocc. by Linnaeus, 1758.

Tenthredo loveti Benson, 1930. Entomologist 63: 107. N. name.

magnata MacGillivray. Wash.

Tenthredo magnatus MacGillivray, 1897. N. Y. Ent. Soc., Jour. 5: 107. ♂.

messica MacGillivray. Wash.

Tenthredo messica MacGillivray, 1897. N. Y. Ent. Soc., Jour. 5: 107. ♂.

messicaeformis Rohwer. Colo.

Tenthredo messicaeformis Rohwer, 1909. Canad. Ent. 41: 147. ♂.

mimula Cresson. Colo.

Tenthredo mimula Cresson, 1880. Amer. Ent. Soc., Trans. 8: 23. ♂.

morosa Cresson. Colo.

Tenthredo morosa Cresson, 1880. Amer. Ent. Soc., Trans. 8: 23. ♂.

mutans Norton. Canada.

Tenthredo mutans Norton, 1869. Amer. Ent. Soc., Trans. 2: 236. ♂.

nigricoxi MacGillivray. Wash.

Tenthredo nigricoxi MacGillivray, 1900. Canad. Ent. 32: 181. ♂.

pallipectis MacGillivray. Wash.

Tenthredo pallipectis MacGillivray, 1897. N. Y. Ent. Soc., Jour. 5: 106. ♂.

reflua MacGillivray. Oreg.

Tenthredo reflu MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 111. ♂.

reposita MacGillivray. Oreg.

Tenthredo reposita MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 116. ♂.

reputina MacGillivray. Oreg.

Tenthredo reputina MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 114. ♂.

resegmina MacGillivray. Oreg.

Tenthredo resegmina MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 115. ♂.

restricta MacGillivray. Oreg.

Tenthredo restricta MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 110. ♂.

resupina MacGillivray. Oreg.

Tenthredo resupina MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 113. ♂.

retroversa MacGillivray. Alaska.

Tenthredo retroversa MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 164. ♂.

rotula MacGillivray. N. Y.

Tenthredo rotula MacGillivray, 1923. Ill. Univ. Bul. 20(50): 34. ♂.

rudicula MacGillivray. Maine.

Tenthredo rudicula MacGillivray, 1923. Ill. Univ. Bul. 20(50): 35. ♀.

rufescens (Norton). Maine.

Allantus rufescens Norton, 1860. Boston Jour. Nat. Hist. 7: 245. ♀.

rufostigma MacGillivray. Idaho.

Tenthredo rufostigmus MacGillivray, 1895. Canad. Ent. 27: 283. ♂.

rusticula MacGillivray. Alaska.

Tenthredo rusticula MacGillivray, 1923. N. Y. Ent. Soc., Jour. 31: 166. ♂.

sectiliformis Rohwer. Colo.

Tenthredo sectiliformis Rohwer, 1909. Canad. Ent. 41: 145. ♀.

slossonii MacGillivray. N. H.

Tenthredo slossonii MacGillivray, 1900. Canad. Ent. 32: 179. ♂.

stigmata MacGillivray. Wash.

Tenthredo stigmatus MacGillivray, 1897. N. Y. Ent. Soc., Jour. 5: 108. ♂.

suavis Cresson. Nev.

Tenthredo suavis Cresson, 1880. Amer. Ent. Soc., Trans. 8: 21. ♂.

titusi Rohwer. Colo.

Tenthredo titusi Rohwer, 1909. Canad. Ent. 41: 111. ♂.

varians Norton. Canada.

Tenthredo varians Norton, 1868. Amer. Ent. Soc., Trans. 2: 235. ♂.

ventralis (Say). Ark.

Allantus ventralis Say, 1823. West. Quart. Rptr. 2: 71.

zelmira Rohwer. Colo.

Tenthredo zelmirus Rohwer, 1909. Canad. Ent. 41: 109. ♂.

zetes Kirby. Ont.

Tenthredo zetes Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 312. ♂.

TRIBE MACROPHYINI

Genus MACROPHYA Dahlbom

Tenthredo subg. *Macrophya* Dahlbom, 1835. Conspectus Tenthred., Siricid., Oryssin. Scand., p. 11.

Type-species: *Tenthredo rusticus* Linnaeus Desig. by Westwood, 1840. *T. rusticus* in sense of authors at that time.

Zalagium Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 216.

Type-species: *Zalagium clypeatum* Rohwer. Orig. desig.

A large holarctic genus. Little is known of the hosts and biologies for most species.

Taxonomy: Middleton, 1922. U. S. Natl. Mus., Proc. 61: 6-11 (larvae). — Ross, 1931. Ent. Soc.

Amer., Ann. 24: 119-128 (species with white apical antennal segments). — Malaise and Benson, 1934. Arkiv for Zool. 26A: 4-5 (*Tenthredo rustica* L. is Argidae; *T. rustica* auct., nec Linnaeus = *Macrophya montana* (Scopoli)).

alba MacGillivray. Que. to Pa. w. to Wis., Ind.

Macrophya pulchella alba MacGillivray, 1895. Canad. Ent. 27: 285. ♀, ♂.

Macrophya zonata Konow, 1899. Wien. Ent. Ztg. 18: 44. Unnecessary N. name for *alba*.

annulipes Cresson. Nev., Calif.

Macrophya annulipes Cresson, 1880. Amer. Ent. Soc., Trans. 8: 18. ♀.

bifasciata (Say). Conn. to Fla. w. to Okla., Tex.

Tenthredo (Allantus) media Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., p. 583. Nom. nud.

Allantus bifasciatus Say, 1823. West. Quart. Rptr. 2: 72. ♀.

Macrophya medius Norton, 1861. Boston Soc. Nat. Hist., Proc. 9: 118.

Macrophya texana Cresson, 1880. Amer. Ent. Soc., Trans. 8: 52. ♀, ♂.

Macrophya zabriskiei Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 218. ♀, ♂.

castaneae Rohwer. Va. Host: *Castanea dentata*.

Macrophya castaneae Rohwer, 1917. U. S. Natl. Mus., Proc. 53: 151. ♂.

cinctula (Norton). Conn. to Ga. w. to Minn., Ill.

Tenthredo atroviolacea var. *cinctulus* Norton, 1869. Amer. Ent. Soc., Trans. 2: 240. ♀.

Allantus dejectus Norton, 1860. Boston Jour. Nat. Hist. 7: 249. ♂. A questionable synonym.

Macrophya abbotii Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 269. ♂.

Zalagium clypeatum Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 217. ♂.

coquilletti (Rohwer). Calif.

Sciapteryx coquilletti Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 212. ♀, ♂.

fascialis Norton. N. Y. to Md. w. to Mich., Ill.

Macrophya fascialis Norton, 1867. Amer. Ent. Soc., Trans. 1: 276. ♀.

Macrophya fascialis var. *puella* Ross, 1931. Ent. Soc. Amer., Ann. 24: 123. ♀, ♂.

flavicoxae (Norton). N. B., Ont. to Ga. w. to Alta., Wis.

Allantus flavicoxae Norton, 1860. Boston Jour. Nat. Hist. 7: 258. ♀.

Allantus incertus Norton, 1860. Boston Jour. Nat. Hist. 7: 258. ♂.

Selandria canadensis Provancher, 1885. Addit. Corr. Faune Ent. Canada Hym., p. 7. ♀.

Macrophya flavicoris Dalla Torre, 1894. Cat. Hym., v. 1, p. 52. Emend.

formosa (Klug). Mass. to Fla. w. to Ohio.

Tenthredo (Allantus) formosa Klug, 1814. Mag. Gesell. Naturf. Freunde Berlin 8: 115. ♀.

Allantus bicinctus Norton, 1860. Boston Jour. Nat. Hist. 7: 241. ♀, ♂.

fumator Norton. Colo., Idaho w. to B. C., Wash., Oreg., Calif.

Macrophya fumator Norton, 1867. Amer. Ent. Soc., Trans. 1: 279. ♀.

Macrophya maura Cresson, 1880. Amer. Ent. Soc., Trans. 8: 18. ♀.

Macrophya jugosa Cresson, 1880. Amer. Ent. Soc., Trans. 8: 18. ♀.

Macrophya bicolorata Cresson, 1880. Amer. Ent. Soc., Trans. 8: 18. ♀.

Macrophya fumatrix Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 275. Misspelling ?.

Synairema pacifica Provancher, 1885. Addit. Corr. Faune Ent. Canada Hym. p. 15. ♀.

Perineura kincaidia MacGillivray, 1895. Canad. Ent. 27: 7. ♀.

Macrophya obrussa MacGillivray, 1923. Ill. Univ. Bul. 20(50): 22. ♂.

goniphora (Say). N. Y. to Ga., Ala.

Allantus goniphorus Say, 1836. Boston Jour. Nat. Hist. 1: 216. ♀, ♂.

intermedia (Norton). Conn., N. Y. w. to Wis., Nebr., Mo.

Allantus intermedius Norton, 1860. Boston Jour. Nat. Hist. 7: 242. ♀, ♂.

Macrophya simillima Rohwer, 1917. Ent. News 28: 265. ♀, ♂.

nebraskensis Rohwer. Nebr.

Macrophya sambuci Rohwer, 1909. Canad. Ent. 41: 15. ♀. Preocc. by Latreille, 1805.

Macrophya nebraskensis Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 220. N. name.

nigra (Norton). N. H. to Ala. w. to Ill., Kans.

Allantus niger Norton, 1860. Boston Jour. Nat. Hist. 7: 239. ♀.

nigristigma Rohwer. Conn., Pa., W. Va. Host: *Hicoria*.

Macrophya nigristigma Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 219. ♀.

Macrophya melanopleura MacGillivray, 1914. Canad. Ent. 46: 139. ♀.

Taxonomy: Middleton, 1922. U. S. Natl. Mus., Proc. 61: 9 (larva).

pulchella (Klug). Ont., Conn. to Va. w. to Wis., Nebr., Colo., Miss. Host: *Aster*, *Solidago*, *Rudbeckia*.

Tenthredo (Allantus) pulchella Klug, 1814. Mag. Gesell. Naturf. Freunde Berlin 8: 121. ♂.

Allantus flavolineatus Norton, 1860. Boston Jour. Nat. Hist. 7: 259. ♀, ♂.

Macrophya lineata Norton, 1867. Amer. Ent. Soc., Trans. 1: 269. ♀.

Macrophya zoe Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 270. ♀.

Macrophya crassicornis Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 352.

♂. A questionable synonym.

Macrophya lineatana Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 220. ♀.

Macrophya confusa MacGillivray, 1914. Canad. Ent. 46: 139. ♀.

pulchelliformis Rohwer. Nebr.

Macrophya pulchelliformis Rohwer, 1909. Canad. Ent. 41: 15. ♂.

pulcherrima Kirby. Fla.

Macrophya pulcherrima Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 275. ♂.

pumila Norton. Alaska s. to Calif.

Macrophya pumilus Norton, 1867. Amer. Ent. Soc., Trans. 1: 272. ♂.

Macrophya oregona Cresson, 1880. Amer. Ent. Soc., Trans. 8: 19. ♀.

Macrophya obaereta MacGillivray, 1923. Ill. Univ. Bul. 20(50): 21. ♀.

Macrophya oregona var. *dukiae* Ross, 1931. Ent. Soc. Amer., Ann. 24: 122. ♀, ♂.

punctumalbum (Linnaeus). Ont.; Europe to Caucasus. Introduced (?). Host: *Frazinus*, *Ligustrum*. Hosts recorded in Europe.

Tenthredo punctum album Linnaeus, 1767. Syst. Nat., Ed. 12, p. 924.

Tenthredo erythropus Schrank, 1776. Beitr. z. Naturgesch., p. 86.

subviolacea Cresson. Calif.

Macrophya subviolacea Cresson, 1880. Amer. Ent. Soc., Trans. 8: 18. ♀.

succincta Cresson. Conn., N. Y. to Ga. w. to Sask., Mont., Kans., Tex.

Macrophya succincta Cresson, 1880. Amer. Ent. Soc., Trans. 8: 19. ♀.

Macrophya xanthonota Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 218. ♀.

trisyllaba (Norton). N. B., Que. to Md. w. to Alta., Wis., Ill., Ala. Host: *Sambucus*.

Tenthredo (Allantus) trisyllabus Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., p. 583. Nom. nud.

Allantus trisyllabus Norton, 1860. Boston Jour. Nat. Hist. 7: 238. ♀.

Macrophya trisyllabus var. *sinannula* Ross, 1931. Ent. Soc. Amer., Ann. 24: 127. ♀, ♂.

Taxonomy: Dyar, 1897. N. Y. Ent. Soc., Jour. 5: 192 (larva). —Middleton, 1922. U. S. Natl. Mus., Proc. 61: 8 (larva).

trosula (Norton). N. H. to Va. w. to Minn., Ill.

Tenthredo (Allantus) trosula Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., p. 583. Nom. nud.

Allantus trosula Norton, 1860. Boston Jour. Nat. Hist. 7: 244. ♀.

Macrophya albifacies Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 271. ♀.

Macrophya dyari Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 410. ♀.

Macrophya ornata MacGillivray, 1914. Canad. Ent. 46: 139. ♀.

varia (Norton). N. B., Que. to N. Y. w. to Man., Minn., Ill.

Allantus varius Norton, 1860. Boston Jour. Nat. Hist. 7: 240. ♀.

Macrophya eurythmia Norton, 1867. Amer. Ent. Soc., Trans. 1: 276. ♀, ♂.

Macrophya nidonea MacGillivray, 1895. Canad. Ent. 27: 77. ♂.

Macrophya varius var. *festana* Ross, 1931. Ent. Soc. Amer., Ann. 24: 124. ♀.

- Macrophya varius* var. *nordicola* Ross, 1931. Ent. Soc. Amer., Ann. 24: 125. ♀, ♂.
zonalis Norton. Que. to Md. w. to Minn.
Macrophya zonalis Norton, 1864. Ent. Soc. Phila., Proc. 3: 11. ♀.

UNPLACED TAXA OF MACROPHYA DAHLBOM

The names in the following list fall into a difficult complex previously known as the *Epinota* complex. The species are merely listed without regard to possible synonymy.

albilabris Harrington. Ont. (Ottawa).

Macrophya albilabris Harrington, 1893. Canad. Ent. 25: 60. ♂.

albomaculata (Norton). Maine, Conn. Host: *Viburnum*(?).

Allantus albomaculata Norton, 1860. Boston Jour. Nat. Hist. 7: 256. ♀, ♂.

bellula MacGillivray. N. J.

Macrophya bellula MacGillivray, 1923. Brooklyn Ent. Soc., Bul. 18: 55. ♀.

bilineata MacGillivray. Conn., Ill. Host: *Viburnum*(?).

Macrophya bilineata MacGillivray, 1916. Conn. State Geol. and Nat. Hist. Survey, Bul. 16: 96. ♀.

cassandra Kirby. N. Y.

Macrophya cassandra Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 273. ♀.

cesta (Say). U. S.

Allantus cestus Say, 1836. Boston Jour. Nat. Hist. 1: 216. ♀, ♂.

contaminata Provancher. Canada.

Macrophya contaminata Provancher, 1878. Nat. Canad. 10: 105. ♀.

Macrophya fuscoterminata Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 410. ♀.

epinota (Say). N. H. to Va. w. to Kans., Colo. Host: *Sambucus*.

Tenthredo (Allantus) sambuci Harris, 1833. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., p. 586. Nom. nud.

Allantus epinotus Say, 1836. Boston Jour. Nat. Hist. 1: 215. ♀, ♂.

Taxonomy: Middleton, 1922. U. S. Natl. Mus., Proc. 61: 6 (larva).

errans Rohwer. Pa.

Macrophya errans Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 411. ♀.

externa (Say). Mo., Kans. Host: *Carya*.

Allantus externus Say, 1823. West. Quart. Rptr., p. 72. ♀.

externiformis Rohwer. Wis.

Macrophya externiformis Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 220. ♀.

fistula MacGillivray. N. Y.

Macrophya fistula MacGillivray, 1920. Brooklyn Ent. Soc., Bul. 15: 114. ♀.

flaccida MacGillivray. N. Y.

Macrophya flaccida MacGillivray, 1920. Brooklyn Ent. Soc., Bul. 15: 113. ♀.

flicta MacGillivray. N. Y.

Macrophya flicta MacGillivray, 1920. Brooklyn Ent. Soc., Bul. 15: 114. ♀.

fuliginea Norton. Ill.

Macrophya fuligineus Norton, 1867. Amer. Ent. Soc., Trans. 1: 273. ♀.

Macrophya fuliginosa Dalla Torre, 1894. Cat. Hym., v. 1, p. 52. Misspelling.

melanota Rohwer. Ill.

Macrophya melanota Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 219. ♀.

minuta MacGillivray. N. Y.

Macrophya minuta MacGillivray, 1895. Canad. Ent. 27: 286. ♂.

mixta MacGillivray. N. H. Host: *Viburnum*(?).

Macrophya mixta MacGillivray, 1895. Canad. Ent. 27: 77. ♀.

pannosa (Say). U. S.

Allantus pannosus Say, 1836. Boston Jour. Nat. Hist. 1: 217. ♀, ♂.

propinqua Harrington. Canada.

Macrophya propinqua Harrington, 1889. Canad. Ent. 21: 97. ♀.

proximata Norton. Conn.

Macrophya proximata Norton, 1867. Amer. Ent. Soc., Trans. 1: 270. ♀.

punctata MacGillivray. N. Y.

Macrophya punctata MacGillivray, 1895. Canad. Ent. 27: 285. ♀.

raui Rohwer. Mo.

Macrophya rauli Rohwer, 1917. Ent. News 28: 264. ♀, ♂.

tibiator Norton. Ont. to Ga. w. to Ill., Kans. Host: *Sambucus*.

Macrophya tibiator Norton, 1864. Ent. Soc. Phila., Proc. 3: 10. ♀, ♂.

Genus PACHYPROTASIS Hartig

Pachyprotasis Hartig, 1837. Fam. Blattwespen und Holzwespen, nebst Einleitung Naturgesch. Hym., p. 295.

Type-species: *Tenthredo rapae* Linnaeus. Desig. by Westwood, 1840.

Lithracia Cameron, 1902. Bombay Nat. Hist. Soc., Jour. 14: 441.

Type-species: *Lithracia flavipes* Cameron. Monotypic.

This genus is better represented in Eurasia. Only a single holarctic species is found in North America.

rapae (Linnaeus). Newfoundland to Alaska s. to N. C., Tenn., Mo., N. Mex., Calif.; Europe to Siberia. Ecology: Widespread. Host: *Solidago*, *Scrophularia*, *Betonica*, *Fraxinus*, *Antirrhinum*. These hosts recorded in Europe.

Tenthredo rapae Linnaeus, 1767. Syst. Nat., Ed. 12, p. 926.

Tenthredo nigrofasciata Eschscholtz, 1822. Entomographien, p. 96. A questionable synonym.

Macrophya (Pachyprotasis) omega Norton, 1867. Amer. Ent. Soc., Trans. 1: 280. ♀, ♂.

Synairema Americana Provancher, 1885. Canad. Ent. 17: 50. ♀.

Rhogogaster sayi Rohwer, 1908. N. Y. Ent. Soc., Jour. 16: 111. ♀.

Macrophya obnata MacGillivray, 1923. Ill. Univ. Bul. 20(50): 22. ♀.

UNPLACED TAXA OF TENTHREDINIDAE

Tenthredo (Nematus) melanocephala Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., p. 583. Nom. nud.

Emphytus platycerus Say, 1836. Boston Jour. Nat. Hist. 1: 220. ♂. Ind.

Superfamily SIRICOIDEA

Family SYNTEXIDAE

Taxonomy: Benson, 1935. Ann. and Mag. Nat. Hist., ser. 10, 16: 536. — Ross, 1937. Ill. Biol. Monog. 15(2): 110 (Syntectidae). — Klima, 1937. In Hedicke, Hym. Cat., pt. 2, p. 53 (catalog).

Genus SYNTEXIS Rohwer

Syntexis Rohwer, 1915. Ent. Soc. Wash., Proc. 17: 115.

Type-species: *Syntexis libocedrii* Rohwer. Orig. desig.

libocedrii Rohwer. Idaho (?), Oreg., Calif. Ecology: Larvae are wood borers. Host: *Libocedrus decurrens*, *Juniperus occidentalis*, and *Thuja plicata*(?).

Syntexis libocedrii Rohwer, 1915. Ent. Soc. Wash., Proc. 17: 115. ♀.

Taxonomy: Middlekauff, 1964. Pan-Pacific Ent. 40: 257 (male, host, distribution).

— Middlekauff, 1975 (1974). Pan-Pacific Ent. 50: 288-290 (larva).

Biology: Wickman, 1967. Ent. Soc. Amer., Ann. 60: 1291-1294. — Westcott, 1971. Pan-Pacific Ent. 47: 310 (hosts, distribution).

Family SIRICIDAE

Larvae of this family are wood borers, members of the Siricinae in coniferous trees and those of the Tremicinae in angiosperm trees. The North American species are not known to attack sound trees, only those that have been weakened or recently felled. Fire damaged trees are particularly attractive to adults for oviposition, and large populations may build up in recent burns. The boring of the larvae reduces the quality of lumber and the emergence of the adults may damage buildings where they may bore through plaster walls, carpeting, and hardwood floors to exit. In Europe, *Urocerus gigas gigas* (L.) has been reported to cut through metal and lead telephone cables. Because of their habits, some species have been spread by commerce to many parts of the world, and it is not uncommon to find them out of their normal range.

The family is cosmopolitan except perhaps for South America. About 85 species in 9 genera are known from the world. The common names horntails or woodwasps are sometimes used for this family.

Revision: Bradley, 1913. Jour. Ent. and Zool. 5: 1-36 (N. Amer. species). — Benson, 1943. Bul. Ent. Res. 34: 27-51 (world genera). — Middlekauff, 1960. Calif. Ins. Survey, Bul. 6(4): 59-77 (Calif. species).

Taxonomy: Johnson, 1928. Boston Soc. Nat. Hist., Bul. 49: 2-7 (New England species).

— Hedicke, 1938. Hym. Cat., pt. 6, 32 pp. (world catalog). — Benson, 1938. Roy. Ent. Soc.

London, Trans. 87: 359 (genera and subfamilies). — Maa, 1949. Notes d'Ent. Chinoise (Mus. Heude) 13: 11-189.

Biology: Hanson, 1939. Bul. Ent. Res. 30: 27-76 (biology and parasites). — Wickman, 1964. Canad. Ent. 96: 508-510 (measuring populations). — Cameron, 1965. Commonwealth Inst. Biol. Control, Tech. Bul. 5, 31 pp. (hosts and parasites of Siricinae). — Stillwell, 1966. Forest Science 12: 121-128 (fungus associations). — Morris, 1967. B. C. Ent. Soc., Jour. 64: 60-63 (Hosts in B. C.).

Morphology: Tonapi, 1958. Roy. Ent. Soc. London, Trans. 110: 492 (spiracular structure and mechanisms).

SUBFAMILY SIRICINAE

Genus SIREX Linnaeus

Sirex Linnaeus, 1761. Fauna Suecica, Ed. 2, p. 396.

Type-species: *Sirex juvencus* Linnaeus. Desig. by Curtis, 1829.

Paururus Konow, 1896. Wien. Ent. Ztg. 15: 41, 43.

Type-species: *Sirex juvencus* Linnaeus. Desig. by Rohwer, 1911.

Taxonomy: Cameron, 1967. Canad. Ent. 99: 18-24 (Calif. species).

Biology: Kirk, 1974. Ga. Ent. Soc., Jour. 9: 139-144 (*Sirex* and parasites in s.e. U. S.).

areolatus (Cresson). Va., Fla.; Colo., N. Mex. w. to B. C., Wash., Oreg., Calif. Host: *Cupressus macrocarpa*, *Juniperus occidentalis*, *Libocedrus decurrens*, *Pinus contorta*, *P. jeffreyi*, *P. lambertiana*, *P. radiata*, *Pseudotsuga menziesii*, *Sequoia sempervirens*, *Taxodium distictum*. Found less frequently on pines than on other hosts. Adventive in Europe emerging from lumber.

Urocerus areolatus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 375. ♀.

Sirex gracilis Westwood, 1874. Thesaurus Ent. Oxon, p. 114. ♀.

Urocerus caeruleus Cresson, 1880. Amer. Ent. Soc., Trans. 8: 34. ♀.

Sirex apicalis Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 377. ♂.

Biology: Chamberlin, 1949. Pan-Pacific Ent. 25: 118. — DeLeon, 1952. Pan-Pacific Ent. 28: 85. — Westcott, 1971. Pan-Pacific Ent. 47: 310 (hosts).

behrensii (Cresson). Idaho, Nev., Wash., Oreg., Calif. Host: *Cupressus macrocarpa*, *Pinus jeffreyi*, *P. lambertiana*, *P. ponderosa*, *P. radiata*. Adventive in eastern states emerging from buildings.

Urocerus behrensii Cresson, 1880. Amer. Ent. Soc., Trans. 8: 35. ♀.

Morphology: Daly, 1963. Ent. Soc. Amer., Ann. 56: 301.

cyaneus Fabricius. Newfoundland to B. C. s. to N. C., Ill., Kans., N. Mex., Calif.; Europe. Host: *Abies balsamea*, *A. concolor*, *A. lasiocarpa*, *Larix europea*, *L. laricina*, *Picea glauca*, *Pinus* spp., *Pseudotsuga menziesii*. Blue horntail. The relationship between *cyaneus* and *juvencus* (L.) needs clarification.

Sirex cyaneus Fabricius, 1781. Species Insectorum, v. 1, p. 419. ♀.

Sirex duplex Shuckard, 1837. Mag. Nat. Hist. (n. s.) 1: 630. ♀, ♂.

Urocerus nitidus Harris, 1841. Rpt. Ins. Mass. Injurious to Veg., p. 391. ♀.

Sirex abbotii Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 378. ♂.

Sirex hirsutus Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 380. ♂.

Taxonomy: Benson, 1943. Bul. Ent. Res. 34: 38.

Biology: Chrystal, 1928. Bul. Ent. Res. 19: 219-247 (in England). — Chrystal and Myers, 1928. Bul. Ent. Res. 19: 67-77 (natural enemies, England). — Hanson, 1939. Bul. Ent. Res. 30: 27 (parasites, in Britain). — Parkin, 1941. Nature 147: 329 (fungus association). — Parkin, 1942. Ann. Appl. Biol. 29: 268-274 (fungus association, hypopleural organs).

edwardsii Brulle. Que. to Ga. and Ala. w. to Sask., Wis., Ark. Host: *Picea abies*, *Pinus echinata*, *P. rigida*, *P. strobus*.

Sirex Edwardsii Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 645. ♀.

Urocerus zonatus Norton, 1869. Amer. Ent. Soc., Trans. 2: 257. ♂.

Sirex fulvocinctus Westwood, 1874. Thesaurus Ent. Oxon, p. 114. ♀.

Sirex abaddon Westwood, 1874. Thesaurus Ent. Oxon, p. 115. ♀.

Paururus hopkinsi Ashmead, 1904. Canad. Ent. 36: 64. ♀, ♂.

juvencus californicus (Ashmead). Alta., Mont., Wyo., N. Mex., Utah, w. to B. C., Wash., Oreg., Calif.; Mexico. Host: *Cupressus macrocarpa*, *Larix occidentalis*, *Pinus contorta*, *P. jeffreyi*, *P. ponderosa*, *Pseudotsuga menziesii*.

Paururus californicus Ashmead, 1904. Canad. Ent. 36: 64. ♀.

Sirex obesus Bradley, 1913. Jour. Ent. and Zool. 5: 12. ♀.

Taxonomy: Benson, 1963. Ent. Monthly Mag. 98: 252 (a subsp. of *juvencus*). —Cameron, 1967. Canad. Ent. 99: 18 (male).

Biology: Cameron, 1968. Pan-Pacific Ent. 44: 168 (from bolts of *Pinus ponderosa* injured by atmospheric pollution).

juvencus juvencus (Linnaeus). Labrador, Newfoundland, N. S., N. B., N. J., Yukon, B. C.; Eurasia. Host: *Abies balsamea*, *A. lasiocarpa*, *Pinus contorta*. Recorded from species of *Abies*, *Larix*, *Picea*, and *Pinus* in Europe and Asia. Occasionally intercepted in New Zealand, Australian, and Philippine ports in lumber. Probably more common in North America than expected.

Ichneumon juvencus Linnaeus, 1758. Syst. Nat., Ed. 10, v. 1, p. 560.

Sirex nigricornis Acerbi, 1802. Trav. North Cape, v. 2, p. 253. Preocc.

Sirex dubia Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 375. N. name for *nigricornis* Acerbi.

Sirex australis Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 383. ♀.

Sirex Leseleuci Tournier, 1890. Ent. Geneve 1: 220.

Paururus sucineiceps Koornneef, 1935. Tijdschr. Ent. 78: xix.

Sirex juvencus var. *atricornis* Kjellander, 1945. Kungl. Fysiograf. Sällskap. Lund, Forh. 15: 126.

Taxonomy: Benson, 1943. Bul. Ent. Res. 34: 37. —Benson, 1945. Ent. Monthly Mag. 81: 67-68. —Benson, 1963. Ent. Monthly Mag. 98: 252.

Biology: Chrystal, 1928. Bul. Ent. Res. 19: 223. —Stillwell, 1966. Forest Science 12: 121-128 (associated fungus, in N. B., N. S.). —Morris, 1967. B. C. Ent. Soc., Jour. 64: 60-63 (hosts and distribution in B. C. and Yukon).

longicauda Middlekauff. Idaho, Colo., N. Mex., Utah, w. to Oreg., Calif. Host: *Abies concolor*, *A. magnifica*, *Pinus ponderosa*, *Pseudotsuga menziesii*. Adventive in eastern states emerging from lumber.

Sirex longicauda Middlekauff, 1948. Pan-Pacific Ent. 24: 189. ♀.

Taxonomy: Middlekauff, 1962. Pan-Pacific Ent. 38: 31-32 (male).

Biology: Wickman, 1964. Pan-Pacific Ent. 40: 259-261 (oviposition).

nigricornis Fabricius. Que. to Fla. w. to Sask., Wis., Ohio, Ark., La. Host: *Pinus echinata*, *P. strobus*, *P. virginiana*.

Sirex nigricornis Fabricius, 1781. Species Insectorum, v.1, p. 418. ♀.

Sirex morio Westwood, 1874. Thesaurus Ent. Oxon, p. 115. ♀.

Paururus pinicolus Ashmead, 1898. Canad. Ent. 30: 179. ♀.

Biology: Webster, 1895. Ohio Farmer, p. 177.

noctilio Fabricius. Ont., Man.?, Eurasia. Holarctic(?). Host: None recorded in N. Amer.; in Europe, *Abies*, *Larix*, *Picea*, *Pinus*, *Pseudotsuga*; in N. Z. and Australia, *Pinus radiata*, *Pinus* spp. Introduced into New Zealand, Australia, and Tasmania where it is a serious pest.

Sirex noctilio Fabricius, 1793. Ent. System., v. 2, p. 130.

Urocerus Feisthameli Brulle, 1833. Exped. Sci. de Moree, v. 3, p. 387.

Sirex melanoceros Thomson, 1871. Hym. Scand., v. 1, p. 328.

Paururus atlantidis Ghigi, 1909. Bol. Soc. Ent. Ital. 60: 163.

Taxonomy: Benson, 1943. Bul. Ent. Res. 34: 37. —Benson, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 12: 385.

- Biology: Clark, 1933. New Zealand Jour. Sci. and Tech. 15: 188-190. — Miller and Clark, 1935. Bul. Ent. Res. 26: 149 (New Zealand). — Hanson, 1939. Bul. Ent. Res. 30: 27-76.
 — Rawlings, 1948. New Zealand Jour. Forestry 5: 411. — Rawlings and Wilson, 1949. New Zealand Jour. Forestry 6: 20 (hosts susceptibility). — Gourlay, 1951. Bul. Ent. Res. 42: 21 (parasitized by an orussid, New Zealand). — Irvine, 1962. Victoria's Resources 4: 40 (hosts, habits, damage in Australia, Tasmania). — Taylor, 1962. Ent. Rec. and Jour. Var. 74: 273 (intercepted in S. Africa). — Coutts, 1965. Australian Dept. Natl. Develop. Forest and Timber Bur., Bul. 41: 3. — Morgan and Stewart, 1966. Roy. Soc. New Zealand, Trans. Zool. 7: 195. — Mucha, 1967. Australian Forest Res. 3: 3 (habits, hosts). — Zondag, 1969. New Zealand Jour. Sci. 12: 732-747 (nematode parasite). — Neumann, 1970. Australian Ent. Soc. Jour. 9: 168-169 (white eyed forms and gynandromorphs).
- varipes** Walker. Mont., B. C., Wash., Oreg., Nev., Calif. Host: *Abies magnifica*, *A. lasiocarpa*, *Picea sitchensis*, *Pinus ponderosa*. Adventive in eastern states emerging from timber. Probably only a color form of *juvencus* or *j. californicus*.
Sirex varipes Walker, 1866. In Lord, Naturalist in Vancouver Is. and B. C. v. 2, p. 342. ♀.
- Taxonomy: Benson, 1943. Bul. Ent. Res. 34: 37, 48. — Benson, 1963. Ent. Monthly Mag. 98: 252 (hybrid of *juvencus juvencus* (L.) X *juvencus californicus* (Ashmead)).

Genus UROCERUS Geoffroy

- Urocerus* Geoffroy, 1785. in Fourcroy, Ent. Parisiensis, pt. 2, p. 363.
 Type-species: *Ichneumon gigas* Linnaeus. Monotypic.
- Xanthosirex* Semenov-Tian-Shanskii, 1921. Rev. Russe d'Ent. 17: 86.
 Type-species: *Xanthosirex phantasma* Semenov-Tian-Shanskii. Orig. desig.
- albicornis** (Fabricius). Newfoundland to B. C. s. to N. C., Mich., Mo., N. Mex., Calif. Host: *Abies amabilis*, *A. balsamea*, *A. fraseri*, *A. lasiocarpa*, *Larix laricina*, *L. occidentalis*, *Picea engelmanni*, *P. mariana*, *P. sitchensis*, *Pinus* sp., *Pseudotsuga menziesii*, *Thuja plicata*, *Tsuga heterophylla*. Adventive in Britain emerging from lumber.
Sirex albicornis Fabricius, 1781. Species Insectorum, v. 1, p. 419. ♀.
Urocerus abdominalis Harris, 1841. Rpt. Ins. Mass. Injurious to Veg., p. 392. ♂.
Sirex stephensi Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 375. ♀.
- Biology: Lintner, 1898. N. Y. State Mus., Ann. Rpt. 51: 338-340. — Chrystal, 1928. Bul. Ent. Res. 19: 223. — Reeks and Smith, 1945. Acad. Nat. 2: 12. — Belyea, 1952. Canad. Ent. 84: 325-335.
- californicus** Norton. Mont., Colo., N. Mex. w. to B. C., Wash., Oreg. Calif.; Mexico. Host: *Abies balsamea*, *A. concolor*, *A. lasiocarpa*, *A. magnifica*, *A. nobilis*, *Larix occidentalis*, *Libocedrus decurrens*, *Picea engelmanni*, *P. sitchensis*, *Pinus contorta*, *P. lambertiana*, *P. ponderosa*, *Pseudotsuga menziesii*, *Tsuga heterophylla*. Adventive in Britain emerging from lumber.
Urocerus albicornis var. *californicus* Norton, 1869. Amer. Ent. Soc., Trans. 2: 360. ♀.
Urocerus fulvus Cresson, 1880. Amer. Ent. Soc., Trans. 8: 35. ♂.
Urocerus flavipennis Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 380. ♀.
- Biology: Benson, 1945. Ent. Monthly Mag. 81: 67 (England, in lumber from B. C. and w. U. S.). — Wickman, 1964. Pan-Pacific Ent. 40: 259 (hosts; oviposition).
- cressoni** Norton. N. S., N. B., Que., Ont. to Fla. w. to Wis., Minn. Host: *Abies balsamea*, *A. fraseri*, *Picea* sp., *Pinus rigida*, *P. taeda*.
Urocerus cressoni Norton, 1864. Ent. Soc. Phila., Proc. 3: 16. ♀.
Urocerus tricolor Provancher, 1869. Nat. Canad. 1: 17. ♀.
Sirex dimidiatus Westwood, 1874. Thesaurus Ent. Oxon, p. 115. ♀.
Sirex Fiskei Ashmead, 1904. Canad. Ent. 36: 63. ♀.
Urocerus cressoni var. *unicolor* Bradley, 1913. Jour. Ent. and Zool. 5: 22. ♀.
- gigas flavicornis** (Fabricius). Labrador to Alaska s. to N. H., Colo., N. Mex., Ariz., Calif.; Mexico. Host: *Abies lasiocarpa*, *Larix occidentalis*, *Picea sitchensis*, *Pinus contorta*, *Pseudotsuga menziesii*. *U. gigas gigas* (L.) is Palearctic. Adventive in Britain and Brazil emerging from lumber.
Sirex flavicornis Fabricius, 1781. Species Insectorum, v. 1, p. 418.
Sirex bizonatus Stephens, 1835. Illus. Brit. Ent., v. 7, p. 342.

Sirex latifasciatus Westwood, 1874. Thesaurus Ent. Oxon., p. 114. ♂.

Urocerus riparius MacGillivray, 1893. Canad. Ent. 24: 244. ♂.

Taxonomy: Benson, 1943. Bul. Ent. Res. 34: 40. — Ries, 1946. Ent. News 57: 218 (adventive in Brazil).

Biology: Chapman, 1954. Ecology 35: 44 (summit-frequenting insects of western mountains).

taxodii (Ashmead). D. C. and Va. to Fla. w. to Mo. Host: *Taxodium distichum*.

Sirex taxodii Ashmead, 1904. Canad. Ent. 36: 63. ♀, ♂.

Genus XERIS Costa

Xeris Costa 1894 Prospetto Imen. Ital. 3: 259.

Type-species: *Ichneumon spectrum* Linnaeus. Monotypic.

Revision: Maa, 1949. Notes d'Ent. Chinoise (Mus. Heude) 13: 79-89.

morrisoni indecisus (MacGillivray). Idaho, Utah, Nev., B. C., Wash., Oreg., Calif. Host: *Abies concolor*, *A. grandis*, *A. lasiocarpa*, *Larix occidentalis*, *Libocedrus decurrens*, *Picea sitchensis*, *Pinus contorta*, *P. ponderosa*, *Pseudotsuga menziesii*, *Tsuga heterophylla*.
Urocerus indecisus MacGillivray, 1893. Canad. Ent. 25: 243. ♂.

morrisoni morrisoni (Cresson). Colo., Ariz. Host: *Abies concolor*, *Picea pungens*, *Pseudotsuga menziesii*.

Urocerus morrisoni Cresson, 1880. Amer. Ent. Soc., Trans. 8: 35. ♀, ♂.

spectrum spectrum (Linnaeus). N. B. to Wash. s. to Conn., Mich., Colo., Ariz., Calif.; Eurasia, China, Formosa, N. Africa. Host: *Abies lasiocarpa*, *Larix occidentalis*, *Picea pungens*, *Pinus contorta*, *Pseudotsuga menziesii*. Recorded from same host genera in Europe and Asia.

Ichneumon spectrum Linnaeus, 1758. Syst. Nat., Ed. 10, v. 1, p. 560. ♀.

Sirex nanus Muller, 1776. Zool. Dan. Prodr. p. 151.

Sirex emarginatus Fabricius, 1793. Ent. System., v. 2, p. 128.

Urocerus caudatus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 247. ♀.

Sirex melancholicus Westwood, 1874. Thesaurus Ent. Oxon., p. 116. ♂.

spectrum townesi Maa. Mont., B. C., Wash., Oreg., Nev., Calif. Host: *Abies concolor*, *A. grandis*, *A. lasiocarpa*, *Picea sitchensis*, *Pinus contorta*, *Pseudotsuga menziesii*, *Tsuga heterophylla*.

Xeris spectrum townesi Maa, 1949. Notes d'Ent. Chinoise (Mus. Heude) 13: 88. ♀, ♂.

tarsalis (Cresson). Wash., Oreg., Calif.; Mexico. Host: *Cupressus macrocarpa*, *Thuja plicata*?, *Juniperus occidentalis*, *Libocedrus decurrens*.

Urocerus tarsalis Cresson, 1880. Amer. Ent. Soc., Trans. 8: 52. ♀.

Xeris macgillivrayi Bradley, 1913. Jour. Ent. and Zool. 5: 24. ♀.

Biology: Westcott, 1971. Pan-Pacific Ent. 47: 310 (host).

SUBFAMILY TREMICINAE

Genus TREMEX Jurine

Tremex Jurine, 1807. Nouv. Method. Class. Hym. Dipt., p. 80.

Type-species: *Sirex fuscicornis* Fabricius. Desig. by Latreille, 1810.

Xyloterus Hartig, 1837. Fam. Blattwespen und Holzwespen, nebst Einleitung Naturgesch. Hym., p. 385. Preocce.

Type-species: *Sirex fuscicornis* Fabricius. Desig. by Rohwer, 1911.

Xyloccematium Heyden, 1868. Berlin. Ent. Ztschr. 2: 227. N. name for *Xyloterus* Hartig.

About 22 world species are recognized, only one of which is found in North America. Our representative is extremely variable in coloration, and earlier authors designated races or sub-species to distinguish these variant forms.

columba (Linnaeus). N. S., N. B., and Que. to Fla. w. to the Rockies, Colo., Utah, Ariz., s. Calif. Host: *Acer*, *Ulmus*, *Quercus*, *Hicoria*, *Fagus*, and probably other deciduous trees.

Usually in dead or dying trees. Pigeon tremex.

Sirex columba Linnaeus, 1763. Amoenitates Academicæ, v. 6, p. 412. ♀.

- Sirex pennsylvanicus* DeGeer, 1773. Mem. Serv. Hist. des Ins., v. 3, p. 593.
Sirex cinctus Drury, 1773. Illus. Nat. Hist., v. 2, p. 72. ♀.
Sirex americana Christ, 1791. Naturgesch. Class. Nomencl. Ins., p. 412. ♀.
Tremex obsoletus Say, 1823. West. Quart. Rptr. 2: 73. ♂.
Tremex sericeus Say, 1823. West. Quart. Rptr. 2: 73. ♀.
Tremex servillei Brulle, 1846. In Lepeletier, Hist. Nat. Ins., Hym. 4: 645. ♀.
Tremex maurus Westwood, 1874. Thesaurus Ent. Oxon., p. 116. ♂.
Tremex hospes Cockerell, 1889. Colo. Biol. Assn. Rpt. 10: [3]. Nom. nud.
Tremex columba race *aureus* Bradley, 1913. Jour. Ent. and Zool. 5: 26. ♀.

Taxonomy: Yuasa, 1922. Ill. Biol. Monog. 7: 115-116 (larva).

Biology: Herrick, 1935. Ins. Enemies of Shade Trees, pp. 188-189. —Blackman and Stage, 1924. N. Y. State Col. Forestry, Syracuse Univ., Tech. Pub. 17, 24: 156. —Laurent, 1931. Ent. News 42: 67. —Smith, et al., 1943. Kans. State Bd. Agr. Rpt. 62: 387. —Beal and Massey, 1945. Duke Univ., School Forestry Bul. 10: 70, 155. —Fattig, 1949. Ent. News 60: 71. —Stillwell, 1965. Canad. Ent. 97: 783-784 (Hypopleural organs). —Stillwell, 1967. Canad. Ent. 99: 685-689 (in N. B.).

Morphology: Holway, 1935. Psyche 42: 17 (pretarsus).

Genus ERIOTREMEX Benson

Eriotremex Benson, 1943. Bul. Ent. Res. 34: 42.

Type-species: *Tremex smithi* Cameron. Orig. desig.

This genus of about 10 species is found in southeast Asia. The single species taken in the United States is undoubtedly an introduction.

Taxonomy: Benson, 1943. Bul. Ent. Res. 34: 42 (key to spp.). —Maa, 1949. Notes d'Ent. Chinoise (Mus. Heude) 13: 127-134, 175-176. —Maa, 1956. Hawaii. Ent. Soc., Proc. 16: 91-92 (key to females).

formosanus (Matsumura). Ala. (Covington Co., Coffee Co.); Formosa; Indochina. Ecology: In Ala., emerged from firewood (water-oak tree) in home. Accidentally introduced.

Tremex formosanus Matsumura, 1912. Thous. Ins. Japan, Sup., v. 4, p. 21, pl. 43, fig. 12. ♀.

Family XIPHYDRIIDAE

Larvae of this family are wood borers in dead or dying angiosperm trees. Healthy trees and sound wood are not attacked. Adults sometimes emerge from firewood brought into homes, consequently arousing concern. The family is cosmopolitan with about 82 species in 22 genera; only one genus is found in North America.

Revision: Rohwer, 1918. Ent. News 29: 105-111.

Taxonomy: Hedicke, 1938. Hym. Cat., pt. 7, 17 pp. (world catalog). —Maa, 1949. Notes d'Ent. Chinoise (Mus. Heude) 13: 20-76 (world classification). —Benson, 1954. Roy. Ent. Soc. London, Trans. 105: 151-158. (world classification).

Biology: Yuasa, 1922. Ill. Biol. Monog. 7: 112-114. —Schaffner and Middleton, 1949. In Craighead, U. S. Dept. Agr., Misc. Pub. 657, p. 587.

SUBFAMILY XIPHYDRIINAE

Genus XIPHYDRIA Latreille

Xiphydria Latreille, 1802. Hist. Nat. Crust. Ins., v. 3, p. 304.

Type-species: *Ichneumon camelus* Linnaeus. Monotypic.

Hybonotus Klug, 1803. Monog. Siricum German., p. 8.

Type-species: *Ichneumon camelus* Linnaeus. Desig. by Rohwer, 1911.

Xiphydria(!) Panzer, 1806. Krit. Rev. Insektenf. Deutschlands, v. 2, p. 56.

Xiphiura Fallen, 1813. Spec. Nov. Hym. Disp. Meth. p. 11.

Xiphidria(!) Provancher, 1875. Nat. Canad. 7: 373.

Xiphidion Provancher, 1875. Nat. Canad. 7: 374.

Type-species: *Xiphidion canadensis* Provancher. Monotypic.

Hyponotus(!) Enslin, 1917. Deut. Ent. Ztschr., pp. 704, 706. Preocc.

abdominalis Say. Ont. to N. C. w. to Wis., Iowa. Host: *Acer*, *Tilia americana*.

Xiphidria abdominalis Say, 1824. In Keating, Narr. Long's 2nd Exped., v. 2 (App.), p. 311. ♀.

Xiphidria attenuata Norton, 1862. Ent. Soc. Phila., Proc. 1: 214. ♂.

Xiphidria rufiventris Cresson, 1880. Amer. Ent. Soc., Trans. 8: 34. ♀.

Taxonomy: Rohwer, 1921. U. S. Natl. Mus., Proc. 59: 83.

canadensis Provancher. Que., Va.

Xiphidria canadensis Provancher, 1875. Nat. Canad. 7: 373. ♀.

hicoriae Rohwer. Ont., Mass. to N. J., Pa. w. to Ohio, Ill. Host: *Carya*, *Ulmus*.

Xiphidria hicoriae Rohwer, 1918. Ent. News 29: 109. ♀, ♂.

Biology: Blackman and Stage, 1924. Syracuse Univ., N. Y. State Col. Forestry, Tech. Pub. 17, 24: 155.

maculata Say. N. B., Ont. to Md., w. to Man., Minn., Iowa, Kans., Tex.; Calif. (?). Host: *Acer*, *Malus malus*, *Tilia americana*(?).

Xiphidria maculata Say, 1836. Boston Jour. Nat. Hist. 1: 221. ♂.

Xiphidria albicornis Harris, 1841. Rpt. Ins. Mass. Injurious to Veg., p. 392. ♀.

Biology: Harrington, 1884. Ont. Ent. Soc., Ann. Rpt. 14: 17, 40-42. —Rohwer, 1915. Ent. Soc. Wash., Proc. 17: 195 (mating habits).

mellipes Harris. N. S. to N. C. w. to N. W. T., B. C., Oreg., Mont., Minn., Ill. Host: *Alnus*, *Fagus*, *Betula alleghaniensis*, *B. lenta*, *B. occidentalis*.

Xiphidria mellipes Harris, 1841. Rpt. Ins. Mass. Injurious to Veg., p. 393. ♀.

Xiphidria walshii Westwood, 1874. Thesaurus Ent. Oxon., p. 113. ♂.

Xiphidion Canadensis Provancher, 1875. Nat. Canad. 7: 374. ♀. Preocc.

Xiphidria provancheri Cresson, 1880. Amer. Ent. Soc., Trans. 8: 49. N. name for *canadensis* Provancher.

Biology: Rohwer, 1918. Ent. News 29: 110. —Yuasa, 1922. Ill. Biol. Monog. 7: 113.

tibialis Say. N. S., Que. to Fla. w. to Wis., Ill., Kans. Host: *Acer*, *Betula nigra*, *Carpinus caroliniana*, *Crataegus*, *Fagus*, *Malus*, *Quercus*, *Rhus typhina*, *Tilia americana*, *Ulmus*.

Xiphidria tibialis Say, 1824. In Keating, Narr. Long's 2nd Exped., v. 2 (App.), p. 312. ♀.

Xiphidria erythrogaster Ashmead, 1903. Canad. Ent. 35: 233. ♂.

Xiphidria champlaini Rohwer, 1921. U. S. Natl. Mus., Proc. 59: 84. ♀, ♂.

Biology: Packard, 1890. U. S. Dept. Agr., Ent. Comm. Rpt. 5: 483-484.

Family ORUSSIDAE

Larvae of this family are believed to be parasites of wood boring insects, particularly beetle larvae. *Guiglia schauinslandi* (Ashmead) of New Zealand has been documented as a parasite of the siricid, *Sirex noctilio* (Fabricius). Adults are most commonly collected from standing or downed dead trees on which they have a characteristic upward and downward or back and forth running pattern. The family is cosmopolitan and contains about 66 species in 14 genera with the bulk of the species found in the tropical regions.

Revision: Bradley, 1901. Amer. Ent. Soc., Trans. 27: 317-318. —Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 141-158.

Taxonomy: Benson, 1935. Rhodesian Mus., Occ. Papers No. 4, 10 pp. (world genera).

—Guiglia, 1943. Genova Mus. Civ. Stor. Nat., Ann. 62: 85-111 (world catalog). —Benson, 1938. Ann. and Mag. Nat. Hist. 2: 1-15 (world genera). —Benson, 1955. Roy. Ent. Soc.

London, Proc., Ser. B: Taxonomy 24: 13-23 (world classification). —Guiglia, 1957. Genova Mus. Civ. Stor. Nat., Ann. 69: 48-59 (suppl. to world catalog). —Guiglia, 1965. In Ferriere and van der Vecht, Cat. Hym., pt. 1, 18 pp. (world catalog).

Biology: Burke, 1917. Ent. Soc. Wash., Proc. 19: 87-89. —Rohwer and Cushman, 1917. Ent. Soc. Wash., Proc. 19: 89-98 (suborder Idiogastra). —Cooper, 1953. Rochester Acad. Sci., Proc. 10: 38-68 (habits, oviposition, female anatomy of eastern *Orussus*).

SUBFAMILY ORUSSINAE

Genus ORUSSUS Latreille

Orussus Latreille, 1796. *Precis Caract. Gen. Ins.*, p. 111.

Type-species: *Oryssus coronatus* Fabricius. Desig. by Latreille, 1810.

Oryssus Fabricius, 1798. *Sup. Ent. System.*, p. 218. Emend.

maurus (Harris). Mass.

Oryssus maurus Harris, 1841. *Rpt. Ins. Mass. Injurious to Veg.*, p. 394. ♀.

occidentalis (Cresson). Colo., N. Mex. w. to B. C., Wash., Oreg., Calif.

Oryssus occidentalis Cresson, 1879. *Ent. Soc. Phila.*, Proc. 7: ix. ♀, ♂.

Oryssus modestus Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 150. ♀, melanic.

Oryssus abietes Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 153. ♀, ♂.

Oryssus pini Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 154. ♀.

Oryssus relativus Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 155. ♀.

Oryssus hopkinsi Rohwer, 1912. U. S. Natl. Mus., Proc. 43: 155. ♂, partial melanic.

Taxonomy: Rohwer and Cushman, 1917. Ent. Soc. Wash., Proc. 19: 89-98. —Yuasa, 1922. *Ill. Biol. Monog.* 7: 118.

Biology: Burke, 1917. Ent. Soc. Wash., Proc. 19: 87-89. —Powell and Turner, 1969. *Pan-Pacific Ent.* 45: 73-74 (oviposition behavior).

Morphology: Parker, 1934. *Bol. Lab. Zool. Gen. e Agr. Portici* 28: 159-191 (larval anatomy).

sayii (Westwood). Ont., Maine to Md. w. to Ill.

Oryssus sayii Westwood, 1835. *Zool. Jour.* 5: 440. "♂" = ♀.

Oryssus terminalis Newman, 1838. *Ent. Mag.* 5: 486. ♀.

Oryssus haemorrhoidalis Harris, 1841. *Rpt. Ins. Mass. Injurious to Veg.*, p. 394. ♀.

Oryssus affinis Harris, 1841. *Rpt. Ins. Mass. Injurious to Veg.*, p. 394. ♂.

Biology: Blackman and Stage, 1924. Syracuse Univ., N. Y. State Col. Forestry, Tech. Pub. 17, 24: 154 (in hickory). —Pratt, 1938. *Psyche* 45: 94-95. —Cooper, 1953. *Rochester Acad. Sci., Proc.* 10: 38-68.

thoracicus (Ashmead). Ariz., Wash., Oreg., Calif.

Oryssus thoracicus Ashmead, 1898. *Canad. Ent.* 30: 178. "♂" = ♀.

SUBFAMILY OPHRYNOPINAE

Genus OPHRYNOPUS Konow

Ophrynopus Konow, 1897. *Termes. Fuzetek* 20: 605.

Type-species: *Ophrynopus andrei* Konow. Desig. by Rohwer, 1911.

Ophrynella Ross, 1937. *Ill. Biol. Monog.* 15(2): 113.

Type-species: *Oryssus nigricans* Cameron. Orig. desig.

This genus contains 7 Neotropical species, one of which reaches Texas. An unidentified species has been collected in Arizona.

nigricans (Cameron). Tex.; Guatemala.

Oryssus nigricans Cameron, 1883. *Biol. Cent.-Amer., Hym.* v. 1, p. 69. ♀.

Genus KULCANIA Benson

Kulcania Benson, 1935. *Rhodesian Mus., Occ. Papers* No. 4, pp. 2, 5.

Type-species: *Ophrynopus costaricensis* Bischoff. Orig. desig.

An unidentified species belonging to this genus has been collected in Florida.

Superfamily CEPHOIDEA

Family CEPHIDAE

The Cephidae are called stem sawflies because of the habit of the larvae which bore and feed in grass stems, berry canes, or stems or twigs of various shrubs or trees. Those species whose hosts are cultivated grains may be serious pests. The adults are slender, cylindrical, ichneumon-like insects and may be found around the host plant. Adults of Cephini are commonly attracted to yellow flowers in the vicinity of the host. About 13 genera and 100 species are recognized for the world, most of which are Palaearctic.

Revision: Ries, 1937. Amer. Ent. Soc., Trans. 63: 259-324 (Nearctic species). — Middlekauff, 1969. Calif. Ins. Surv., Bul. 11: 1-18 (keys to Nearctic genera and species; emphasis on Calif. species).

Taxonomy: Middleton, 1917. Ent. Soc. Wash., Proc. 19: 174-179 (larvae). — Benson, 1935. Ann. and Mag. Nat. Hist., (10) 16: 535-553 (world genera). — Klima, 1937. In Hedicke, Hym. Cat., pt. 2, pp. 1-51 (world catalog). — Benson, 1946. Roy. Ent. Soc. London, Trans. 96: 89-108 (world classification; keys to subfamilies, tribes, genera).

SUBFAMILY CEPHINAE

TRIBE HARTIGIINI

Genus CAENOCEPHUS Konow

Caenocephus Konow, 1896. Wien. Ent. Ztg. 15: 151.

Type-species: *Caenocephus jakowleffi* Konow. Monotypic.

The only other species in this genus is found in Siberia.

aldrichi Bradley, B. C., Wash., Idaho, Oreg., Calif. Host: *Conium maculatum*(?). An adult collection record.

Caenocephus aldrichi Bradley, 1905. Canad. Ent. 37: 363. ♀.

Caenocephus konowi Bradley, 1905. Canad. Ent. 37: 363. ♂.

Taxonomy: Middlekauff, 1952. Pan-Pacific Ent. 28: 108 (distribution; possible host).

Genus HARTIGIA Schiodte

Hartigia Schiodte, 1838. In Kroyer, Naturhist. Tidsskr., v. 2, p. 332.

Type-species: *Astutus satyrus* Panzer. Desig. by Boie, 1855.

Cerobractus Costa, 1860. Fauna del Regno di Napoli, Imen., pt. 3, p. 9.

Type-species: *Cerobractus major* Costa. Monotypic.

Macrocephus Schlechtendal, 1878. Ent. Nachr. 4: 153.

Type-species: *Macrocephus ulmariae* Schlechtendal. Monotypic.

Cephosoma Gravl, 1881. Ent. Nachr. 7: 294.

Type-species: *Cephosoma syringae* Gravl. Monotypic.

Copiosoma Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 364. Error for *Cephosoma* Gravl ?.

Adirus Konow, 1899. Ent. Nachr. 25: 74.

Type-species: *Cephus trimaculatus* Say. Monotypic.

Paradirus Dovnar-Zapolskii, 1931. Mus. Zool. Acad. Sci. Leningrad, Ann. 32: 39.

Type-species: *Paradirus algiricus* Dovnar-Zapolskii. Monotypic.

Larvae of this genus bore in stems of roses and berries. Of 15 species, only 3 are found in North America.

cowichana Ries. B. C., Wash., Oreg. Host: *Rosa*.

Hartigia cowichana Ries, 1937. Ent. News 48: 82. ♀.

cressonii (Kirby). Mont., Nev., Oreg., Calif. Host: *Rosa*, *Rubus*.

Cephus abdominalis Cresson, 1880. Amer. Ent. Soc., Trans. 8: 33. ♀. Preocc.

Cephus cressonii Kirby, 1882. List Hym. Brit. Mus., v. 1, p. 403. N. name.

Biology: Essig, 1912. Calif. Comm. Hort., Monthly Bul. 1: 889-901. — Essig, 1926. Ins. of West. No. Amer., pp. 775-776. — Middlekauff, 1969. Calif. Ins. Surv., Bul. 11: 5-6.

trimaculata (Say). Que. to Fla. w. to B. C., Wash., Idaho, Utah, La.; Mexico. Host: *Rosa*, *Rubus*.

Cephus trimaculatus Say, 1824. In Keating, Narr. Long's 2nd Exped., v. 2, (App.), p. 313. ♀, ♂.

Cephus mexicanus Guerin, 1845. Iconogr. Regn. Animal. Ins. 3: 403.

Phyllocus bicornatus Provancher, 1875. Nat. Canad. 7: 375. ♀.

Cephus bifasciatus Cresson, 1880. Amer. Ent. Soc., Trans. 8: 33. ♀.

Cephus fasciatus Cresson, 1880. Amer. Ent. Soc., Trans. 8: 33. ♀.

Macrocephus nigripennis Ghigi, 1915. Redia 10: 306. ♀, ♂.

Biology: Britton, 1923. Conn. (State) Agr. Expt. Sta., Bul. 247: 372. — Champlain, 1924. Jour. Econ. Ent. 17: 648.

Genus JANUS Stephens

Janus Stephens, 1835. Illus. Brit. Ent., v. 7, p. 107.

Type-species: *Janus connectens* Stephens. Desig. by Westwood, 1840.

Phyllocus Newman, 1838. Ent. Mag. 5: 485.

Type-species: *Phyllocus faunus* Newman. Monotypic.

Ephippionotus Costa, 1860. Fauna del Regno di Napoli, Imen., pt. 3, Cefidei, p. 11.

Type-species: *Ephippionotus luteiventris* Costa, Monotypic.

Larvae of this genus bore in the stems of bushes and trees. *Janus compressus* (Fabricius) of Europe and *Janus piri* Okamoto and Muramatsu of the Far East are pests of pear trees. About 19 world species are known.

abbreviatus (Say). Ont. to Va. w. to Man., Minn., Ill. Host: *Populus*, *Salix*. Willow shoot sawfly.

Cephus abbreviatus Say, 1824. In Keating, Narr. Long's 2nd Exped., v. 2, (App.), p. 314. ♀.

Xiphydria basalis Say, 1837. Boston Jour. Nat. Hist. 1: 222. ♀.

Cephus heteropterus Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 224. ♂.

Cephus interruptus Provancher, 1888. Addit. Corr. Faune Ent. Canada, Hym. p. 355. ♀, ♂.

Biology: Middleton, 1917. Ent. Soc. Wash., Proc. 19: 176. — Britton, 1918. Conn. (State) Agr. Expt. Sta., Bul. 203: 359. — Zappe, 1926. Conn. (State) Agr. Expt. Sta., Bul. 275: 322.

bimaculatus (Norton). Que. and Maine to Md. w. to Minn., Ill. Host: *Viburnum lentago*, *V. prunifolium*.

Phyllocus bimaculatus Norton, 1868. Amer. Ent. Soc., Trans. 2: 346. ♀, ♂.

Cephus quadriguttatus Westwood, 1874. Thesaur. Ent. Oxon., p. 111, pl. 20, fig. 11. ♀.

integer (Norton). Newfoundland to Md. w. to Man., Wash., Iowa. Host: *Ribes*. Currant stem girdler.

Cephus integer Norton, 1861. Boston Soc. Nat. Hist., Proc. 8: 224. ♀.

Janus flaviventris Fitch, 1862. N. Y. State Agr. Soc., Trans. 21: 852.

Biology: Slingerland, 1897. Cornell Univ., Agr. Expt. Sta., Bul. 126: 41-53. — Middleton, 1917. Ent. Soc. Wash., Proc. 19: 176. — Britton, 1921. Conn. (State) Agr. Expt. Sta., Bul. 226: 201-204.

rufiventris (Cresson). Oreg., Calif.

Cephus rufiventris Cresson, 1880. Amer. Ent. Soc., Trans. 8: 33. ♀.

TRIBE CEPHINI

Genus CEPHUS Latreille

Astutus Jurine, 1801. Intell. Blatt. Litt.-Ztg. Erlangen, v. 1, p. 163. Suppressed by Internatl. Comm. Zool. Nomencl., Opinion 135, 1936.

Type-species: *Sirex pygmaeus* Linnaeus. Monotypic.

Cephus Latreille, 1802. Hist. Nat. Crust. Ins., v. 3, p. 303.

Type-species: *Sirex pygmaeus* Linnaeus. Desig. by Latreille, 1810.

Perinistilus Ghigi, 1904. Ann. Mus. Napoli 1: 26.

Type-species: *Cephus politissimus* Costa. Monotypic.

Peronistilomorphus Pic, 1916. Echange 33: 381.

Type-species: *Peronistilomorphus berytensis* Pic. Monotypic.

Cephus subg. *Fossulocephus* Pic, 1917. Echange 34: 2.

Type-species: *Cephus (Fossulocephus) cintriventrus* Pic. Monotypic.

Pseudocephus Dovnar-Zapolskii, 1931. Mus. Zool. Acad. Sci. Leningrad, Ann. 32: 47.

Type-species: *Cephus pulcher* Tischbein. Orig. desig.

Of the 25 to 30 world species only 2 are found in North America and one of these is an introduction. Larvae bore in the stems of grasses and may be serious pests in cultivated grain crops.

cinctus Norton. Man., Mich., Ohio, Mo., Ark. w. to Alta., Wash., Oreg., Calif. Ecology: Most serious crop damage is in the wheat growing areas of the north central states and south central provinces. The preferred host is wheat, but to a lesser extent spring rye, barley, and timothy; also native grasses. Host: *Triticum aestivum*, *Secale cereale*, *Hordeum vulgare*, *Phleum pratense*, *Agropyron*, *Beckmannia*, *Bromus*, *Calamagrostis*, *Calamovilfa*, *Deschampsia*, *Elymus*, *Festuca*, *Stipa*. One or more species in the preceding genera may be suitable hosts. Wheat stem sawfly.

Cephus cinctus Norton, 1872. Amer. Ent. Soc., Trans. 4: 86. ♂.

Cephus occidentalis Riley and Marlatt, 1891. U. S. Dept. Agr., Insect Life 4: 177. ♀, ♂.

Cephus graenicheri Ashmead, 1898. Canad. Ent. 30: 182. ♀, ♂.

Biology: Ainslie, 1920. U. S. Dept. Agr., Bul. 841, 27 pp. — Ainslie, 1929. U. S. Dept. Agr., Tech. Bul. 157, 23 pp. — Wallace and McNeal, 1966. U. S. Dept. Agr., Tech. Bul. 1350, 50 pp. (history; damage; distribution; hosts; biology; control; breeding for sawfly resistance; extensive bibliography to work prior to 1966, much to large to repeat here). — McWilliams, Pesho, and Hodgins, 1970. Jour. Econ. Ent. 63: 993-994 (plastic light-filters for field studies of behavior). — Villacorta, Bell, and Callenbach, 1971. Jour. Econ. Ent. 64: 749-751 (influence of high temperature and light on post-diapause development).

Morphology: Holmes, 1970. Canad. Ent. 102: 713-715 (sexing larvae).

pygmaeus (Linnaeus). Ont., Mass., Conn., N. Y., N. J., Pa., Del., Md., N. C.; Europe. Ecology: Found mostly on cultivated grasses, primarily wheat, but to a lesser extent barley, rye, and the uncultivated cheat grass. Introduced, first found in Ont. and N. Y. in the 1880's.

Host: *Triticum aestivum*, *Secale cereale*, *Hordeum vulgare*, *Bromus secalinus*.

European wheat stem sawfly.

Sirex pygmaeus Linnaeus, 1766. Syst. Nat., Ed. 12, p. 929.

Tenthredo longicornis Geoffroy, 1785. in Fourcroy, Ent. Paris. p. 378.

Tenthredo polygona Gmelin, 1790. Syst. Nat., v. 5, p. 2670.

Banchus spinipes Panzer, 1801. Faunae Ins. German., heft 73, pl. 17.

Astutus floralis Klug, 1803. Monog. Siricum German., p. 53.

Banchus viridator Fabricius, 1804. Systema Piezatorum, p. 127.

Cephus subcylindricus Gravenhorst, 1807. Vergl. Uebers. Zool. Syst., p. 274.

- Cephus Leskii* Lepelletier, 1823. Monog. Tenthred., p. 20.
Cephus atripes Stephens, 1835. Illus. Brit. Ent., v. 7, p. 105.
Cephus flavisternus Costa, 1882. Accad. delle Sci. Fis. e Mat. Napoli, Rend., p. 198. ♀.
Cephus clypealis Costa, 1894. Prosp. Imen. Ital., v. 3, p. 250. ♂.
Cephus notatus Kokujev, 1910. Rev. Russe d'Ent. 10: 132. ♀.
Cephus tanaiticus Dovnar-Zapolskii, 1926. N. Caucasian Plant Protection Station, Bul. 1: 2, 5.

Biology: Comstock, 1889. Cornell Univ., Agr. Expt. Sta., Bul. 11: 127-142. —Chittenden, 1892. U. S. Dept. Agr., Insect Life 4: 344. —Ries, 1926. Jour. Agr. Res. 32: 277-295. —Udine, 1941. U. S. Dept. Agr. Circ. 607, 9 pp. —Wallace and McNeal, 1966. U. S. Dept. Agr., Tech. Bul. 1350, 50 pp. (history; damage; distribution; hosts; biology; control; breeding for sawfly resistance; extensive bibliography to work prior to 1966, too large to repeat here).

Morphology: Parker, 1934. Bol. Lab. Zool. Gen. e Agr. Portici 28: 189-191 (larval anatomy).

Genus CALAMEUTA Konow

- Calameuta* Konow, 1896. Wien. Ent. Ztg. 15: 151.
 Type-species: *Cephus filiformis* Eversmann. Desig. by Rohwer, 1911.
Monoplopus Konow, 1896. Wien. Ent. Ztg. 15: 151.
 Type-species: *Tenthredo saltuum* (Linnaeus), Fabricius *nec* Linnaeus. Desig. by Rohwer, 1911.
Haplocephus Benson, 1935. Ann. and Mag. Nat. Hist., (10) 16: 544.
 Type-species: *Haplocephus aureus* Benson. Orig. desig.

In addition to the single North American representative, there are about 15 Palaearctic species.

clavata (Norton). Idaho, Wash., Oreg., Calif. Host: Grasses. Specific hosts not known.

Phyllocerus clavata Norton, 1869. Amer. Ent. Soc., Trans. 2: 345. ♀.

Taxonomy: Benson, 1946. London Ent. Soc., Trans. 96: 103-104.

Genus TRACHELUS Jurine

- Astatus* Panzer, 1801. Faunae Ins. German., heft 83, pl. 12. Preocc.
 Type-species: *Sirex troglodyta* Fabricius. Desig. by Rohwer, 1911.
Trachelus Jurine, 1807. Nouv. Method. Class. Hym. Dipt., p. 70.
 Type-species: *Sirex tabidus* Fabricius. Monotypic.
Cepha Billberg, 1820. Enum. Ins. Mus. Billberg, p. 98.
 Type-species: *Sirex tabidus* Fabricius. Monotypic.
Ateuchopus Konow, 1896. Wien. Ent. Ztg. 15: 151.
 Type-species: *Ateuchopus armenius* Konow. Desig. by Rohwer, 1911.
Eumetabolus Schulz, 1906. Spolia Hym., p. 211.
 Type-species: *Sirex troglodyta* Fabricius. Desig. by Rohwer, 1911.
Trachelastatus Morice and Durrant, 1915. Ent. Soc. London, Trans. p. 383. N. name for *Cepha* Billberg.
Neateuchopus Benson, 1935. Ann. and Mag. Nat. Hist., (10) 16: 543.
 Type-species: *Neateuchopus tigris* Benson. Orig. desig.
Microcephus Benson, 1935. Ann. and Mag. Nat. Hist., (10) 16: 545.
 Type-species: *Monoplopus judaicus* Konow. Orig. desig.

The 6 species in this genus are found in the Mediterranean Region with one species introduced into North America. Larvae bore in the stems of various grasses.

tabidus (Fabricius). N. Y., N. J., Pa., Del., Md., Va., W. Va., Mich., Ohio; Europe, N. Africa, Asia Minor. Ecology: Found on cultivated grasses such as wheat, barley, rye, and oats. No wild grass host is known in N. Amer. May not now occur in N. Y., N. J., and e. Pa due to competition with *Cephus pygmaeus*. Introduced, first found in N. J. prior to 1899. Host: *Triticum aestivum*, *Secale cereale*, *Hordeum vulgare*, *Avena*. Black grain stem sawfly.

Sirex tabidus Fabricius, 1775. Systema Ent., p. 326.

Sirex macilentus Fabricius, 1793. Ent. Syst., v. 2, p. 131.

Cephus mandibularis Lepeletier, 1823. Monog. Tenthred., p. 19.

Cephus nigratus Lepeletier, 1823. Monog. Tenthred., p. 20.

Cephus vittatus Costa, 1878. Accad. delle Sci. Fis. e Mat. Napoli, Atti. 7: 14.

Calamenta(!) johnsoni Ashmead, 1900. N. J. State Bd. Agr. Ann. Rpt. Sup., p. 600.

Biology: Gahan, 1920. U. S. Dept. Agr., Bul. 834, 18 pp. — Hauser, 1935. Jour. Econ. Ent. 28: 457-458. — Hauser, 1936. Ohio Agr. Expt. Sta. Bimonthly Bul. 21: 109-111. — Udine, 1941. U. S. Dept. Agr. Circ. 607, 9 pp. — Wallace and McNeal, 1966. U. S. Dept. Agr., Tech. Bul. 1350, 50 pp. (history; damage; distribution; hosts; biology; control; breeding for sawfly resistance; extensive bibliography to work prior to 1966, too large to repeat here).

Morphology: Parker, 1934. Bol. Lab. Zool. Gen. e Agr. Portici 28: 159-191 (larval anatomy).

Suborder APOCRITA

By KARL V. KROMBEIN

This suborder includes a vast and diverse assemblage of species-level taxa, and many more genus- and family-level taxa than does the suborder Symphyta. Other names used in the past for the suborder include Petioliventre or Petiolata, Clistogastra and Heterophaga. Common names applied to the major groups of Apocrita include braconid and ichneumonid wasps, chalcid flies or wasps, gall wasps, ants, true wasps and bees. The first three groups are sometimes placed in the Division Parasitica or Terebrantia, and the latter three in the Division Aculeata. More detailed information is included under the divisional headings.

There are several important characters separating the Apocrita from the Symphyta. The apparent thorax is separated from the apparent abdomen by a constriction. What appears to be the thorax actually consists of the true thorax to which is fused the first abdominal segment (propodeum); the apparent thorax is sometimes termed the mesosoma or alitrunk. What appears to be the entire abdomen is termed the gaster or metasoma. The venation, especially that of the hind wing, is reduced in size and has fewer veins and cells than in Symphyta. The larvae are maggot-like and apodous; some have fleshy pseudopods on the thorax or abdomen which assist in very limited locomotion but which are not homologous with the thoracic prolegs found in most sawflies.

The majority of larval Apocrita, including the most primitive, are entomophagous. However, phytophagy has developed independently in many higher groups such as some Chalcidoidea, most Cynipoidea, a few Vespoidea and the Apoidea.

There are some fifteen times as many Apocrita recorded from North America as Symphyta. However, it is virtually certain that this ratio will be substantially increased in the future when the smaller Parasitica are more thoroughly collected and studied.

Taxonomy: Rasnitsyn, 1975. Akad. Nauk SSSR, Palaeont. Inst., Trans. 147: 1-132, 8 pls. (Mesozoic Apocrita). — Rasnitsyn, 1975. Akad. Nauk SSSR, Zool. Zhur. 54: 848-860, 1 pl. (early evolution).

Biology: Clausen, 1940. Entomophagous Insects, 688 pp., 257 figs.

Division PARASITICA

By PAUL M. MARSH AND ROBERT W. CARLSON

The divisional name applies to those groups of nonsocial Apocrita in which the ovipositor always retains the function of egg placement (i.e. is never modified to be only a stinging organ) and in which the species: (1) are usually ectoparasites or endoparasites of other insects or spiders, and, less frequently, phytophagous; (2) are never provisioners of nests; and (3) are mostly incapable of stinging human beings. The latter fact appears to result largely from the relative smallness of most Parasitica; they generally are not physically capable of piercing the human epidermis with the ovipositor. However, collectors of Ichneumonidae know by experience that a significant proportion of the species above median ichneumonid size are capable of stinging humans. Whether any Parasitica of families other than Ichneumonidae are capable of stinging humans is unknown to us, but it seems likely that a few of the largest Braconidae would have this capability. Probably all or nearly all females of Parasitica, when grasped in ways that do not restrict abdominal movement, make reflexive stinging movements; similar defensive movements are also made by males of at least some species. Some of the ectoparasitic members of this division have stings which paralyze the host permanently, and the stings of ectoparasitic species in general are more venomous than those of endoparasitic species (see Iwata, 1976). However, there are presumably numerous species of both types which do not have venomous stings.

The dividing point between the divisions Parasitica and Aculeata is rendered arbitrary by the fact that the latter includes numerous ectoparasitic species (but no endoparasitic ones) as well as by the fact that there are no differences in biology or structure which apply to all the members of either group. Recognition of the two groups is a matter of tradition and convenience.

The habits and life histories of Parasitica are too diverse to be delved into here. Limited discussions will be found in the introductions for some of the genera and supergeneric taxa.

Biology: Clausen, 1940. *Entomophagous Insects*, p. 3-342. — Douthett, 1959. *Ann. Rev. Ent.* 4:161-182. — Hagen, 1964. *In* DeBach, *Biol. Control Insect Pests and Weeds*, p. 168-246.
— Askew, 1971. *Parasitic Insects*, p. 113-184. — Iwata, 1976. *Evol. Instinct, Compar. Ethol.* Hyms., Eng. ed., p. 1-84.

Superfamily ICHNEUMONOIDEA

By PAUL M. MARSH AND ROBERT W. CARLSON

Present data on numbers of species ranks the Ichneumonoidea as the largest superfamily of Hymenoptera. It includes the bulk of the larger Parasitica, most ichneumonoids being over 5 mm in length and a few being longer than 50 mm. A greater percentage of Ichneumonoidea than other Parasitica have the ovipositor conspicuously exposed, but, on the other hand, a very significant portion of Ichneumonoidea have ovipositors that protrude scarcely or not at all beyond the median dorsal extremities of the apical tergites. Townes (1975) discussed the Hymenoptera (mostly Ichneumonoidea) with the longest ovipositors; he cited a species of "*Iphiaulax?*" (Braconidae) with an ovipositor 14 times the length of the body.

The distinguishing characters of Ichneumonoidea are: the usual fusion of the costal and subcostal veins of the fore wing; the long antennae, which are usually more than 14-segmented; and the 2-segmented hind trochanters (the other trochanters usually also being 2-segmented). The characters are for the most part shared by the Braconidae, Aphidiidae, Hybrizontidae, Ichneumonidae, and Stephanidae, the five families here considered to comprise the Ichneumonoidea. In the case of the Stephanidae, however, there is some question about the correctness of placement in the Ichneumonoidea (see Townes, 1969, p. 3). The larval head capsule of stephanids is considerably different from those of other ichneumonoid families (personal commun., J. R. T. Short, 1976), and in stephanids the costa and subcosta are more distinctly separated than in other ichneumonoid families. Nevertheless, we believe it best to leave the Stephanidae in the Ichneumonoidea until further studies are made.

The Aphidiidae and Hybrizontidae are sometimes treated as subfamilies of Braconidae (see van Achterberg, 1976). Some early 19th Century authors referred to the combination of the latter three groups as the "Ichneumonidum adscitorum" (?unauthentic Ichneumonidae) which they distinguished from the "Ichneumonidum genuinorum" (genuine Ichneumonidae). The distinction largely resulted from Jurine's (1807) classification of the veins and cells of hymenopterous fore wings and his provision of terms for some of the veins and cells (e.g. "nervi recurrentes"). Eady (1974) provided an excellent discussion of the way in which the Jurinean system of wing vein and cell nomenclature was modified and expanded by those who adopted Jurine's ideas. He reviewed the systems of wing vein nomenclature which are currently used for Braconidae and compared them with usages for Aphidiidae, Ichneumonidae, and other Hymenoptera. He proposed an "interim method [in order] to overcome the more frequently voiced objections to ... [the Comstock-Needham] system without adding to the confusion or obstructing progress toward uniformity."

It was apparently by mutual agreement that Gravenhorst (1819) and Nees ab Esenbeck (1819) decided to specialize on the Ichneumonidum genuinorum and Ichneumonidum adscitorum, respectively. In the papers referred to, they simultaneously outlined their plans for the monographs which are here cited in the sections to which they pertain. Thunberg (1822, 1824) chose to

ignore the revolutionary advances in classification made possible by the work of Jurine and reverted to lumping all of the Ichneumonoidea under the generic name *Ichneumon* (see introduction to Ichneumonidae). Consequently, Thunberg's work was largely ignored prior to Roman's (1912) study of his type specimens.

The actual number of species in the Ichneumonoidea can only be estimated. The Braconidae contains about 2,000 described species in North America and about 10,000 worldwide; the Ichneumonidae about 3,000 in North America and about 15,000 worldwide. However, the total number of species is estimated to be 60,000 worldwide in the Ichneumonidae (Townes, 1969, p. 7) and 40,000 in the Braconidae.

Except for Hybrizontidae and Stephanidae, the families of Ichneumonoidea occur in all zoogeographical regions and in all terrestrial habitats. In the Ichneumonidae the Western Palearctic fauna is best known followed by the Nearctic, whereas the reverse seems to be true for the Braconidae. As in the case of Chalcidoidea, most of our knowledge of the Ichneumonoidea has been derived from species of economic importance to agriculture. For the vast majority of species, there is little or no knowledge of biology.

The ichneumonoids are parasitic on nearly all groups of insects as well as on spiders, and all stages of these hosts are attacked. Aphidiidae, many Braconidae, and possibly Hybrizontidae (hosts of latter unknown) attack paurometabolous insects, while no paurometabolous hosts are known for Ichneumonidae or Stephanidae. The only ichneumonoids which attack adults of holometabolous insects are certain euphorine and blacine Braconidae. Aside from the limitations which have been mentioned, large numbers of Ichneumonoidea are polyphagous and the limits of the host range seem to be related more to the host habitat than to the taxonomy of the host.

The only families of Ichneumonoidea which are known to include hyperparasitic species are Ichneumonidae and Braconidae, but only a very few Braconidae could be regarded as hyperparasitic (i.e. a few Euphorinae which attack adult Ichneumonidae). The fact that hyperparasitism is much more prevalent in the Ichneumonidae than in the Braconidae is explained largely (but not in the case of mesochorine and eucerotine Ichneumonidae) by the fact that certain Ichneumonidae have the habit of attacking hosts which are confined within silken cocoons (e.g. sawfly prepupae, ichneumonoid prepupae, spider eggs, chrysopid eggs, etc.), while this habit has not developed among Braconidae. Further discussion of host relations is deferred to the introductions to the various taxa.

Taxonomy: Jurine, 1807. *Nouv. Meth. Class. Hym. Dipt.* v. 1, 324 p. and 14 pl. —Gravenhorst, 1819 (1818). *Nova Acta Leopoldina* 9: 281-298. —Nees ab Esenbeck, 1819 (1818). *Nova Acta Leopoldina* 9: 299-310. —Thunberg, 1822; 1824. *Acad. Imp. des Sci. St. Petersburg*, Mem. 8: 249-281 (key); 9: 285-368. —Ashmead, 1900. *U. S. Natl. Mus.*, Proc. 23: viii and 220 p. (classification of Ichneumonoidea and Evanoidea). —Roman, 1912. *Zool. Bidr. Uppsala* 1: 231-293. —Viereck, 1914. *U. S. Natl. Mus.*, Bul. 83: v and 186 p. (type-species of Ichneumonoidea and Evanoidea). —Viereck, 1921. *U. S. Natl. Mus.*, Proc. 59: 129-150 (sup. to Viereck, 1914). —Townes, 1969. *Amer. Ent. Inst.*, Mem. 11: 2-7. —Eady, 1974. *Jour. Ent.* (B) 43: 63-72. —Townes, 1975. *Ent. News* 86: 123-127. —van Achterberg, 1976. *Tijdschr. v. Ent.* 119: 33-78.

Family BRACONIDAE

By PAUL M. MARSH

This is a large and important group of mostly primary parasites. They are closely allied with the Ichneumonidae and can be distinguished by the absence of the second recurrent vein in the forewing. The classification used in this catalog departs somewhat from the former catalog but is, nevertheless, a conservative arrangement and is based on studies made by Telenga (1952), Tobias (1967) and Capek (1969, 1970). This arrangement reflects as much as possible relationships among the groups with respect to morphology—larval as well as adult—and biology. The subfamilies Doryctinae, Braconinae, Exothecinae and Rogadinae form a morphologically similar group of unspecialized Braconidae called the Cyclostomi in reference to the circular opening formed by the clypeus and mandibles. The Doryctinae, Braconinae and Exothecinae are ectoparasites of cryptic host larvae, usually permanently paralyzing the host, and are considered to be the most primitive groups. The Rogadinae, which are endoparasites of lepidopterous larvae, represent the transition from external to internal parasitism which is exhibited by the

remainder of the Braconidae, or the Acyclostomi.

The subfamilies are arranged in this catalog essentially in phylogenetic order from the least specialized to the most specialized. However, within each subfamily the genera are arranged in alphabetical order as are the species within each genus. The names used for the hosts are the latest acceptable names which were available at the time the manuscripts were prepared. Where a North American species occurs in other geographical areas, only the North American hosts for that parasite are listed.

Taxonomy: Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 225-288. — Dalla Torre, 1898. Cat. Hym. v. 4, p. 1-323. — Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 104-149. — Szepligeti, 1904. In Wytsman, Gen. Ins., fasc. 22 a-b, 253 p. — Riegel, 1948. Ent. Soc. Amer., Ann. 4: 439-448 (wings). — Muesebeck and Walkley, 1951. In Muesebeck, *et al.*, U. S. Dept. Agr., Agr. Monog. 2, p. 90-184. — Telenga, 1952. Izd. Akad. Nauk Ukrain. S.S.R., Kiev, 139 p. (English translation made in 1969 by Israel Program for Scientific Translations). — Short, 1952. Roy. Ent. Soc. London, Trans. 103: 27-84 (larval tax.). — Muesebeck, 1958. In Krombein, U. S. Dept. Agr., Agr. Monog. 2, Supl. 1, p. 18-36. — Marsh, 1963. Ent. Soc. Amer., Ann. 56: 522-527 (key to subfam.). — Shenefelt, 1965. Beit. z. Ent. 15: 201-500 (literature on Braconidae). — Tobias, 1967. Ent. Obozr. 46: 645-669. — Muesebeck, 1967. In Krombein and Burks, U. S. Dept. Agr., Agr. Monog. 2, Supl. 2, p. 27-60. — Tobias, 1968. Acad. Sci. U. S. S. R., special issue, p. 3-43. — Capek, 1969. Ent. Soc. Wash., Proc. 71: 304-312. — Shenefelt, 1969. Hym. Cat., part 4, p. 1-176 (cat. World spp.). — Shenefelt, 1970. Hym. Cat., parts 5 and 6, p. 177-428 (cat. World spp.). — Capek, 1970. Canad. Ent. 102: 846-875. — Marsh, 1971. Ent. Soc. Amer., Ann. 64: 841-850 (key to No. Amer. genera). — Tobias, 1971. Trudy Vses. Ent. Obsch. 54: 156-268 (keys to subfamilies and genera; English translation, 1975, Coop. State Res. Serv., U. S. Dept. Agr. and Nat. Sci. Found.). — Shenefelt, 1972. Hym. Cat., part 7, p. 429-668 (cat. World spp.). — Shenefelt, 1973. Hym. Cat., parts 9 and 10, p. 669-936 (cat. World spp.). — Capek, 1973. Acta Inst. Forestalis Zoolenensis 1973: 259-268 (key to final instar larvae). — Shenefelt, 1974. Hym. Cat., part 11, p. 937-1113 (cat. World spp.). — Dudarenko, 1974. Ent. Obozr. 53: 114-129. — Papp, 1974. Folia Ent. Hung. (N. S.) 27: 109-133. — Shenefelt, 1975. Hym. Cat., part 12, p. 1114-1262 (cat. World spp.). — Shenefelt and Marsh, 1976. Hym. Cat., part 13, p. 1263-1424 (cat. World spp.). — van Achterberg, 1976. Tijdschr. v. Ent. 119: 33-78 (key to subfam.).

Biology: Matthews, 1974. Ann. Rev. Ent. 19: 15-32 (review of literature).

Morphology: Tobias and Dudarenko, 1974. Jour. Zool. 3: 65-72. — Dudarenko, 1974. Ent. Obozr. 53: 114-129. — Tobias, 1975. Ent. Obozr. 54: 137-150.

SUBFAMILY DORYCTINAE

This subfamily is probably the most primitive group of the Braconidae. Most species are ectoparasites of wood boring beetle larvae, but a few attack lepidopterous larvae and sawfly larvae. Although the subfamily represents a large and rather homogeneous group of genera, it has been divided into several subfamilies and tribes by past workers. It is treated here as defined by Marsh (1965, 1967, 1970) which includes the subfamily Spathiinae of the previous catalog.

Taxonomy: Marsh, 1965. Ent. Soc. Amer., Ann. 58: 668-699 (review of No. Amer. genera). — Marsh, 1967. Ent. Soc. Wash., Proc. 69: 359-360 (status of tribes). — Marsh, 1970. Ent. Soc. Wash., Proc. 72: 313 (notes on subfamily definition). — Marsh, 1973. Wash. Acad. Sci., Jour. 63: 69-72. — Shenefelt and Marsh, 1976. Hym. Cat., part 13, p. 1263-1424 (cat. World spp.).

Genus ACROPHASMUS Enderlein

Acrophasmus Enderlein, 1912. Arch. f. Naturgesch. 78(A)(2): 16.

Type-species: *Acrophasmus exilis* Enderlein. Orig. desig.

Most of the North American species of this Western Hemisphere genus were incorrectly placed in the genus *Doryctinus* prior to 1968. The meager host records suggest that parasitism is restricted to the powder post beetles of the families Bostrichidae and Lyctidae.

Revision: Marsh, 1968. Ent. Soc. Wash., Proc. 70: 101-107 (No. Amer. spp.).

Taxonomy: Shenefelt and Marsh, 1976. Hym. Cat., part 13, p. 1372-1373 (cat. World spp.).

arizonensis Marsh. Ariz.*Acrophasmus arizonensis* Marsh, 1968. Ent. Soc. Wash., Proc. 70: 102. ♀, ♂.**atriventris** (Cresson). Pa., Fla., Kans., Ark., Tex., N. Mex.; Mex.*Exothecus atriventris* Cresson, 1872. Amer. Ent. Soc., Trans. 4: 189. ♀.*Doryctes longicauda* Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 626. ♀. Preocc. by Giraud, 1857.*Doryctes ashmeadii* Dalla Torre, 1898. Cat. Hym., v. 4, p. 232. N. name for *longicauda* Ashmead.*Hormiopterus caudatus* Brues, 1907. Wis. Nat. Hist. Soc., Bul. 5: 62. ♀.

Taxonomy: Marsh, 1973. Wash. Acad. Sci., Jour. 63: 69.

butleri Marsh. Ariz.*Acrophasmus butleri* Marsh, 1968. Ent. Soc. Wash., Proc. 70: 103. ♀, ♂.**ferrugineus** Marsh. Pa. s. to Fla.; Miss., Mo., Tex. Host: *Lyctus planicollis* Lec.*Acrophasmus ferrugineus* Marsh, 1968. Ent. Soc. Wash., Proc. 70: 103. ♀, ♂.**immigrans** (Beardsley). N. C., S. C., Fla., La.; Hawaii. Host: *Lyctus* sp., *L. striatus* Melsh.*Doryctes immigrans* Beardsley, 1961. Haw. Ent. Soc., Proc. 16: 362. ♀.*Acrophasmus lycti* Marsh, 1968. Ent. Soc. Wash., Proc. 70: 105. ♀, ♂.

Taxonomy: Marsh, 1973. Wash. Acad. Sci., Jour. 63: 69.

scobiciae (Marsh). Calif. Host: *Scobicia declivis* (Lec.).*Doryctodes scobiciae* Marsh, 1966. Amer. Ent. Soc., Trans. 92: 513. ♀.

Taxonomy: Marsh, 1973. Wash. Acad. Sci., Jour. 63: 69.

secundus (Muesebeck and Walkley). Mass., R. I., Pa., N. J., Va., Ga., Mich., Ohio, Mo., La., Tex.*Heterospilus texanus* Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 214. ♂. Preocc. in*Doryctinus* by Ashmead, 1889 (1888).*Doryctinus secundus* Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 178. N. name for *texanus* Ashmead, 1896.**Genus AIVALYKUS** Nixon*Aivalykus* Nixon, 1938. Roy. Ent. Soc. London, Proc. (B) 7: 152.Type-species: *Aivalykus electes* Nixon. Orig. desig.

Taxonomy: Shenefelt and Marsh, 1976. Hym. Cat., part 13, p. 1352-1353 (cat. World spp.).

neartcticus Marsh. N. H., N. C., Fla., Tex. Host: *Phloeotribus frontalis* (Oliv.).*Aivalykus neartcticus* Marsh, 1965. Ent. Soc. Amer., Ann. 58: 677. ♀, ♂.**Genus ALLORHOGAS** Gahan*Allorhogas* Gahan, 1912. Ent. Soc. Wash., Proc. 14: 3.Type-species: *Allorhogas gallicola* Gahan. Orig. desig.

Host records indicate that some species of *Allorhogas* are associated with gall making insects, particularly cynipids on oaks. However, no definite host associations have been made with these galls and it is likely that the hosts are insects other than the gall makers themselves. One species has been reared from a cerambycid.

Taxonomy: Shenefelt and Marsh, 1976. Hym. Cat., part 13, p. 1265-1267 (cat. World spp.).

arizonensis (Ashmead). Ariz. Ecology: Reared from cynipid gall on oak.*Bracon* (?) *arizonensis* Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 616. ♀, ♂.**bruesi** (Muesebeck and Walkley). Mass.*Acrisis americanus* Brues, 1907. Wis. Nat. Hist. Soc., Bul. 5: 160. ♂. Preocc. in *Miocolus* by Ashmead, 1894.*Miocolus bruesi* Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 182. N. name for *americanus* Brues.

Taxonomy: Muesebeck, 1964. Ent. Soc. Wash., Proc. 66: 88.

gallicola Gahan. Mass., Conn., Md., Va. Ecology: Reared from galls of *Neuroterus**quercusbatatus* (Fitch), *Callirhytis seminosa* (Bass.), and "old horned gall on pin oak."*Allorhogas gallicola* Gahan, 1912. Ent. Soc. Wash., Proc. 14: 4. ♀, ♂.

pallidiceps (Perkins). Fla.; Hawaii, South Pacific Islands, Southeast Asia, India, South Africa.

Ecology: Frequently reared from wood crates on ships. This species was probably accidentally introduced into North and South America. Host: *Oeme rigida* (Say), *Xylotrechus quadripes* Chev., *Chlorophorus annularis* F.

Ischiogonus pallidiceps Perkins, 1910. Fauna Haw. 2 (6): 684. ♀, ♂.

Doryctes strioliger Kieffer, 1921. Inst. Sci. Saigon, Bul. Agr. 3: 134. ♀, ♂.

Monolexis brugirouxi Cheesman, 1928. Ann. and Mag. Nat. Hist. (10) 1: 185. ♀.

Taxonomy: Marsh, 1973. Wash. Acad. Sci., Jour. 63: 69.

Genus APTENOBRACON Marsh

Aptenobracon Marsh, 1965. Ent. Soc. Amer., Ann. 58: 675.

Type-species: *Aptenobracon formicoides* Marsh. Orig. desig.

formicoides Marsh. Va., Ga., Kans., Tex. Host: *Mordellistena* sp. on *Vernonia interior* Sm., *Trichobaris texana* Lec., "goldenrod galls."

Aptenobracon formicoides Marsh, 1965. Ent. Soc. Amer., Ann. 58: 675. ♀, ♂.

Genus CALLIHORMIUS Ashmead

Callihormius Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 148.

Type-species: *Pambolus bifasciatus* Ashmead. Orig. desig.

Revision: Marsh, 1966. Ent. Soc. Wash., Proc. 68: 240-246 (No. Amer. spp.).

bifasciatus (Ashmead). Maine s. to Fla., w. to Mo. and Tex.; Calif. Host: *Anthaxia viridicornis* (Say), *Mastogenius subcyaneus* (Lec.), *Xylotrechus quadrimaculatus* (Hald.).

Pambolus bifasciatus Ashmead, 1892. Psyche 6: 289. ♀, ♂.

stigmatus Marsh. N. J., Fla., La., Tex. Ecology: Reared from buprestid in avocado.

Callihormius stigmatus Marsh, 1966. Ent. Soc. Wash., Proc. 68: 243. ♀, ♂.

texanus Marsh. Fla., Tex.

Callihormius texanus Marsh, 1966. Ent. Soc. Wash., Proc. 68: 245. ♀.

weneri Marsh. Ariz.

Callihormius weneri Marsh, 1966. Ent. Soc. Wash., Proc. 68: 246. ♀.

Genus CURTISELLA Spinola

Curtisella Spinola, 1853. Accad. Sci. Torino, Mem. 13: 30.

Type-species: *Curtisella pimploides* Spinola. Monotypic.

Neorhyssa Szepligeti, 1902. Termes. Fuzetek 25: 57.

Type-species: *Neorhyssa nigra* Szepligeti. Monotypic.

Lissophrymnus Cameron, 1911. Timehri (3)1: 312.

Type-species: *Lissophrymnus annulicaudus* Cameron. Monotypic.

Subcurtisella Roman, 1924. Arkiv f. Zool. 16: 33.

Type-species: *Subcurtisella waterstoni* Roman. Monotypic.

Polystenoides Muesebeck, 1950. Ent. Soc. Wash., Proc. 52: 79.

Type-species: *Polystenoides lignicola* Muesebeck. Orig. desig.

Taxonomy: Roman, 1924. Arkiv f. Zool. 16: 33. — Marsh, 1971. Ent. Soc. Amer., Ann. 64: 844.

— Marsh, 1973. Wash. Acad. Sci., Jour. 63: 70. — Shenefelt and Marsh, 1976. Hym. Cat., part 13, p. 1373-1374 (cat. World spp.).

lignicola (Muesebeck). Pa., Md., N. C.

Polystenoides lignicola Muesebeck, 1950. Ent. Soc. Wash., Proc. 52: 79. ♀, ♂.

Genus DENDROSOTER Wesmael

Dendrosoter Wesmael, 1838. Nouv. Mem. Acad. Sci. Bruxelles 11: 137.

Type-species: *Bracon protuberans* Nees. Monotypic.

Bracon subg. *Eurybolus* Ratzeburg, 1848. Ichn. d. Forstb., v. 2, p. 32.

Type-species: *Bracon (Eurybolus) curtisii* Ratzeburg. Desig. by Viereck, 1914.

Caenopachys Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 239.

Type-species: *Bracon (Eurybolus) hartigii* Ratzeburg. Orig. desig.

Revision: Muesebeck, 1938. Ent. Soc. Wash., Proc. 40: 281-287 (No. Amer. spp.). —Nixon, 1939. Roy. Ent. Soc. London, Proc. (B) 8: 1-11 (Indian and African spp.). —Telenga, 1941. Fauna U. S. S. R., v. 5, n. 3, pp. 72-80, 388-389 (some Eur. spp.).

Taxonomy: Shenefelt and Marsh, 1976. Hym. Cat., part 13, p. 1269-1276 (cat. World spp.).
chansleri Marsh. N. Mex.

Dendrosoter chansleri Marsh, 1967. Ent. Soc. Wash., Proc. 69: 246. ♀.

integer Muesebeck. Idaho, Oreg., Calif. Host: *Phloeosinus cupressi* Hopk., *P. setosus* Bruck, *P. vandykei* Swaine, *Scolytus praeceps* Lec.

Dendrosoter integer Muesebeck, 1938. Ent. Soc. Wash., Proc. 40: 287. ♀, ♂.

protuberans (Nees). Va., Ohio, Mich., Wis., Mo., Colo.; Europe. Introduced from France. Host: *Scolytus multistriatus* (Marsham).

Bracon protuberans Nees, 1834. Hym. Ichn. Aff. Monog., v. 1, p. 121. ♀.

Taxonomy: Marsh, 1967. Ent. Soc. Wash., Proc. 69: 246.

Biology: Russo, 1938. Lab. Ent. Agr. Portici, Bol. 2: 244-255 (in Italy). —Kennedy, 1970. Ent. Soc. Amer., Ann. 63: 351-358.

scaber Muesebeck. Mont., N. Mex., Ariz., Oreg., Calif. Host: *Cylindrocopturus longulus* (Lec.), *Pityophthorus* sp.

Dendrosoter scaber Muesebeck, 1938. Ent. Soc. Wash., Proc. 40: 286. ♀, ♂.

scolytivorus (Viereck and Rohwer). S. Dak., Colo., Idaho, Ariz., Calif. Host: *Ips confusus* (Lec.), *I. oregonis* (Fitch).

Caenopachys scolytivorus Viereck and Rohwer, 1913. In Rohwer, U. S. Natl. Mus., Proc. 45: 536. ♂.

sulcatus Muesebeck. N. Y. s. to Fla., w. to Wis. and Tex. Host: *Dendroctonus frontalis* Zimm., *Ips avulsus* (Eichh.), *I. grandicollis* (Eichh.).

Dendrosoter sulcatus Muesebeck, 1938. Ent. Soc. Wash., Proc. 40: 284. ♀, ♂.

Genus DORYCTES Haliday

Doryctes Haliday, 1836. Ent. Mag. 4: 43.

Type-species: *Bracon obliteratus* Nees. Desig. by Erichson, 1837. The type-species of *Doryctes* is in the sense of Nees, not Haliday.

Ischiogonus Wesmael, 1838. Nouv. Mem. Acad. Sci. Bruxelles 11: 125.

Type-species: *Ischiogonus erythrogaster* Wesmael. Desig. by Viereck, 1914.

Udamolcus Enderlein, 1920 (1918). Arch. f. Naturgesch. 84(A)(11): 142.

Type-species: *Udamolcus herero* Enderlein. Orig. desig.

Pristodoryctes Kieffer, 1921. Inst. Sci. Saigon, Bul. Agr. 3: 133.

Type-species: *Pristodoryctes striativentris* Kieffer. Monotypic.

Paradoryctes Granger, 1949. Inst. Sci. Madagascar, Mem. (A) 2: 102.

Type-species: *Paradoryctes coralalis* Granger. Orig. desig.

Revision: Nixon, 1939. Ann. and Mag. Nat. Hist. (11) 3: 481-506 (Indian and African spp.).

—Telenga, 1941. Fauna U. S. S. R., v. 5, n. 3, pp. 92-108, 392-395 (some Eur. spp.). —Marsh, 1969 (1968). Amer. Ent. Soc., Trans. 94: 379-405 (No. Amer. spp.).

Taxonomy: Marsh, 1973. Wash. Acad. Sci., Jour. 63: 70. —Shenefelt and Marsh, 1976. Hym. Cat., part 13, p. 1277-1295 (cat. World spp.).

anatolicus Marsh. Que. s. to Fla., w. to Minn. and N. Mex. Host: *Agrilus bilineatus* (Weber), *Dendroctonus frontalis* Zimm., *Neoclytus acuminatus* (F.).

Doryctes anatolicus Marsh, 1969 (1968). Amer. Ent. Soc., Trans. 94: 384. ♀, ♂.

brachynervus Marsh. Ariz., Nev., Wash., Oreg., Calif. Host: *Chrysobothris caurina* Horn.

Doryctes brachynervus Marsh, 1969 (1968). Amer. Ent. Soc., Trans. 94: 386. ♀, ♂.

buoculus Marsh. D. C., N. C.

Doryctes buoculus Marsh, 1969 (1968). Amer. Ent. Soc., Trans. 94: 388. ♀.

californicus Marsh. Alta., Calif.

Doryctes californicus Marsh, 1969 (1968). Amer. Ent. Soc., Trans. 94: 388. ♀, ♂.

erythromelas (Brulle). No. Amer. Host: *Neoclytus acuminatus* (F.).

Syngaster erythromelas Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 458. ♂.

- Syngaster rufiventris* Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 458. ♀.
Bracon radiatus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 185. ♀.
Bracon disjunctus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 186. ♀.
Syngaster rugosus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 122. "♂" = ♀.
Doryctes apacheus Viereck, 1907. Amer. Ent. Soc., Trans. 33: 383. ♂.
Doryctes femurrubrum Viereck, 1907. Amer. Ent. Soc., Trans. 33: 384. ♀.
eucrinus Marsh. Calif.
Doryctes eucrinus Marsh, 1969 (1968). Amer. Ent. Soc., Trans. 94: 391. ♀, ♂.
exhalans (Say). Ind.
Bracon exhalans Say, 1828. Contrib. Maclur. Lyc. Phila. 1: 77. Holotype lost; possibly same species as *erythromelas* (Brulle).
fartus (Provancher). Canada, Alaska, northern U. S.
Syngaster fartus Provancher, 1880. Nat. Canad. 12: 163. ♀.
Syngaster macilentis Provancher, 1880. Nat. Canad. 12: 163. ♀, ♂.
Syngaster atripes Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 122. ♀.
Rhogas rugosulus Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 374. ♀.
Rhyssipolis? biformis Ashmead, 1893. Canad. Ent. 25: 68. ♀, ♂.
infuscus Marsh. Mass., Pa., Ark.
Doryctes infuscus Marsh, 1969 (1968). Amer. Ent. Soc., Trans. 94: 394. ♀.
macrocaudus Marsh. Mass. s. to N. C., w. to Mich. and Iowa.
Doryctes macrocaudus Marsh, 1969 (1968). Amer. Ent. Soc., Trans. 94: 394. ♀, ♂.
maculipennis Rohwer. Ariz., Calif. Host: *Agrilus angelicus* Horn, *Anthaxia* sp., *Chramesus* sp.
Doryctes maculipennis Rohwer, 1919. Ent. Soc. Wash., Proc. 21: 7. ♀, ♂.
pacificus (Provancher). Mont., B. C. s. to Calif. Host: *Dicerca* sp.
Phylax pacificus Provancher, 1885. Canad. Ent. 17: 117. ♀.
Phylax niger Provancher, 1885. Canad. Ent. 17: 117. ♂.
pyrrhus Marsh. Utah, Wash., Calif.
Doryctes pyrrhus Marsh, 1969 (1968). Amer. Ent. Soc., Trans. 94: 398. ♀, ♂.
rufipes (Provancher). Southern Canada, northern U. S. Host: *Agrilus anxius* Gory, *A. cephalicus* Lec., *Astylopsis macula* (Say), *Callidium violaceum* L., *Xylotrechus quadrimaculatus* (Hald.).
Phylax rufipes Provancher, 1880. Nat. Canad. 12: 175. ♀.
slossonae Marsh. Que., N. H., Man.
Doryctes slossonae Marsh, 1969 (1968). Amer. Ent. Soc., Trans. 94: 400. ♀, ♂.

Genus DORYCTINUS Roman

- Doryctinus* Roman, 1910. Ent. Tidskr. 31: 122.
 Type-species: *Exothecus rugulosus* Cresson. Orig. desig.
 Taxonomy: Marsh, 1968. Ent. Soc. Wash., Proc. 70: 112.
marshi Greenbaum. Fla.
Doryctinus marshi Greenbaum, 1975. Fla. Ent. 58: 213. ♀.
rugulosus (Cresson). Tex.
Exothecus rugulosus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 190. ♀.
Doryctes texanus Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 627. ♀.

Genus ECPHYLUS Foerster

- Ecpstylus* Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 237.
 Type-species: *Bracon sileseacus* Ratzeburg. Orig. desig.
Sactopus Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 146.
 Type-species: *Sactopus schwarzii* Ashmead. Orig. desig.
Paraecphylus Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 147.
 Type-species: *Paraecphylus websteri* Ashmead. Orig. desig.
Sycosoter Picard and Lichtenstein, 1917. Soc. Ent. France, Bul. 16: 285.

Type-species: *Sycosoter lavagnei* Picard and Lichtenstein. Orig. desig.

Revision: Telenga, 1941. Fauna U. S. S. R., v. 5, n. 3, pp. 49-54, 383-384 (some Eur. spp.).

—Marsh, 1965. Ent. Soc. Amer., Ann. 58: 678-690 (No. Amer. spp.). —Hedqvist, 1967. Ent. Tidskr. 88: 66-71 (some Eur. spp.).

Taxonomy: Muesebeck, 1935. Ent. Soc. Wash., Proc. 37: 21-22. —Shenefelt and Marsh, 1976. Hym. Cat., part 13, p. 1344-1352 (cat. World spp.).

Biology: Russo, 1938. Lab. Ent. Agr. Portici, Bol. 2: 287-307 (*Ecphyllus sileseacus* (Ratz.) in Italy). —Marsh, 1965. Ent. Soc. Amer., Ann. 58: 679-680.

arcuatus Muesebeck. Idaho, Oreg., Calif. Host: *Scolytus subscaber* Lec., *S. ventralis* Lec.

Ecphyllus arcuatus Muesebeck, 1935. Ent. Soc. Wash., Proc. 37: 23. ♀, ♂.

bicolor Rohwer. Wyo., B. C., Wash., Calif. Host: *Pityogenes knechteli* Swaine.

Ecphyllus bicolor Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 540. ♀.

Ecphyllus pityogeni Marsh, 1965. Ent. Soc. Amer., Ann. 58: 690. Nom. nud.

californicus Rohwer. Mont., Idaho, Wash., Oreg., Calif. Host: *Phloeosinus cupressi* Hopk., *P. punctatus* Lec., *P. sequoiae* Hopk., *P. setosus* Bruck, *P. swainae* Bruck, *P. vandykei* Swaine, *Pseudohylesinus nebulosus* (Lec.), *Scolytus* sp., *S. laricis* Blkm., *S. unispinosus* Lec.

Ecphyllus californicus Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 539. ♀.

chramesi Marsh. Tex., Ariz. Host: *Chramesus* sp. The original description states that this species was reared from *Chramesus robiniae* but this is apparently a manuscript species name.

Ecphyllus chramesi Marsh, 1965. Ent. Soc. Amer., Ann. 58: 689. ♀, ♂.

costaricensis Matthews. Md., D. C.; Costa Rica. Host: *Styphlosoma granulatum* Blandf. (in Costa Rica).

Ecphyllus costaricensis Matthews, 1969. Ga. Ent. Soc., Jour. 4:117. ♀, ♂.

flavus Marsh. Miss., La. Host: *Lyctus* sp., *Xylobiops basilaris* (Say).

Ecphyllus flavus Marsh, 1965. Ent. Soc. Amer., Ann. 58:687. ♀, ♂.

hicoloriae Rohwer. N. Y., Pa., N. C. Host: *Scolytus quadrispinosus* Say.

Ecphyllus hicoloriae Rohwer, 1919. Canad. Ent. 51:161. ♀, ♂.

hubbardi Rohwer. Ariz.

Ecphyllus hubbardi Rohwer, 1913. U. S. Natl. Mus., Proc. 45:538. ♀.

hypothenemi Ashmead. Mass., Ohio, W. Va., Tex., Colo., N. Mex., Ariz., Wash., Calif. Host:

Hypothenemus sp., *Pityophthorus* sp., *P. hopkinsi* (Blkm.).

Ecphyllus hypothenemi Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 215. ♀, ♂.

Paracephyllus websteri Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 147. ♀.

kansensis Marsh. Kans.

Ecphyllus kansensis Marsh, 1965. Ent. Soc. Amer., Ann. 58: 682. ♀.

leechi Marsh. Calif. Host: *Pseudopityophthorus pubipennis* (Lec.).

Ecphyllus leechi Marsh, 1965. Ent. Soc. Amer., Ann. 58: 681. ♀, ♂.

leptosulculus Marsh. Ohio, W. Va., N. C. Host: *Pityophthorus* sp., *P. liquidambarus* Blkm.,

Pseudopityophthorus minutissimus (Zimm.), *P. pruinosis* (Eichh.).

Ecphyllus leptosulculus Marsh, 1965. Ent. Soc. Amer., Ann. 58: 683. ♀, ♂.

lepturgi Rohwer. N. C., Kans., N. Mex., Nev. Host: *Pityophthorus* sp., *Urgleptes facetus* (Say).

Ecphyllus lepturgi Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 540. ♀.

lycti Rohwer. Fla., Tex., Calif. Host: *Leperisinus californicus* Swaine, *Lyctus* sp., *L. planicollis* Lec., *Synoxylon* sp.

Ecphyllus lycti Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 538. ♀.

nigriceps Ashmead. W. Va.

Ecphyllus nigriceps Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 216. ♀.

optilus Marsh. Fla. Host: *Pityophthorus* sp.

Ecphyllus optilus Marsh, 1965. Ent. Soc. Amer., Ann. 58: 683. ♀, ♂.

pacificus Marsh. S. Dak. s. to Colo., w. to Oreg. and Calif. Host: *Cryphalus pubescens* Hopk.,

Pityogenes knechteli Swaine, *Pityophthorus* sp., *P. carmeli* Swaine.

Ecphyllus pacificus Marsh, 1965. Ent. Soc. Amer., Ann. 58: 686. ♀, ♂.

- Biology: Deyrup, 1975. Conif. For. Biome, Ecosystem Anal. Stu., Univ. Wash., Bul. 6, p. 79-80.
- pallidus** Ashmead. D. C., W. Va., Va., N. C., S. C. Ecology: Associated with *Micracis swainei* Blkm. in *Salix nigra*.
Ecphyllus pallidus Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 215. ♀, ♂.
- rohweri** Muesebeck. N. Mex., Ariz., Calif.
Ecphyllus schwarzi Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 538. ♀. Preocc. by Ashmead, 1900.
Ecphyllus rohweri Muesebeck, 1935. Ent. Soc. Wash., Proc. 37: 23. N. name for *schwarzi* Rohwer.
- schwarzii** (Ashmead). N. Y. s. to N. C. Host: *Dendroctonus frontalis* Zimm., *Pityophthorus* sp.
Sactopus schwarzi Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 146. ♂.
Ecphyllus johnsoni Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 539. ♀.
- texanus** Brues. Tex.
Ecphyllus texanus Brues, 1907. Wis. Nat. Hist. Soc., Bul. 5: 111. ♀.
- unifasciatus** Marsh. Tex.
Ecphyllus unifasciatus Marsh, 1965. Ent. Soc. Amer., Ann. 58: 685. ♀.

Genus GLYPTOCOLASTES Ashmead

- Glyptocolastes* Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 142.
 Type-species: *Glyptocolastes texanus* Ashmead. Orig. desig.
- Glyptodoryctes* Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 144.
 Type-species: *Heterospilus caryae* Ashmead. Orig. desig.
- Revision: Marsh, 1968. Ent. Soc. Wash., Proc. 70: 107-110.
- caryae** (Ashmead). N. Y. s. to Fla., w. to Mich. and Tex. Host: *Scobicia bidentata* (Horn).
Heterospilus caryae Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 214. ♀, ♂.
Hormiopterus claripennis Brues, 1907. Wis. Nat. Hist. Soc., Bul. 5: 61. ♀.
- texanus** Ashmead. Tex., Ariz. Host: *Dendrobiella quadrispinosa* (Lec.).
Glyptocolastes texanus Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 142. ♀, ♂.

Genus HECABOLUS Curtis

- Hecabolus* Curtis, 1834. Brit. Ent., v. 11, p. 507.
 Type-species: *Hecabolus sulcatus* Curtis. Orig. desig.
- Anisopelma* Wesmael, 1838. Nouv. Mem. Acad. Sci. Bruxelles 11: 134.
 Type-species: *Anisopelma belgicum* Wesmael. Monotypic.
- Taxonomy: Shenefelt and Marsh, 1976. Hym. Cat., part 13, p. 1354-1357 (cat. World spp.).
- sulcatus** Curtis. Fla., Colo., Ariz., Calif.; Europe. Probably adventive. Host: *Acmaeodera* sp.
Hecabolus sulcatus Curtis, 1834. Brit. Ent., v. 11, p. 507. ♀.
Anisopelma belgicum Wesmael, 1838. Nouv. Mem. Acad. Sci. Bruxelles 11: 135. ♀.

Genus HETEROSPILUS Haliday

- Rogas* subg. *Heterospilus* Haliday, 1836. Ent. Mag. 4: 40, 46.
 Type-species: *Rogas (Heterospilus) quaeator* Haliday. Monotypic.
- Bracon* subg. *Synodus* Ratzeburg, 1848. Ichn. d. Forstins., v. 2, p. 31. Preocc. by Gronovius, 1763, and Latreille, 1828.
 Type-species: *Bracon incompletus* Ratzeburg. Monotypic.
- Caenophanes* Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 236. N. name for *Synodus* Ratzeburg.
- Telebolus* Marshall, 1888. In Andre, Spec. Hym. Eur. Alg., v. 4, p. 202.
 Type-species: *Telebolus corsicus* Marshall. Monotypic.
- Kareba** Cameron, 1904. Invert. Pac. 1: 50.
 Type-species: *Kareba flavipes* Cameron. Desig. by Viereck, 1914.
- Anacatostigma* Enderlein, 1920 (1918). Arch. f. Naturgesch. 84(A)(11): 131.
 Type-species: *Anacatostigma paradoxum* Enderlein. Orig. desig.

A predominately Western Hemisphere genus with a large number of species, most of which are undescribed. Most species, where records are available, are parasites of coleopterous larvae, but a few species attack lepidopterous larvae, and one Holarctic species is a parasite of sawfly larvae.

Revision: Fischer, 1960. *Polskie Pismo Ent.* 30: 33-64 (Eur. spp.).

Taxonomy: Marsh, 1969. *Ent. Soc. Wash., Proc.* 71: 210-214 (lectotype design. No. Amer. spp.).
—Marsh, 1973. *Wash. Acad. Sci., Jour.* 63: 70. —Shenefelt and Marsh, 1976. *Hym. Cat.*, part 13, p. 1298-1313 (cat. World spp.).

aciculatus (Provancher). Calif.

Macrocentrus aciculatus Provancher, 1888. *Addit. Corr. Faune Ent. Canada Hym.*, p. 380. ♀.

anobiidivorus Muesebeck. Fla. Host: *Falsogastrallus librinocens* (Fish.).

Heterospilus anobiidivorus Muesebeck, 1939. *Ent. Soc. Wash., Proc.* 41: 62. ♀.

anthaxiae (Ashmead). Pa. s. to Fla., w. to Wis. and Iowa. Host: *Agrilus* sp., *Anthaxia viridicornis* (Say).

Caenophanes anthaxiae Ashmead, 1893. *Canad. Ent.* 25: 77. ♀, ♂.

appalachicola (Viereck). Kans.

Diachasma appalachicola Viereck, 1905. *Kans. Acad. Sci., Trans.* 19: 272. ♀.

atratus (Ashmead). Colo., Calif.

Caenophanes atrata Ashmead, 1890. *Colo. Biol. Assoc., Bul.* 1: 16. ♀, ♂.

atriceps (Ashmead). Md., Va., S. C., Fla., Mo.

Caenophanes atriceps Ashmead, 1893. *Canad. Ent.* 25: 76. ♀.

beaticatus (Provancher). N. Y. s. to Va., w. to Ont. and Minn. Host: *Clytus ruricola* (Oliv.), *Xyletinus peltatus* (Harr.).

Syngaster beaticatus Provancher, 1880. *Nat. Canad.* 12: 162. ♀.

bruchi Viereck. Md. s. to Fla., w. to Iowa and Tex. Host: *Amblycerus robiniae* (F.), *Bruchus* sp., *Gibbobruchus mimus* (Say).

Heterospilus bruchi Viereck, 1910 (1909). *Ent. Soc. Wash., Proc.* 11: 210. ♀, ♂.

cephi Rohwer. N. Y., Pa., Ont.; Europe. Host: *Cephus pygmaeus* (L.).

Heterospilus cephi Rohwer, 1925. *Wash. Acad. Sci., Jour.* 15: 178. ♀, ♂.

Heterospilus basifurcatus Fischer, 1960. *Polskie Pismo Ent.* 30: 38. ♀.

Taxonomy: Marsh, 1973. *Wash. Acad. Sci., Jour.* 63: 70.

Biology: Hill and Smith, 1931. *Jour. Agr. Res.* 43: 597-609.

chittendenii (Ashmead). Va.

Caenophanes chittendenii Ashmead, 1893. *Canad. Ent.* 25: 77. ♀, ♂.

consimilis (Ashmead). U. S.

Caenophanes consimilis Ashmead, 1893. *Canad. Ent.* 25: 75. ♀.

etiellae Rohwer. Fla.; Puerto Rico. Host: *Etiella zinckenella* (Treit.), *Fundella pellucens* Zell.

Heterospilus etiellae Rohwer, 1925. *Wash. Acad. Sci., Jour.* 15: 179. ♀, ♂.

eurostae Viereck. Conn., Pa. Ecology: Reared from galls of *Eurosta solidaginis* (Fitch).

Heterospilus eurostae Viereck, 1917 (1916). *Conn. State Geol. and Nat. Hist. Survey, Bul.* 22: 238. ♀.

flavicollis (Ashmead). D. C., Va.

Caenophanes flavicollis Ashmead, 1893. *Canad. Ent.* 25: 75. ♀.

floridanus (Ashmead). Fla.

Caenophanes floridanus Ashmead, 1893. *Canad. Ent.* 25: 76. ♀.

hylotropidis (Ashmead). W. Va. Host: *Semanotus ligneus* (F.).

Caenophanes hylotropidis Ashmead, 1893. *Canad. Ent.* 25: 78. ♀, ♂.

koebelei (Ashmead). Calif. Host: *Prodoxus aenescens* Riley, *P. marginatus* Riley, *Tegeticula maculata* (Riley). All of these hosts are from the stems or pods of *Yucca*.

Caenophanes Koebelei Ashmead, 1893. *Canad. Ent.* 25: 77. ♀, ♂.

languriae (Ashmead). Que. s. to Fla., w. to Mich., Colo., and Tex. Host: *Languria erythrocephalus* Blatch.

Caenophanes languriae Ashmead, 1893. *Canad. Ent.* 25: 77. ♀, ♂.

- leptostyli** Rohwer. Maine, N. Y., Pa., Va., N. C. Host: *Amniscus collaris* Hald.
Heterospilus leptostyli Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 536. ♀, ♂.
- liopodis** (Brues). Mass., Md. Host: *Sternidius alpha* (Say).
Coeloides liopodis Brues, 1910. Wis. Nat. Hist. Soc., Bul. 8: 79. ♀.
- longicaudus** (Ashmead). Mass. s. to Fla., Ala., and Miss. Host: *Xyletinus peltatus* (Harr.).
Caenophanes longicaudus Ashmead, 1893. Canad. Ent. 25: 75. ♀.
- melanocephalus** Rohwer. Tex. Host: *Olycella junctolineella* (Hulst). *Pseudoschinia elautalis* (Grote).
Heterospilus melanocephalus Rohwer, 1925. Wash. Acad. Sci., Jour. 15: 181. ♀.
- melleus** (Ashmead). Md., Fla. Host: *Eteobalea sernotella* (Chamb.), *Gnorimoschema gallaeasteriella* (Kell.).
Caenophanes melleus Ashmead, 1893. Canad. Ent. 25: 77. ♀, ♂.
- mordellistena** Viereck. Ont., Ohio. Host: *Mordellistena andreae ustulata* Lec.
Heterospilus mordellistena Viereck, 1911. U. S. Natl. Mus., Proc. 39: 403. ♀.
- pityophthori** (Ashmead). Va., W. Va. Host: *Pityophthorus* sp.
Rhyssalus pityophthori Ashmead, 1893. Canad. Ent. 25: 69. ♀.
Caenophanes pityophthori Ashmead, 1893. Canad. Ent. 25: 78. ♂.
- prodoxi** (Riley). N. C., Ky., Mo., La., Kans., Tex., Ariz. Host: *Prodoxus quinquepunctellus* (Chamb.).
Erothecus prodoxi Riley, 1880. Amer. Ent. 3: 156. ♀, ♂.
- prosopidis** Viereck. La., Okla., Tex., Ariz., Wash., Calif.; Mexico. Host: *Acanthoscelides daleae* Johnson, *A. horni* (Pic), *Algarobius prosopis* (Lec.).
Heterospilus prosopidis Viereck, 1910. U. S. Natl. Mus., Proc. 38: 381. ♀, ♂.
- scolyticida** (Ashmead). N. Y. s. to N. C. Host: *Scolytus quadrispinosus* Say.
Lysitermis scolyticida Ashmead, 1893. Canad. Ent. 25: 74. ♀.
Heterospilus blackmanni Rohwer, 1919. Canad. Ent. 51: 161. ♀, ♂.
- Taxonomy: Marsh, 1973. Wash. Acad. Sci., Jour. 63: 71.
- selandriae** (Ashmead). U. S. Host: *Caliroa cerasi* (L.)(?).
Rhyssalus (?) *selandriae* Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 629. ♀.
- shoshonea** (Viereck). Wyo.
Doryctomorpha shoshonea Viereck, 1907. Amer. Ent. Soc., Trans. 33: 382. ♀.
- striatus** Muesebeck and Walkley. Md., Va., Fla., Iowa.
Caenophanes aciculatus Ashmead, 1893. Canad. Ent. 25: 76. ♀, ♂. Preocc. by Provancher, 1888.
Heterospilus striatus Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 180. N. name for *aciculatus* Ashmead.

Genus HISTEROMERUS Wesmael

- Histeromerus* Wesmael, 1838. Nouv. Mem. Acad. Sci. Bruxelles 11: 63.
 Type-species: *Histeromerus mystacinus* Wesmael. Monotypic.
- canadensis** Ashmead. Que. s. to N. C., w. to Ont. and Minn.; B. C. Host: *Anobium punctatus* DeG., *Hemicoelus carinatus* (Say), *Lyctus* sp.
Histeromerus canadensis Ashmead, 1891. Canad. Ent. 23: 7. ♀.

Genus LELUTHIA Cameron

- Leluthia* Cameron, 1887. Biol. Cent.-Amer., Hym., v. 1, p. 392.
 Type-species: *Leluthia mexicana* Cameron. Desig. by Viereck, 1914.
- Russellia** Muesebeck, 1950. Ent. Soc. Wash., Proc. 52: 78. Preocc. by Vargas, 1943.
 Type-species: *Heterospilus* ? *astigma* Ashmead. Orig. desig.
- Russellia** Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 178. N. name for *Russellia* Muesebeck.

Revision: Marsh, 1967. Ent. Soc. Wash., Proc. 69: 359-364 (No. Amer. spp.).

- astigma* (Ashmead). Que., Pa., Md., W. Va., Va., N. C., Ohio, Iowa, Okla., Tex., Wyo., Utah, Ariz., Calif.; Mexico. Host: *Agrilus* sp., *A. difficilis* Gory, *A. politus* (Say).
Heterospilus ? astigma Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 215. ♂.
floridensis Marsh. Fla. Host: *Cryptorhynchus fallax* Lec.
Leluthia floridensis Marsh, 1967. Ent. Soc. Wash., Proc. 69: 362. ♀, ♂.
mexicana Cameron. Okla., Tex., N. Mex., Ariz., Calif.; Mexico.
Leluthia mexicana Cameron, 1887. Biol. Cent.-Amer., Hym., v. 1, p. 392. ♀.
Russellia prosopidis Muesebeck, 1950. Ent. Soc. Wash., Proc. 52: 78. ♀, ♂.

Genus LIOBRACON Szepligeti

- Liobracon* Szepligeti, 1901. Termes. Fuzetek 24: 361.
 Type-species: *Liobracon singularis* Szepligeti. Monotypic.
Parabinarea Brues, 1912. Ent. Soc. Amer., Ann. 5: 210.
 Type-species: *Parabinarea manni* Brues. Monotypic.
Hyboderia Enderlein, 1920 (1918). Arch. f. Naturgesch. 84(A)(11): 134.
 Type-species: *Hyboderia collare* Enderlein. Orig. desig.
Triderodon Enderlein, 1920 (1918). Arch. f. Naturgesch. 84(A)(11): 136.
 Type-species: *Triderodon hoffmannsi* Enderlein. Orig. desig.
 Taxonomy: Marsh, 1970. Ent. Soc. Wash., Proc. 72: 313-317. —Shenefelt and Marsh, 1976. Hym. Cat., part 13, p. 1316-1318 (cat. World spp.).
aquiloni Marsh. Tex.; Mexico, Guatemala.
Liobracon aquilonius Marsh, 1970. Ent. Soc. Wash., Proc. 72: 314. ♀, ♂.

Genus MONOLEXIS Foerster

- Monolexis* Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 237.
 Type-species: *Monolexis fuscicornis* Foerster. Orig. desig.
 Taxonomy: Marsh, 1965. Ent. Soc. Amer., Ann. 58: 677-678. —Shenefelt and Marsh, 1976. Hym. Cat., part 13, p. 1358-1360 (cat. World spp.).
fuscicornis Foerster. Cosmopolitan. Host: *Lyctus brunneus* (Steph.), *L. linearis* (Goeze), *L. planicollis* Lec., *Trogoxylon parallelipedum* (Melsh.).
Monolexis fuscicornis Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 237.
Anisopelma lycti Cresson, 1880. Amer. Ent. 3: 24. ♀, ♂.
Anisopelma utilis Cresson, 1880. Amer. Ent. 3: 24. ♀, ♂.
Anisopelma minima Cresson, 1880. Amer. Ent. 3: 24. ♀.

Genus ODONTOBRACON Cameron

- Odontobracon* Cameron, 1887. Biol. Cent.-Amer., Hym., v. 1, p. 384.
 Type-species: *Odontobracon nigriceps* Cameron. Desig. by Viereck, 1914.
 Revision: Marsh, 1970. Pan-Pacific Ent. 46: 277-282 (No. Amer. spp.).
 Taxonomy: Shenefelt and Marsh, 1976. Hym. Cat., part 13, p. 1365-1366 (cat. World spp.).
californicus Rohwer. Calif.
Odontobracon californicus Rohwer, 1917. U. S. Natl. Mus., Proc. 53: 169. ♀, ♂.
cellulus Marsh. Tex., N. Mex., Ariz., Calif.; Mexico.
Odontobracon cellulus Marsh, 1970. Pan-Pacific Ent. 46: 279. ♀, ♂.
grandis Ashmead. Ariz.; Baja Calif.
Odontobracon grandis Ashmead, 1894. Calif. Acad. Sci., Proc. 4: 122. ♀.
montanus Cameron. N. C. s. to Fla., w. to Tex.; Central America.
Odontobracon montanus Cameron, 1887. Biol. Cent.-Amer., Hym., v. 1, p. 384. ♀.
Odontobracon crassiventris Cameron, 1887. Biol. Cent.-Amer., Hym., v. 1, p. 384. ♀.
nigriceps Cameron. Mass. s. to Fla., w. to Wis., Utah, and Ariz.; Mexico, Guatemala. Host: *Elaphidionoides villosus* (F.), *Oncideres cingulata* (Say), *O. rhodosticta* (Bates).
Odontobracon nigriceps Cameron, 1887. Biol. Cent.-Amer., Hym., v. 1, p. 385. ♀.
Odontobracon elaphidiovorus Rohwer, 1917. U. S. Natl. Mus., Proc. 53: 168. ♀, ♂.

oemeovorus Rohwer. Pa., Md., Fla., Ala., Mich., Ill., Tex. Host: *Oeme rigida* (Say).
Odontobracon oemeovorus Rohwer, 1917. U. S. Natl. Mus., Proc. 53: 167. ♀.

Genus ONTSIRA Cameron

Ontsira Cameron, 1900. Manchester Lit. and Phil. Soc., Mem. and Proc. 44: 89.

Type-species: *Ontsira reticulata* Cameron. Monotypic.

Doryctes subg. *Doryctodes* Hellen, 1927. Acta Soc. Fauna Flora Fenn. 56: 40.

Type-species: *Rogas imperator* Haliday. Orig. desig.

Revision: Marsh, 1966. Amer. Ent. Soc., Trans. 92: 503-517 (No. Amer. spp. as genus *Doryctodes*).

Taxonomy: Fahringer, 1930. Opusc. Bracon., v. 3, p. 144. —Telenga, 1941. Fauna U. S. S. R., v. 5, n. 3, p. 85-92, 389-392. —Marsh, 1973. Wash. Acad. Sci., Jour. 63: 71. —Shenefelt and Marsh, 1976. Hym. Cat., part 13, p. 1322-1327 (cat. World spp.).

antica (Wollaston). N. H. s. to W. Va.; Europe.

Clinocentrus anticus Wollaston, 1858. Ann. and Mag. Nat. Hist. (3) 1: 24. ♀.

Doryctes gallicus Reinhard, 1865. Berlin. Ent. Ztschr. 9: 248. ♀, ♂.

Doryctes incertus Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 627. ♀.

carinata (Ashmead). Mass., D. C., Va., Iowa, Mo., Ark., S. Dak., Kans.

Rhyssalus carinatus Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 630. ♂.

imperator (Haliday). No. Amer.; Europe.

Rogas imperator Haliday, 1836. Ent. Mag. 4: 46. ♀.

Ischiogonus zonatus Wesmael, 1838. Nouv. Mem. Acad. Sci. Bruxelles 11: 127. ♀.

Bracon praecisus Ratzeburg, 1852. Ichn. d. Forstins., v. 3, p. 36. ♀.

Syngaster cingulatus Provancher, 1880. Nat. Canad. 12: 162. ♀.

krombeini (Marsh). Md., Mich., Ohio, Ky., Mo., Ark.

Doryctodes krombeini Marsh, 1966. Amer. Ent. Soc., Trans. 92: 511. ♀.

mellipes (Ashmead). Que. s. to Fla., w. to Ont. and Mo. Host: *Callidium* sp.

Doryctes mellipes Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 627. ♀.

occipitalis (Marsh). Calif.

Doryctodes occipitalis Marsh, 1966. Amer. Ent. Soc., Trans. 92: 512. ♀, ♂.

tuberculata (Marsh). Md., D. C., Va., Ga., Ky., Tenn. Host: *Nyctobates* sp.

Doryctodes tuberculatus Marsh, 1966. Amer. Ent. Soc., Trans. 92: 514. ♀, ♂.

wasbaueri (Marsh). Wash., Calif.

Doryctodes wasbaueri Marsh, 1966. Amer. Ent. Soc., Trans. 92: 515. ♀, ♂.

Genus PAMBOLIDEA Ashmead

Pambolidea Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 147.

Type-species: *Pambolidea yuma* Ashmead. Orig. desig.

Revision: Marsh, 1965. Ent. Soc. Amer., Ann. 58: 674-675.

barberi Marsh. Tex.; Mexico. Host: *Xylobiops texanus* (Horn).

Pambolidea barberi Marsh, 1965. Ent. Soc. Amer., Ann. 58: 674. ♀, ♂.

yuma Ashmead. Tex., Ariz. Host: *Micracis* sp.

Pambolidea yuma Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 147. ♂.

Genus PEDINOTUS Szepliget

Pedinotus Szepliget, 1902. Termes. Fuzetek 25: 56.

Type-species: *Pedinotus brasiliensis* Szepliget. Monotypic.

Goniognmus Enderlein, 1920 (1918). Arch. f. Naturgesch. 84(A)(11): 139.

Type-species: *Goniognmus ferrugineus* Enderlein. Orig. desig.

Taxonomy: Marsh, 1970. Ent. Soc. Wash., Proc. 72: 315-317.

ferrugineus (Enderlein). Tex.; Mexico.

Goniognmus ferrugineus Enderlein, 1920 (1918). Arch. f. Naturgesch. 84(A)(11): 139. ♀.

Genus *PIOSCELUS* Muesebeck and Walkley

Pioscelus Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 180.

Type-species: *Hedysomus wichitus* Viereck. Orig. desig.

borealis (Ashmead). Ont.

Caenophanes borealis Ashmead, 1891. Canad. Ent. 23: 2. ♀.

Taxonomy: Marsh, 1973. Wash. Acad. Sci., Jour. 63: 71.

wichitus (Viereck). Md., Fla., Ohio, Tenn., Miss., Wis., Ill., Iowa, Kans. Ecology: "reared from eggs of cicada." This record needs to be confirmed.

Hedysomus wichitus Viereck, 1907. Amer. Ent. Soc., Trans. 33: 404. ♂.

Heterospilus beameri Rohwer, 1925. Wash. Acad. Sci., Jour. 15: 177. ♀, ♂.

Genus *PTESIMOGASTER* Marsh

Ptesimogaster Marsh, 1965. Ent. Soc. Amer., Ann. 58: 691.

Type-species: *Ptesimogaster parkeri* Marsh. Orig. desig.

Taxonomy: Matthews and Marsh, 1969. Ent. Soc. Wash., Proc. 71: 94-98.

gundlachi (Cresson). Fla.; West Indies.

Stenophasmus gundlachi Cresson, 1865. Ent. Soc. Phila., Proc. 4: 85. ♀.

Stenophasmus cubensis Cresson, 1865. Ent. Soc. Phila., Proc. 4: 86. ♀.

Stenophasmus pusillus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 87. ♂.

parkeri Marsh. Tex., Ariz.; Mexico.

Ptesimogaster parkeri Marsh, 1965. Ent. Soc. Amer., Ann. 58: 693. ♀, ♂.

Genus *RHACONOTUS* Ruthe

Rhaconotus Ruthe, 1854. Stettin. Ent. Ztg. 15: 349.

Type-species: *Rhaconotus aciculatus* Ruthe. Monotypic.

Hedysomus Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 238.

Type-species: *Hedysomus elegans* Foerster. Orig. desig.

Hormiopterus Giraud, 1869. Soc. Ent. France, Ann. (4) 9: 478.

Type-species: *Hormiopterus Ollivieri* Giraud. Monotypic.

Rhadinogaster Szepligeti, 1908. Leyden Mus., Notes 29: 223.

Type-species: *Rhadinogaster testacea* Szepligeti. Desig. by Viereck, 1914.

Euryphrymnus Cameron, 1910. Wien. Ent. Ztg. 29: 100.

Type-species: *Euryphrymnus testaceiceps* Cameron. Monotypic.

Revision: Nixon, 1941. Ann. and Mag. Nat. Hist. (11) 7: 473-503 (Indian and Afr. spp., redescrip. of type-species). —Telenga, 1941. Fauna U. S. S. R., v. 5, n. 3, p. 68-70, 387 (some Eur. spp.). —Granger, 1949. Inst. Sci. Madagascar, Mem. (A)2: 126-137 (Madag. spp.).

—Marsh, 1976. Ent. Soc. Wash., Proc. 78: 389-403 (No. Amer. spp.).

Taxonomy: Marsh, 1973. Wash. Acad. Sci., Jour. 63: 72. —Shenefelt and Marsh, 1976. Hym. Cat., part 13, p. 1334-1343 (cat. World spp.).

atratus Marsh. N. H., Mass., N. Y., Md., Mich., Minn.

Rhaconotus atratus Marsh, 1976. Ent. Soc. Wash., Proc. 78: 392. ♀, ♂.

badius Marsh. Ind., Nebr., Alta., Wash.

Rhaconotus badius Marsh, 1976. Ent. Soc. Wash., Proc. 78: 393. ♀.

barri Marsh. Idaho. Ecology: Reared from *Eurotia lantana* Moq. infested with *Acmaeodera immaculata* Horn.

Rhaconotus barri Marsh, 1976. Ent. Soc. Wash., Proc. 78: 394. ♀, ♂.

brevicaudus Marsh. Mass., Ont.

Rhaconotus brevicaudus Marsh, 1976. Ent. Soc. Wash., Proc. 78: 395. ♀.

canadensis Marsh. Sask.

Rhaconotus canadensis Marsh, 1976. Ent. Soc. Wash., Proc. 78: 396. ♀, ♂.

- cressoni** Muesebeck and Walkley. Md. s. to Fla., w. to Kans., Nev., and Calif.; Mex. Host: *Cylindrocapturus adpersus* (Lec.), *Lixus scrobicollis* Boh.
Hormius? aciculatus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 190. ♀. Preocc. by Ruthe, 1854.
Rhaconotus cressoni Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 181. N. name for *aciculatus* Cresson.
fasciatus (Ashmead). Md. s. to Fla., w. to Iowa and Tex. Host: *Conotrachelus* sp., *Lixus concavus* Say.
Hormiopterus fasciatus Ashmead, 1893. Amer. Ent. Soc., Trans. 20: 43. ♀.
graciliformus (Viereck). Md. s. to Fla., w. to Iowa, Colo., and Ariz.; N. Dak., Alta.
Hormiopterus graciliformus Viereck, 1911. U. S. Natl. Mus., Proc. 40: 183. ♀, ♂.
phalarus Marsh. Tex.
Rhaconotus phalarus Marsh, 1976. Ent. Soc. Wash., Proc. 78: 401. ♀.

Genus RHOPTRICENTRUS Marshall

- Rhoptricentrus* Marshall, 1897. In Andre, Spec. Hym. Eur. Alg., v. 5 bis, p. 99.
 Type-species: *Rhoptricentrus piceus* Marshall. Monotypic.
piceus Marshall. Pa. s. to Fla.; Calif.; Europe. Host: *Hylotrupes bajulus* (L.).
Rhoptricentrus piceus Marshall, 1897. In Andre, Spec. Hym. Eur. Alg., v. 5 bis, p. 100. ♀.

Genus SPATHIUS Nees

- Spathius* Nees, 1818. Nova Acta Acad. Caes. Leop. Car. 9: 301.
 Type-species: *Cryptus clavatus* Panzer. Monotypic.
Stenophasmus Smith, 1859. Linn. Soc. London, Jour., Zool. 3: 169.
 Type-species: *Stenophasmus ruficeps* Smith. Monotypic.
Euspathius Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 236. Emend.
Rhacospathius Cameron, 1905. Spolia Zeylanica 3: 86.
 Type-species: *Rhacospathius striolatus* Cameron. Monotypic.
 Revision: Nixon, 1943. Roy. Ent. Soc. London, Trans. 93: 173-456 (Old World spp.).
 —Matthews, 1970. Amer. Ent. Inst., Contr. 4(5): 1-86 (No. Amer. spp.).
 Taxonomy: Shenefelt and Marsh, 1976. Hym. Cat., part 13, p. 1386-1424 (cat. World spp.).
aphenges Matthews. Alta., Idaho, B. C., Wash., Oreg., Calif. Host: *Conophthorus coniperda* (Schwarz), *Ips latidens* (Lec.), *Phloeotribus lecontei* Schedl, *Scolytus abietis* Blkm.
Spathius aphenges Matthews, 1970. Amer. Ent. Inst., Contr. 4(5): 51. ♀, ♂.
benefactor Matthews. Que. s. to N. C., w. to N. Dak. and Kans. Host: *Hylurgopinus rufipes* (Eichh.), *Leperisinus aculeatus* (Say), *Magdalis armicollis* (Say), *M. barbata* (Say), *M. inconspicua* Horn, *Saperda tridentata* Oliv., *Scolytus multistriatus* (Marshall), *S. rugulosus* Ratz. This species has been studied extensively under the name *canadensis* Ashmead. According to Matthews (1970), all references to *Spathius* reared from elm refer to *benefactor*, not to *canadensis*.
Spathius benefactor Matthews, 1970. Amer. Ent. Inst., Contr. 4(5): 61. ♀, ♂.
 Biology: Kaston, 1937. Conn. Agr. Expt. Sta., Bul. 396, p. 351-353. —Kaston, 1939. Conn. Agr. Expt. Sta., Bul. 420, p. 33-35. —Robert, 1951. Assoc. Canad.-Fr. Adv. Sci., Ann. 17: 139-140. —Robert, 1961 (1960). Ent. Soc. Que., Ann. 6: 122-143. All references are to *canadensis* Ashmead.
brachyurus Ashmead. Que. s. to N. C., w. to Wis. and Tenn. Host: *Dryocoetes autographus* (Ratz.), *Pissodes approximatus* Hopk., *P. strobi* (Peck).
Rhopalophorus fasciatus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 129. ♀. Preocc. by Walker, 1874.
Spathius abdominalis Riley, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 2: 350. Nom. nud.
Spathius brevicaudus Ashmead, 1892. In Hopkins, U. S. Dept. Agr., Insect Life 4: 258. Nom. nud.
Spathius brachyurus Ashmead, 1893. Canad. Ent. 25: 73. ♀.

- Spathius dignus* Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 169. N. name for *fasciatus* Provancher.
- brevipalpus** Matthews. N. C., S. C., Tex.
Spathius brevipalpus Matthews, 1970. Amer. Ent. Inst., Contr. 4 (5): 29. ♀.
- brunneus** Ashmead. Md., W. Va., Fla. Host: *Agrilus fallax* Say, *Scolytus muticus* Say.
Spathius brunneus Ashmead, 1893. Canad. Ent. 25: 72. ♀.
- calligaster** Matthews. Que. s. to S. C., w. to Ill. Host: *Melasis pectinicornis* Melsh.
Spathius calligaster Matthews, 1970. Amer. Ent. Inst., Contr. 4(5): 35. ♀, ♂.
- canadensis** Ashmead. Canada and northern U. S. s. to N. C., S. Dak., and Wash. Host: *Cryphalus* sp., *Dryocoetes autographus* (Ratz.), *Ips pini* (Say), *Orthotomicus caelatus* (Eichh.), *Pityophthorus balsameus* Blkm., *Polygraphus rufipennis* (Kirby), *Scolytus piceae* (Swaine). Host records for *canadensis* reared from elm apparently all refer to *benefactor* Matthews.
Spathius canadensis Ashmead, 1891. Canad. Ent. 23: 2. ♀.
Spathius clavipennis (!) Ashmead, 1892. In Hopkins, U. S. Dept. Agr., Insect Life 4: 257. Nom. nud.
- Spathius claripennis* Ashmead, 1893. Canad. Ent. 25: 72. ♂.
Spathius tomicci Ashmead, 1893. Canad. Ent. 25: 71. ♀, ♂.
- comes** Matthews. N. S. and Que. s. to Md., w. to Wis. Host: *Chrysobothris pusilla* Cast., *Melanophila fulvoguttata* (Harr.).
Spathius comes Matthews, 1970. Amer. Ent. Inst., Contr. 4(5): 59. ♀, ♂.
- elegans** Matthews. Que. s. to Fla., w. to Ont. and Ala.; Nebr., Kans., Wash. Ecology: Reared from powderpost wood infested with *Hadrobregmus* sp.
Spathius elegans Matthews, 1970. Amer. Ent. Inst., Contr. 4(5): 39. ♀, ♂.
- evansi** Matthews. Que. s. to Fla., w. to Wyo. and N. Mex.
Spathius evansi Matthews, 1970. Amer. Ent. Inst., Contr. 4(5): 42. ♀, ♂.
- exarator** (Linnaeus). Mass., Conn.; Europe.
Ichneumon exarator Linnaeus, 1758. Syst. Nat., 10th ed., v. 1, p. 564.
- floridanus** Ashmead. Que. s. to Fla., w. to Ont., Kans., and Tex. Host: *Chrysobothris* sp., *C. femorata* (Oliv.), *Magdalis olya* (Herbst), *Xylotrechus colonus* (F.).
Spathius floridanus Ashmead, 1893. Canad. Ent. 25: 71. ♀.
- honestor** (Say). Ind.
Bracon honestor Say, 1828. Contrib. Maclur. Lyc. Phila. 1: 78. Holotype lost. Original description indicates that this species is probably a *Spathius* but there are no further statements that would help place the species.
- impus** Matthews. Que. s. to Fla., w. to Mich. and La. Host: *Phloeosinus* sp., *P. canadensis* Swaine, *P. dentatus* (Say).
Spathius impus Matthews, 1970. Amer. Ent. Inst., Contr. 4(5): 56. ♀, ♂.
- laflammei** Provancher. Que. s. to N. C., w. to Wis. and Kans. Host: *Magdalis olya* (Herbst).
Spathius Laflammei Provancher, 1880. Nat. Canad. 12: 164. ♀.
- longipetiolatus** Ashmead. Fla.
Spathius longipetiolatus Ashmead, 1893. Canad. Ent. 25: 70. ♂.
- marshi** Matthews. Que., N. Y., Pa., Md., Va., Mich., Tenn., Ill., Iowa, Kans.
Spathius marshi Matthews, 1970. Amer. Ent. Inst., Contr. 4(5): 30. ♀, ♂.
- pallidus** Ashmead. Mass. s. to Ga., w. to Tex. Host: *Dendroctonus frontalis* Zimm., *Ips avulsus* (Eichh.), *I. grandicollis* (Eichh.), *Pissodes approximatus* Hopk., *P. nemorensis* Germ.
Spathius pallidus Ashmead, 1893. Canad. Ent. 25: 74. ♀.
- parvulus** Matthews. S. Dak., Colo., N. Mex. Host: *Ips* sp.
Spathius parvulus Matthews, 1970. Amer. Ent. Inst., Contr. 4(5): 55. ♀, ♂.
- sequoiae** Ashmead. Alta. s. to N. Mex., w. to Alaska and Calif. Host: *Alniphagus aspericollis* Lec., *Cryphalus pubescens* Hopk., *Dendroctonus obesus* (Mann.), *D. pseudotsugae* Hopk., *Lechriops californicus* (Lec.), *Phloeosinus punctatus* Lec., *P. sequoiae* Hopk., *Pissodes* sp., *Pseudohylesinus nebulosus* (Lec.), *P. sericeus* (Mann.), *Scolytus* sp., *S. laricis* Blkm., *S. tsugae* Swaine, *S. unispinosus* Lec., *S. ventralis* Lec.
Spathius sequoiae Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 625. ♀.
Spathius californicus Ashmead, 1893. Canad. Ent. 25: 70. ♂.

Spathius brunneri Viereck, 1912. U. S. Natl. Mus., Proc. 42: 627. ♀.

Biology: Deyrup, 1975. Conf. For. Biome, Ecosystem Anal. Stu., Univ. Wash., Bul. 6, p. 76-77.

simillimus Ashmead. N. B. s. to Va., w. to Wis. Host: *Agrilus anxius* Gory, *A. bilineatus* (Weber), *Phymatodes aereum* (Newman).

Spathius simillimus Ashmead, 1893. Canad. Ent. 25: 73. ♀, ♂.

stigmatus Matthews. Que. s. to Va., w. to Ont. and Ill.; Tex. Host: *Magdalis olya* (Herbst), *Xyloterinus politus* (Say).

Spathius stigmatus Matthews, 1970. Amer. Ent. Inst., Contr. 4(5): 32. ♀, ♂.

trifasciatus Riley. N. Y. s. to N. C.; Miss., Mo., Kans., Tex. Host: *Scolytus quadrispinosus* Say.

Spathius trifasciatus Riley, 1873. Ins. Mo. Ann. Rpt. 5: 106. ♀, ♂.

Spathius unifasciatus Ashmead, 1893. Canad. Ent. 25: 72. ♀.

Genus STENOCORSE Marsh

Stenocorse Marsh, 1968. Ent. Soc. Wash., Proc. 70: 110.

Type-species: *Glyptocolastes bruchivorus* Crawford. Orig. desig.

Taxonomy: Marsh, 1968. Ent. Soc. Wash., Proc. 70: 110-112.

bruchivora (Crawford). Tex., Ariz.; Mexico, Canal Zone, Peru, Hawaii. Host: *Acanthoscelides quadridentatus* (Schaeffer), *Algarobius prosopis* (Lec.), *Megacerus* sp., *Minosestes sallaei* (Sharp).

Glyptocolastes bruchivorus Crawford, 1909. Ent. Soc. Wash., Proc. 11: 203. ♀, ♂.

SUBFAMILY BRACONINAE

Most species of this large subfamily are external parasites of lepidopterous and coleopterous larvae, but a few attack dipterous and sawfly larvae. The group is very much in need of study, particularly the genera from a world-wide viewpoint.

Genus ATANYCOLIMORPHA Viereck

Atanycolimorpha Viereck, 1913. U. S. Natl. Mus., Proc. 44: 557.

Type-species: *Atanycolimorpha winnemanuae* Viereck. Orig. desig.

alaskensis (Ashmead). Alaska.

Bracon alaskensis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 615. ♀.

croceiventris (Cresson). Colo.

Bracon croceiventris Cresson, 1865. Ent. Soc. Phila., Proc. 4: 301. ♂.

dissitus (Cresson). Ga., Ark., S. Dak., Tex., Wyo., Colo., Utah, Oreg.

Bracon dissitus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 300. ♀.

Bracon orbitalis Cresson, 1872. Amer. Ent. Soc., Trans. 4: 184. ♀, ♂.

montanensis (Ashmead). Mont.

Bracon montanensis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 615. ♀.

provancheri (Dalla Torre). Que., Conn., N. Y., N. J., Md., La., Ark.

Bracon inquisitor Provancher, 1880. Nat. Canad. 12: 138. ♀. Preocc. by Erichson, 1848.

Bracon provancheri Dalla Torre, 1898. Cat. Hym., v. 4, p. 285. New name for *inquisitor* Provancher.

Atanycolimorpha winnemanuae Viereck, 1913. U. S. Natl. Mus., Proc. 44: 557. ♀.

Genus ATANYCOLUS Foerster

Atanycolus Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 238.

Type-species: *Ichneumon denigrator* Linnaeus. Orig. desig.

Coelobracon Dalla Torre, 1898. Cat. Hym., v. 4, p. 295.

Type-species: *Ichneumon denigrator* Linnaeus. Desig. by Muesebeck and Walkley, 1951.

Melanobracon Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 138.

Type-species: *Bracon simplex* Cresson. Orig. desig.

Atanycolidea Viereck, 1912. U. S. Natl. Mus., Proc. 42: 617.

Type-species: *Bracon rugosiventris* Ashmead. Orig. desig.

Species in this genus are external parasites of coleopterous larvae, particularly Cerambycidae and Buprestidae.

- Revision: Shenefelt, 1943. Wash. State Col., Res. Studies 11: 51-163 (No. Amer. spp.).
- anocomidis* Cushman. Que. s. to Pa. and Tex., w. to B. C. and Calif. Host: *Acanthocinus* sp., *Buprestis maculativentris* Say, *Melanophila drummondi* (Kby.), *Semanotus ligneus* (F.).
- Atanycolus anocomidis* Cushman, 1931. U. S. Natl. Mus., Proc. 79 (14): 14. ♀, ♂.
- arcasuturalis* Shenefelt. N. H.
- Atanycolus arcasuturalis* Shenefelt, 1943. Wash. State Col., Res. Studies 11: 121. ♀.
- calophrys* Shenefelt. Man., Utah.
- Atanycolus calophrys* Shenefelt, 1943. Wash. State Col., Res. Studies 11: 95. ♀, ♂.
- charus* (Riley). Que. and N. B. s. to Ga., w. to Alta. and Tex. Host: *Agrilus anxius* Gory, *Chrysobothris femorata* (Oliv.).
- Bracon charus* Riley, 1875. Ins. Mo. Ann. Rpt. 7: 75. ♀.
- comosifrons* Shenefelt. Mass. s. to Fla., w. to Colo. and Tex. Host: *Dendroctonus frontalis* Zimm., *Graphisurus* sp., *Rhagium inquisitor* (L.).
- Atanycolus comosifrons* Shenefelt, 1943. Wash. State Col., Res. Studies 11: 111. ♀, ♂.
- crassicuris* Shenefelt. Mass., Fla., Minn., Iowa, Kans., Tex., Ariz.
- Atanycolus crassicuris* Shenefelt, 1943. Wash. State Col., Res. Studies 11: 124. ♀.
- cryptaspis* Shenefelt. Conn., N. Y., N. J., S. C.
- Atanycolus cryptaspis* Shenefelt, 1943. Wash. State Col., Res. Studies 11: 103. ♀, ♂.
- dichrous* (Brulle). "No. Amer."
- Bracon dichrous* Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 398. ♀.
- disputabilis* (Cresson). Colo.
- Bracon disputabilis* Cresson, 1865. Ent. Soc. Phila., Proc. 4: 300. ♀.
- femoratae* Shenefelt. Ariz. Host: *Chrysobothris femorata* (Oliv.).
- Atanycolus femoratae* Shenefelt, 1943. Wash. State Col., Res. Studies 11: 139. ♀, ♂.
- fuscorbitalis* Shenefelt. Maine, N. Y.
- Atanycolus fuscorbitalis* Shenefelt, 1943. Wash. State Col., Res. Studies 11: 87. ♀, ♂.
- hicoriae* Shenefelt. N. Y., Mich., N. Dak. Host: *Agrilus champlaini* Frost.
- Atanycolus hicoriae* Shenefelt, 1943. Wash. State Col., Res. Studies 11: 129. ♀, ♂.
- impressifrons* Shenefelt. N. Y., Pa., Md., W. Va., N. C., Mich., La., Kans., Tex., N. Mex., Ariz., Calif. Host: *Megacyllene* sp.
- Atanycolus impressifrons* Shenefelt, 1943. Wash. State Col., Res. Studies 11: 101. ♀, ♂.
- latabdominalis* Shenefelt. Ill.
- Atanycolus latabdominalis* Shenefelt, 1943. Wash. State Col., Res. Studies 11: 119. ♀.
- lineola* (Brulle). "Carolina."
- Bracon lineola* Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 397. ♀.
- lissogastrus* Shenefelt. N. H., N. Y., Pa., Ont.
- Atanycolus lissogastrus* Shenefelt, 1943. Wash. State Col., Res. Studies 11: 92. ♀.
- longicauda* Shenefelt. Que., N. Y., N. J., Mich., Wis., Minn.
- Atanycolus longicauda* Shenefelt, 1943. Wash. State Col., Res. Studies 11: 85. ♀, ♂.
- longifemoralis* Shenefelt. Mont., Idaho, Nev., B. C., Wash., Oreg., Calif. Host: *Hylotrupes* sp., *Melanophila drummondi* (Kby.), *M. gentilis* Lec.
- Atanycolus longifemoralis* Shenefelt, 1943. Wash. State Col., Res. Studies 11: 76. ♀, ♂.
- malii* Shenefelt. Colo., Oreg., Calif. Host: *Chrysobothris mali* Horn.
- Atanycolus malii* Shenefelt, 1943. Wash. State Col., Res. Studies 11: 136. ♀, ♂.
- megophthalmus* Shenefelt. Idaho.
- Atanycolus megophthalmus* Shenefelt, 1943. Wash. State Col., Res. Studies 11: 80. ♀, ♂.
- melanophili* Shenefelt. Wis. Host: *Melanophila fulvoguttata* (Harr.).
- Atanycolus melanophili* Shenefelt, 1943. Wash. State Col., Res. Studies 11: 81. ♀, ♂.
- microcellus* Shenefelt. Ont.
- Atanycolus microcellus* Shenefelt, 1943. Wash. State Col., Res. Studies 11: 89. ♀, ♂.

microstigmatus Shenefelt. Wis.

Atanycolus microstigmatus Shenefelt, 1943. Wash. State Col., Res. Studies 11: 93. ♀.

montivagus (Cresson). Nebr., Colo., N. Mex.

Bracon montivagus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 229. ♀, ♂.

nigropyga Shenefelt. N. Y., Va., Minn., Nebr.

Atanycolus nigropyga Shenefelt, 1943. Wash. State Col., Res. Studies 11: 90. ♀.

niteofrons Shenefelt. Minn.

Atanycolus niteofrons Shenefelt, 1943. Wash. State Col., Res. Studies 11: 84. ♀, ♂.

obliquus (Provancher). Canada.

Bracon obliquus Provancher, 1880. Nat. Canad. 12: 141. ♀.

octocolae Shenefelt. Ariz., Calif. Host: *Chrysobothris octocola* Lec.

Atanycolus octocolae Shenefelt, 1943. Wash. State Col., Res. Studies 11: 127. ♀, ♂.

parvacavus Shenefelt. Oreg.

Atanycolus parvacavus Shenefelt, 1943. Wash. State Col., Res. Studies 11: 109. ♀.

phaeostethus Shenefelt. Va., Tex.

Atanycolus phaeostethus Shenefelt, 1943. Wash. State Col., Res. Studies 11: 83. ♂.

pilosiventris Shenefelt. Que., R. I., N. Y., N. C., Ga., Fla., Man.

Atanycolus pilosiventris Shenefelt, 1943. Wash. State Col., Res. Studies 11: 131. ♀, ♂.

rugosiventris (Ashmead). Mass. s. to Fla., w. to Minn. and Ariz. Host: *Chrysobothris femorata* (Oliv.).

Bracon rugosiventris Ashmead, 1889 (1888). U.S. Natl. Mus., Proc. 11: 131. ♀, ♂.

Atanycolidea apicalis Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 533. ♂, "♀" = ♂.

simplex (Cresson). No. Amer. Host: *Agrilus bilineatus* (Weber), *Chrysobothris* sp.,

Phymatodes aereus (Newm.), *Rhagium inquisitor* (L.), *Saperda discoidea* F., *S.*

tridentata Oliv., *Xylotrechus* sp., *X. nauticus* (Mann.).

Bracon simplex Cresson, 1872. Amer. Ent. Soc., Trans. 4: 184. ♀.

tranquebaricae Shenefelt. Fla.; Bahamas. Host: *Chrysobothris tranquebarica* (Gmel.).

Atanycolus tranquebaricae Shenefelt, 1943. Wash. State Col., Res. Studies 11: 134. ♀, ♂.

triangulifera (Viereck). Ariz.

Iphiaulax triangulifera Viereck, 1907. Amer. Ent. Soc., Trans. 33: 384. ♀.

ulmicola (Viereck). Que., s. to Fla., w. to N. Dak. and Ariz. Host: *Saperda discoidea* F., *S.* *tridentata* Oliv.

Melanobracon ulmicola Viereck, 1906. Amer. Ent. Soc., Trans. 32: 176. ♀, ♂.

Biology: Kaston, 1937. Conn. (State) Agr. Expt. Sta. Bul. 396, p. 355-358.

Genus *BRACON* Fabricius

Bracon Fabricius 1804. Systema Piezatorum, p. 102.

Type-species: *Ichneumon minutator* Fabricius. Desig. by Internatl. Comn. Zool.

Nomencl., Opinion 162, 1945.

Bracon Wesmael, 1838. Nouv. Mem. Acad. Sci. Bruxelles 11: 7. Emend.

Microbracon Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 15.

Type-species: *Microbracon sulcifrons* Ashmead. Monotypic.

Habrobracon Johnson, 1895. Ent. News 6: 324.

Type-species: *Bracon gelechia* Ashmead. Desig. by Viereck, 1914.

Amicoplidea Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 118.

Type-species: *Phylax palliventris* Provancher. Orig. desig.

Macrodyctium Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 138.

Type-species: *Bracon eurae* Ashmead. Orig. desig.

Tropidobracon Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 139.

Type-species: *Bracon gastroides* Ashmead. Orig. desig.

Most species are external parasites of lepidopterous and coleopterous larvae, but a few species parasitize larvae of flies and sawflies.

Revision: Muesebeck, 1925. U. S. Natl. Mus., Proc. 67 (8): 1-85 (No. Amer. spp.).

- acrobasidis* Muesebeck. N. J., Fla., Ark. Host: *Acrobasis caryae* Grote, *A. caryivorella* Rag., *A. comptoniella* Hulst.
- Bracon acrobasidis* Muesebeck, 1963. Ent. News 74: 158. ♀, ♂.
- aequalis* Provancher. Canada.
- Bracon aequalis* Provancher, 1880. Nat. Canad. 12: 141. ♀.
- agathymi* Muesebeck. Tex., Ariz. Host: *Agathymus mcalpinei* (Freem.), *A. neumogini* (Edw.).
- Bracon agathymi* Muesebeck, 1963. Ent. News 74: 157. ♀, ♂.
- americanus* (Ashmead). N. S., Que., Iowa, Colo., Idaho, Ariz., Yukon.
- Trachyusa americana* Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 18. ♂.
- analcidis* Ashmead. Ky., Tenn., Iowa, Mo., Ark. Host: *Sphenophorus parvulus* Gyll., *Tyloderma fragariae* (Riley).
- Bracon analcidis* Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 619. ♀.
- angelesius* Provancher. Calif. Host: *Euura* sp., *Pontania* sp. This species is also recorded from a dipterous gall on *Mimulus* which needs to be confirmed.
- Bracon angelesius* Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 372. ♀.
- Bracon cecidomyiae* Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 616. ♀.
- Bracon euurae* Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 621. ♀.
- apicatus* Provancher, N. Y., Ga., Ont., Mich.
- Bracon apicatus* Provancher, 1880. Nat. Canad. 12: 143. ♀.
- argutator* Say. S. C., Ind., Iowa, Mo., Tex. Host: *Saluria* sp.
- Bracon argutator* Say, 1836. Boston Jour. Nat. Hist. 1: 253. ♀.
- atricollis* Ashmead. Mass., Conn., N. J., Del., Va., Ga., Fla., Ohio, Mich., Ill., Mo., S. Dak., Wash.
- Bracon atricollis* Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 622. ♀. *
- Microbracon nawaasorum* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 207.
- bembeciae* (Walley). B. C., Wash., Oreg. Host: *Pennisetia marginata* (Harr.).
- Microbracon bembeciae* Walley, 1932. Canad. Ent. 64: 186. ♀.
- brachyurus* Ashmead. Ont., Iowa, Tenn.
- Bracon brachyurus* Ashmead, 1891. Canad. Ent. 23: 1. ♀.
- brevicornis* Wesmael. No. Amer.(?); Europe, Asia, No. Africa. Introduced from Europe, Asia, and North Africa. Liberated in several states and provinces but not known to be established. Host: *Heliothis virescens* (F.), *H. zea* (Boddie), *Ostrinia nubilalis* (Hbn.), *Pectinophora gossypiella* (Saund.).
- Bracon brevicornis* Wesmael, 1838. Nouv. Mem. Acad. Sci. Bruxelles 11: 23. ♀, ♂.
- bruchivorus* Muesebeck. Utah, Ariz., Calif. Host: *Acanthoscelides* sp.
- Bracon bruchivorus* Muesebeck, 1963. Ent. News 74: 162. ♀, ♂.
- canadensis* (Ashmead). Ont.
- Opius canadensis* Ashmead. 1891. Canad. Ent. 23: 4. ♂.
- caulicola* (Gahan). Mass. s. to S. C., w. to Wis., Kans., and Ark.; Idaho. Host: *Heliodines ionis* Clarke, *Onychobaris subtonsa* Lec., *Ostrinia nubilalis* (Hbn.), *O. obrumbratalis* (Led.), *O. penitalis* (Grote), *Suleima helianthana* (Riley), *Vitacea polistiformis* (Harr.).
- Microbracon caulicola* Gahan, 1922. U. S. Natl. Mus., Proc. 61 (24): 2. ♀, ♂.
- Biology: Wester, 1956. Ent. Soc. Wash., Proc. 58: 283-284.
- cephi* (Gahan). Minn., Iowa, N. Dak., Mont., southwest. Canada. Host: *Cephus cinctus* Nort.
- Microbracon cephi* Gahan, 1918. Ent. Soc. Wash., Proc. 20: 19. ♀, ♂.
- Biology: Nelson and Farstad, 1953. Canad. Ent. 85: 103-107. — Holmes, et al., 1963. Canad. Ent. 95: 113-126.
- cerambycidiphagus* (Muesebeck). Pa., Ont., Mich., Wis., Mo. Host: *Dectes texanus* Lec., *Oberera* sp., *O. praelonga* Casey, *O. tripunctata* (Swed.).
- Microbracon cerambycidiphagus* Muesebeck, 1925. U. S. Natl. Mus., Proc. 67 (8): 76. ♀, ♂.
- cinctus* (Provancher). Canada.
- Phylax cinctus* Provancher, 1880. Nat. Canad. 12: 175. ♂.

connecticutorum (Viereck). Conn.

Microbracon connecticutorum Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 209.

cookii Ashmead. Mich.

Bracon cookii Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 624. ♂.

cryptorhynchi (Muesebeck). Mass. Host: *Cryptorhynchus lapathi* (L.).

Microbracon cryptorhynchi Muesebeck, 1931. U. S. Natl. Mus., Proc. 79 (16): 16. ♀, ♂.

curtus (Provancher). Que., Ont., Mich., Minn., Okla., Idaho, Ariz.

Phylax curtus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 130. ♀, ♂.

cuscuteae Muesebeck. D. C. Host: *Smicronyx tycheoides* Lec.

Bracon cuscuteae Muesebeck, 1967. Ent. News 78: 138. ♀, ♂.

cushmani (Muesebeck). Pa. s. to Fla., w. to Colo. and Tex.; Ariz., Calif.; Virgin Isl., West

Indies. Host: *Acrobasis caryae* Grote, *A. caryivorella* Rag., *A. hebecella* Hulst, *A. indigenella* (Zell.), *Choristoneura fumiferana* (Clem.), *Desmia funeralis* (Hbn.),

Dioryctria disclusa Heinr., *Grapholitha prunivora* (Walsh), *Mesocondyla gastralis*

(Guen.), *Psorosina hammondi* (Riley), *Rhyacionia frustrana* (Comst.).

Habrobracon variabilis Cushman, 1914. Ent. Soc. Wash., Proc. 16: 103. ♀, ♂. Preocc. by

Provancher, 1888.

Microbracon cushmani Muesebeck, 1925. U. S. Natl. Mus., Proc. 67 (8): 29. N. name for *variabilis* Cushman.

erucarum (Cushman). Okla., Mont., Wyo., Colo., Idaho, Utah, Ariz., Oreg., Calif. Host: *Barbara*

colfariana taxifoliella (Busck), *Euroa* sp.

Habrobracon erucarum Cushman, 1920. U. S. Natl. Mus., Proc. 58: 291. ♀, ♂.

furtivus Fyles. Que. s. to N. C., w. to Iowa. Host: *Gnorimoschema gallaeasteriella* (Kell.), *G. gallaesolidaginis* (Riley).

Bracon furtivus Fyles, 1892. Canad. Ent. 24: 35. ♀.

Bracon fungicola Ashmead, 1894. Cincinnati Soc. Nat. Hist., Jour. 17: 46. ♀.

Biology: Miller, 1963. Ohio Jour. Sci. 63: 73.

gastroideae Ashmead. Mass., N. Y., Pa., Ohio, Ont., Mich., Ill., Minn., Iowa, S. Dak., Kans., Tex., Colo., Calif. Host: *Gastrophysa cyanea* Melsh.

Bracon gastroideae Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 617. ♂.

gelechia Ashmead. No. Amer.; West Indies, Bermuda, India. Host: *Anacamptis fragariella*

Busck, *Ancylys comptana fragariae* (W. and R.), *Anthophila pariana* (Clerck), *Archips*

argyrospilus (Wlkr.), *Argyrotaenia citrana* (Fern.), *Chionodes hibiscella* (Busck),

Cnephasia longana (Haw.), *Coleophora malivorella* Riley, *Desmia funeralis* (Hbn.),

Dichomeris marginella (F.), *Dioryctria disclusa* Heinr., *D. reniculella* (Grote),

Elasmopalpus lignosellus (Zell.), *Epiblema strenuanum* (Wlkr.), *Exoteleia dodecella*

(L.), *Gelechia* sp., *Grapholitha molesta* (Busck), *Heliodines nyctaginella* Gibson, *Keiferia*

inconspicuellula (Murtf.), *Ostrinia nubilalis* (Hbn.), *Papaipema* sp., *Paralobesia viteana*

(Clem.), *Pectinophora gossypiella* (Saund.), *Phthorimaea operculella* (Zell.), *Psilocorsis*

quercicella Clem., *Psorosina hammondi* (Riley), *Pterophorus periscelidactylis* Fitch,

Pyrausta signatalis (Wlkr.), *Rhyacionia buoliana* (Schiff.), *R. bushnelli* (Busck),

Sparganothis sulphurana (F.), *Spilonota ocellana* (D. and S.), *Stegasta bosqueella*

(Chamb.), *Thymelicus lineola* (Ochs.).

Bracon gelechia Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 623. ♀, ♂.

Bracon notaticeps Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 624.

Habrobracon johannseni Viereck, 1912. U. S. Natl. Mus., Proc. 42: 622. ♀.

Habrobracon tetralophae Viereck, 1912. U. S. Natl. Mus., Proc. 42: 623. ♀.

Habrobracon diversicolor Viereck, 1912. Ent. News 32: 174. ♀.

Biology: Poos, 1928. Ent. Soc. Wash., Proc. 30: 149. —Gupta, 1951. Nature 168: 793.

—Narayanan and Rao, 1955. Beitr. z. Ent. 5: 36-60. —Wester, 1956. Ent. Soc. Wash., Proc.

58: 284. —Ahmad and Muzaffar, 1976. Entomophaga 21: 235-238.

Morphology: Narayanan and Rao, 1955. Beitr. z. Ent. 5: 286-293 (female reproductive system).

- gemmaecola** (Cushman). Mass., Conn., N. J., Md., Va., Fla., Ohio, Tenn., Mo., Ark., N. Dak., S. Dak., Nebr., Tex., Mont., Colo., Ariz. Host: *Rhyacionia buoliana* (Schiff.), *R. frustrana* (Comst.), *R. bushnelli* (Busck), *R. neomexicana* (Dyar), *R. subtropica* Miller.
Microbracon gemmaecola Cushman, 1927. Jour. Agr. Res. 34: 740. ♀, ♂.
- geraei** (Muesebeck). N. J., Fla., Ohio, Iowa, Ark., S. Dak., Kans., Ariz. Host: *Geraeus* sp., *Trichobaris* sp.
Microbracon geraei Muesebeck, 1925. U. S. Natl. Mus., Proc. 67 (8): 74. ♀, ♂.
- gossypii** Muesebeck. S. C., Ga., Fla., Miss., Ark., La., Tex. Host: *Anthonomus grandis* Boh.
Bracon gossypii Muesebeck, 1963. Ent. News 74: 161. ♀, ♂.
- gracilis** (Provancher). Que.
Phylax gracilis Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 131. ♂.
- hebetor** Say. Cosmopolitan. Host: *Anagasta kuehniella* (Zell.), *Cadra cautella* (Wlkr.), *Ephesia elutella* (Hbn.), *Galleria mellonella* (L.), *Laetilia coccidivora* (Comst.), *Moodna* sp., *Phthorimaea operculella* (Zell.), *Plodia interpunctella* (Hbn.), *Sitotroga cerealella* (Oliv.), *Vitula edmansae* (Pack.).
Bracon hebetor Say, 1836. Boston Jour. Nat. Hist. 1: 252. ♀, ♂.
Bracon dorsator Say, 1836. Boston Jour. Nat. Hist. 1: 253. ♀, ♂.
Bracon juglandis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 621. ♂.
Habrobracon beneficentior Viereck, 1911. U. S. Natl. Mus., Proc. 40: 182. ♀, ♂.
Bracon brevitarsennatus de Stefani, 1919. Inform. R. R. Osserv. Fitopatol. e Intorno ad Alcuni Ins. Dannosi alle Derr. Aliment., Min. Agr. (Palermo, Italy), p. 44. ♀, ♂.
Habrobracon pectinophorae Watanabe, 1935. Insecta Matsumurana 10: 44. ♀, ♂.
- Taxonomy: Lal, 1946. Indian Jour. Ent. 8: 85-88. —Puttarudriah and Channa Basavanna, 1956. Bul. Ent. Res. 47: 183-191.
- Biology: Graf, 1917. U. S. Dept. Agr., Bul. 427, p. 39-40 (as *Habrobracon johannseni* Vier.). —Payne, 1933. Biol. Bul. 65: 187-205. —Payne, 1934. Ecol. Monog. 4: 1-46. —Clover and Chatterjee, 1936. Indian Acad. Sci., Proc. 3: 195-211. —Harries, 1937. Ohio Jour. Sci. 37: 165-171. —Soliman, 1940. Soc. Fouad d'Ent., Bul. 24: 215-247. —Soliman, 1941. Soc. Fouad d'Ent., Bul. 25: 1-97. —Martin, 1947. Introduct. Genetics *Habrobracon juglandis* Ashm., 205 p. —Beard, 1952. Conn. (State) Agr. Expt. Sta., Bul. 562, p. 1-27. —Kanungo, 1955. Current Sci. 24: 59. —Grosch, La Chance, and Sullivan, 1955. Ent. Soc. Amer., Ann. 48: 415-416. —Grosch, 1959. Ent. Soc. Amer., Ann. 52: 294-298. —Clark, 1963. Ent. Soc. Amer., Ann. 56: 616-619. —Rotary and Gerling, 1973. Environ. Ent. 2: 134-138.
- Morphology: Schluter, 1933. Ztschr. f. Morph. u. Oekol. der Tiere 27: 488-517. —Bender, 1943. Ent. Soc. Amer., Ann. 36: 537-545. —Grosch, 1952. Jour. Morph. 91: 221-236.
- helianthi** (Muesebeck). Fla., Tex. Host: *Isophrictis* sp.
Microbracon helianthi Muesebeck, 1926. U. S. Natl. Mus., Proc. 69 (7): 1. ♀, ♂.
- hemimena** (Rohwer). Md., Fla. Host: *Hemimene plummeriana* (Busck).
Microbracon hemimena Rohwer, 1915. U. S. Natl. Mus., Proc. 49: 232. ♀.
- hobomok** (Viereck). Conn., N. Y., Md., Mich., Iowa.
Microbracon hobomok Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 208.
- hyslopi** (Viereck). Colo., Idaho, Utah, Wash., Oreg., Calif. Host: *Cnephasia longana* (Haw.), *Etiella zinckenella schisticolor* Zell., *Hypera nigrirostris* (F.), *Platyptilia carduidactyla* (Riley), *P. williamsii* Grin.
Microbracon hyslopi Viereck, 1912. U. S. Natl. Mus., Proc. 42: 142. ♀.
- jani** Muesebeck. Minn., Miss. Host: *Janus abbreviatus* (Say).
Bracon jani Muesebeck, 1963. Ent. News 74: 164. ♀, ♂.
- juncicola** Ashmead. N. S. to Fla., w. to Ont., N. Dak., and Tex.; Utah, B. C. Host: *Coleophora alniella* Heinr., *C. laricella* (Hbn.), *C. viburniella* Clem., *Etiella zinckenella* (Treit.), *Keiferia inconspicua* (Murtf.), *K. lycopersicella* (Wlsm.).
Bracon juncicola Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 620. ♀.
Bracon melanaspiis Ashmead, 1891. Canad. Ent. 23: 1. ♀.
Microbracon sebequanash Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 206. ♀.

- kirkpatricki** (Wilkinson). Tex.?, Ariz.?, Africa. Introduced from Kenya. Liberated in Tex. and Ariz. but not known to be established. Host: *Anthonomus grandis* Boh., *Pectinophora gossypiella* (Saund.).
Microbracon kirkpatricki Wilkinson, 1927. Bul. Ent. Res. 18: 33. ♀, ♂.
- Biology: Cross, *et al.*, 1969. Jour. Econ. Ent. 62: 448-454. — Bryan, *et al.*, 1971. Jour. Econ. Ent. 64: 1236-1241. — Engroff and Watson, 1975. Ent. Soc. Amer., Ann. 68: 1121-1125.
- konkopoti** (Viereck). Conn.
Microbracon konkopoti Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 207.
- laemosacci** (Muesebeck). Ariz. Host: *Laemosaccus* sp.
Microbracon laemosacci Muesebeck, 1925. U. S. Natl. Mus., Proc. 67 (8): 56. ♀, ♂.
- laspeyresiae** (Walley). Ont., Ga. Host: *Laspeyresia caryana* (Fitch).
Microbracon laspeyresiae Walley, 1935. Canad. Ent. 67: 58. ♀, ♂.
- lineatellae** (Fischer). Calif.(?); Middle East. Introduced from Lebanon. Liberated in Calif. but not known to be established. Host: *Anarsia lineatella* Zell.
Habrobracon lineatellae Fischer, 1968. Pflanzenschutz-Berichte 37: 98. ♀, ♂.
- Biology: Laing and Caltagirone, 1969. Canad. Ent. 101: 135-142.
- lissogaster** Muesebeck. Mont. Host: *Cephus cinctus* Nort.
Bracon lissogaster Muesebeck, 1953. Ent. Soc. Wash., Proc. 55: 150. ♀, ♂.
- Biology: Somsen and Luginbill, 1956. U. S. Dept. Agr., Tech. Bul. 1153, p. 1-7.
- lutus** Provancher. Que. s. to N. C., w. to Ont., Iowa, and Tenn. Host: *Achatodes zeae* (Harr.), *Archanara oblonga* (Grote), *Epiblema scudderianum* (Clem.), *Hendecaneura shawiana* (Kearf.), *Lixus scrobicollis* Boh., *Papaipema lysimachiae* Bird, *P. nebris* (Guen.).
Bracon lutus Provancher, 1880. Nat. Canad. 12: 142. ♀.
Bracon lizi Ashmead, 1893. Canad. Ent. 25: 67. ♀.
- mellitor** Say. No. Amer.; Hawaii. Host: *Acrobasis vaccinii* Riley, *Anthonomus albopilosus* Dietz, *A. eugenii* Cano, *A. fulvus* Lec., *A. grandis* Boh., *A. signatus* Say, *A. squamosus* Lec., *Craponius inaequalis* (Say), *Chalcodermus aeneus* Boh., *Conotrachelus nenuphar* (Hbst.), *Cylas formicarius elegantulus* (Sum.), *Elasmopalpus lignosellus* Zell., *Frumenta nundinella* (Zell.), *Grapholitha molesta* (Busck), *Homoeosoma electellum* (Hulst.), *Hypera nigrirostris* (F.), *Laspeyresia caryana* (Fitch), *Lema collaris* Say, *Mompha stellella* Busck, *Ostrinia nubilalis* (Hbn.), *Paralobesia viteana* (Clem.), *Pectinophora gossypiella* (Saund.), *Platyptilia* sp., *Rhinocyllus conicus* (Froel.), *Rhyacionia adana* Heinr., *R. frustrana* (Comst.), *Rhynchites bicolor* (F.), *Smicraula tuberculatus* Pierce, *Smicronyx constrictus* (Say), *S. scapalis* (Lec.), *Sparganothis sulphurana* (F.), *Stibadium spumosum* Grote, *Tachypterellus quadrigibbus* (Say), *Tylocladia foveolata* (Say).
- Bracon mellitor* Say, 1836. Boston Jour. Nat. Hist. 1: 256. ♂.
- Bracon xanthostigma* Cresson, 1865. Ent. Soc. Phila., Proc. 4: 303. ♀.
- Bracon vernoniae* Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 619. ♀ (♂ misdet.).
- Bracon anthonomi* Ashmead, 1893. U. S. Dept. Agr., Insect Life 5: 185. ♂.
- Microbracon pembertonii* Bridwell, 1919 (1918). Hawaii. Ent. Soc., Proc. 4: 115. ♀, ♂.
- Biology: Folsom, 1936. Jour. Econ. Ent. 29: 111-116. — Adams, Cross, and Mitchell, 1969. Jour. Econ. Ent. 62: 889-895. — McGovern and Cross, 1974. Ent. Soc. Amer., Ann. 67: 520-521. — Barfield, Bottrell, and Smith, 1977. Environ. Ent. 6: 133-137.
- meromyzae** Gahan. Del., Md., Ohio, Mich., Minn., Iowa, Ark., N. Dak., S. Dak., Kans., Idaho, Utah, Ariz., Calif. Host: *Meromyza americana* Fitch.
Bracon (Tropidobracon) meromyzae Gahan, 1913. U. S. Natl. Mus., Proc. 46: 432. ♀, ♂.
- metacomet** (Viereck). Conn.
Microbracon metacomet Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 208. ♀.
- montowesi** (Viereck). Maine, Conn., Pa., N. J., Ont. Host: *Anchylopera platanana* Clem., *Caulocampus acericaulis* (MacG.), *Paraclemensia acerfoliella* (Fitch).
Microbracon montowesi Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 208. ♀, ♂.

- nanus* Provancher. Canada, Ind., Iowa, Kans.
Bracon nanus Provancher, 1880. Nat. Canad. 12: 143. ♀, ♂.
- nevadensis* Ashmead. Idaho, Ariz., Wash., Oreg., Calif. Host: *Chrysobothris deleta* Lec., *Synanthedon bibionipennis* (Bdvl.).
Bracon nevadensis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 623. ♀.
- niger* (Provancher). Que.
Opius niger Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 381. ♀.
- nigradorsum* Ashmead. Ont., Mich., Iowa, S. Dak.
Bracon nigradorsum Ashmead, 1891. Canad. Ent. 23: 2. ♀.
- nigropectus* Provancher. Canada, Vt., Mass., Ohio, Iowa, Ark.
Bracon nigropectus Provancher, 1880. Nat. Canad. 12: 143. ♀.
- nitidulus* Dalla Torre. Canada, Maine, Idaho. Host: *Pissodes* sp.
Bracon nitidulus Provancher, 1883. Nat. Canad. 14: 16. ♀, ♂. Preocc. by Smith, 1858.
Bracon nitidulus Dalla Torre, 1898. Nat. Canad. v. 4, p. 280. N. name for *nitidus* Provancher.
- nuperus* Cresson. Ont., U. S. except New England; Mexico. Host: *Homocoesoma electellum* (Hulst), *Isophrictitis* sp., *Orellia ruficauda* (F.), *Polychrosis rhoifrutana* Kearf. This species has also been recorded as being reared from *Herina frondescentiae* (L.), a European species, *Neaspilota achilleae* Johnson, and *Orthoris crotchii* Lec., all of which need to be confirmed.
Bracon nuperus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 187. ♀.
Bracon minimus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 187. ♀, ♂.
Bracon politus Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 373. ♂.
- oenotherae* (Muesebeck). Mass., N. J., Md., Va., Ga., Ohio, Tenn., Ont., Minn., Nebr., Tex., Calif. Host: *Mompha eloisella* (Clem.).
Microbracon oenotherae Muesebeck, 1925. U. S. Natl. Mus., Proc. 67 (8): 62. ♀, ♂.
- palliventris* (Provancher). Mass., N. Y., Ohio, Ont., Mich., Oreg. Host: *Epiblema strenuanum* (Wlkr.).
Phylax palliventris Provancher, 1880. Nat. Canad. 12: 174. ♀.
Bracon auripes Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 372. ♀.
Zele pallidiventris Dalla Torre, 1898. Cat. Hym., v. 4, p. 78. Emend.
- papaipemae* (Gahan). N. Y., Mich., Minn. Host: *Papaipema frigida* (Smith).
Microbracon papaipemae Gahan, 1922. U. S. Natl. Mus., Proc. 61: 4. ♀.
- pascuensis* Shenefelt. Mich., Kans., Tex.
Bracon pascuensis Shenefelt, 1944. Kans. Ent. Soc., Jour. 17: 74. ♀, ♂.
- piceiceps* Viereck. Kans.
Bracon piceiceps Viereck, 1905. Kans. Acad. Sci., Trans. 19: 268. ♂.
- piger* Wesmael. Oreg., Calif.; Europe. Introduced from France. Host: *Cnephasia* sp., *Etiella zinckenella* (Treit.).
Bracon piger Wesmael, 1838. Nouv. Mem. Acad. Sci. Bruxelles 11: 48. ♀.
- Biology: Parker, 1951. U. S. Dept. Agr., Tech. Bul. 1036, p. 8-11. — Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, p. 87.
- pini* (Muesebeck). N. S., N. B., Que., Maine, Vt., N. H., Mass., Conn., N. Y., Pa., Va., Ont., Mich., Alta., Mont., Colo., Idaho, B. C., Wash., Oreg., Calif. Host: *Cylindrocopturus furnissi* Buch., *C. longulus* (Lec.), *Pissodes fasciatus* Lec., *P. strobi* (Peck), *P. schwarzi* Hopk., *P. terminalis* Hopping, *Podapion gallicola* Riley.
Microbracon pini Muesebeck, 1925. U. S. Natl. Mus., Proc. 67 (8): 52. ♀, ♂.
- Biology: Taylor, 1929. Ent. Amer. 10: 1-12. — Deyrup, 1975. Conf. For. Biome Ecosystem Anal. Stud., Univ. of Wash., Bul. 6, pp. 81-83.
- pityophthori* (Muesebeck). N. Mex. Host: *Pityophthorus* sp.
Microbracon pityophthori Muesebeck, 1925. U. S. Natl. Mus., Proc. 67 (8): 55. ♀.
- platynotae* (Cushman). Ga., La., Tex., Calif.; Mexico. Host: *Heliothis zea* (Boddie), *Lineodes integra* (Zell.), *L. interrupta* Zell., *Pectinophora gossypiella* (Saund.), *Pilemia periusalis* (Wlkr.), *Platynota stultana* Wlsm.
- Habrobracon platynotae* Cushman, 1914. Ent. Soc. Wash., Proc. 16: 104. ♀, ♂.

- podunkorum** (Viereck). Conn., Va., Ohio, Mich., Iowa, Mo. Host: *Aristotelia absconditella* (Wlkr.).
Microbracon podunkorum Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 207.
- politiventris** (Cushman). N. S. s. to Va., w. to B. C. and Calif.; La. Host: *Ancylistis comptana fragariae* (W. and R.), *Archips rosanus* (L.), *Argyrotaenia pinatubana* (Kearf.), *A. velutinana* (Wlkr.), *Choristoneura conflictana* (Wlkr.), *C. fumiferana* (Clem.), *C. occidentalis* Freem., *C. parallela* (Rob.), *C. pinus* Freem., *C. rosaceana* (Harr.), *Conotrachelus nenuphar* (Hbst.), *Dioryctria reniculella* (Grote), *Grapholitha molesta* (Busck), *Pandemis lamprosana* (Rob.), *Paralobesia viteana* (Clem.), *Rhyacionia buoliana* (Schiff.).
Habrobracon politiventris Cushman, 1919. U. S. Natl. Mus., Proc. 55: 517. ♀.
- Biology: McKnight, 1971. Ent. Soc. Amer., Ann. 64: 620-624.
- psilocorsi** (Viereck). Md., Tex. Host: *Arogalea cristifasciella* (Chamb.).
Microbracon psilocorsi Viereck, 1912. U. S. Natl. Mus., Proc. 42: 143. ♀, ♂.
- punctatus** (Muesebeck). N. Y., Pa., Md., N. C., Ga., Fla., Mich., Wis., Ill., Ala., Iowa, Ark., La., Tex. Host: *Anthonomus nubilus* Lec., *Cylas formicarius elegantulus* (Sum.), *Endalut celatus* Burke, *Faustinus cubae* (Boh.). Also recorded from *Listronotus oregonensis* Lec. which needs to be confirmed.
Microbracon punctatus Muesebeck, 1925. U. S. Natl. Mus., Proc. 67 (8): 24. ♀.
- pygmaeus** Provancher. South. Canada, U. S. Host: *Argyrotaenia citrana* (Fern.), *Coleophora innotabilis* Braun, *C. laricella* Hbn., *C. leucochrysaella* Clem., *C. malivorella* Riley, *C. pruniella* Clem., *C. serratella* (L.), *C. volckei* Heinr.
Bracon pygmaeus Provancher, 1880. Nat. Canad. 12: 144. ♀, ♂.
Bracon junci Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 619. ♀, ♂.
Bracon trifolii Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 622. ♂.
Bracon kansensis Viereck, 1905. Kans. Acad. Sci., Trans. 19: 268. ♀.
Microbracon coleophorae Rohwer, 1915. U. S. Natl. Mus., Proc. 49: 231. ♀, ♂.
Microbracon massasoit Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 207.
- Biology: Doner, 1934. Ent. Soc. Amer., Ann. 27: 435-442.
- pyralidiphagus** (Muesebeck). N. J. s. to Fla.; Mich., La., Tex., Colo., Ariz.
Microbracon pyralidiphagus Muesebeck, 1925. U. S. Natl. Mus., Proc. 67 (8): 34. ♀.
- quinnipiacorum** (Viereck). Conn., N. J., Pa., Md., Va., Fla., Mich., Ind., Tenn., Iowa, Ark., S. Dak., Tex., Ariz.
Microbracon quinnipiacorum Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 207.
- radicis** Shenefelt. Wis. Host: *Hylobius radicis* Buch.
Bracon radicis Shenefelt, 1960. Canad. Ent. 92: 872. ♀, ♂.
- rhyacioniae** (Muesebeck). Que. w. to Sask.; N. Dak., S. Dak., Nebr., Mont., Colo., N. Mex., Ariz., Idaho, Calif. Host: *Barbara colfariana* (Kearf.), *Dioryctria auranticella* (Grote), *Eacosma recissioriana* Heinr., *E. tocullionana* Heinr., *Laspeyresia youngana* (Kearf.), *Rhyacionia frustrana* (Comst.), *R. bushnelli* (Busck), *R. neomexicana* (Dyar).
Microbracon rhyacioniae Muesebeck, 1931. U. S. Natl. Mus., Proc. 79 (16): 15. ♀, ♂.
- rhyssomati** Ashmead. Ohio, Ill. Host: *Rhyssomatus annectans* Casey, *R. lineaticollis* (Say).
Bracon rhyssomati Ashmead, 1894. Cincinnati Soc. Nat. Hist., Jour. 17: 46. ♂.
- rosaceani** Muesebeck. Oreg. Host: *Choristoneura rosaceana* (Harr.).
Bracon rosaceani Muesebeck, 1963. Ent. News 74: 160. ♀, ♂.
- rudbeckiae** (Muesebeck). Iowa, Ark., N. Dak., Kans., Tex., N. Mex., Ariz. Host: *Anthonomus squamosus* Lec.
Microbracon rudbeckiae Muesebeck, 1925. U. S. Natl. Mus., Proc. 67 (8): 45. ♀, ♂.
- rufomarginatus** Ashmead. W. Va.
Bracon rufomarginatus Ashmead, 1893. Canad. Ent. 25: 68. ♀.

- sanninoideae** (Gahan). Ont. s. to Ga., w. to Wis., Kans., and Ark. Host: *Alcathoe caudata* (Harr.), *Podosesia syringae fraxini* Lugg., *Synanthedon exitiosa* (Say), *S. rhododendri* (Beut.).
Microbracon sanninoideae Gahan, 1917. U. S. Natl. Mus., Proc. 53: 196. ♀, ♂.
- scanticorum** (Viereck). Conn., Ill.
Microbracon scanticorum Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 207.
- sesiae** (Muesebeck). Conn., N. Y., Colo. Host: *Janus integer* (Nort.), *Synanthedon tipuliformis* (Clerck).
Microbracon sesiae Muesebeck, 1925. U. S. Natl. Mus., Proc. 67 (8): 53. ♀, ♂.
- sphenophori** (Muesebeck). Mo., Ark. Host: *Sphenophorus callosus* (Oliv.).
Microbracon sphenophori Muesebeck, 1925. U. S. Natl. Mus., Proc. 67 (8): 25. ♀, ♂.
- sulcifrons** (Ashmead). Colo.
Microbracon sulcifrons Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 15. ♂.
- tachypteri** (Muesebeck). N. Y., W. Va., Wis., Kans., Colo. Host: *Tachypterellus consors cerasi* List, *T. quadrigibbus* (Say), *T. q. magnas* List.
Microbracon tachypteri Muesebeck, 1925. U. S. Natl. Mus., Proc. 67 (8): 68. ♀.
- tenuiceps** (Muesebeck). Que. s. to Va. and Tenn., w. to Ont. and Kans.; Tex., Idaho, Nev., Wash. Host: *Hypera meles* (F.), *H. nigrirostris* (F.).
Microbracon tenuiceps Muesebeck, 1925. U. S. Natl. Mus., Proc. 67 (8): 46. ♀.
- tenuis** Muesebeck and Walkley. Alaska.
Macrodactylus politum Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 252. ♀. Preocc. by Provancher, 1888.
Microbracon ashmeadi Muesebeck, 1925. U. S. Natl. Mus., Proc. 67 (8): 42. N. name for *politum* Ashmead; preocc. by Morrison, 1917.
Bracon tenuis Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 168. N. name for *ashmeadi* Muesebeck.
- terebella** Wesmael. N. Y., Pa., Ohio; Europe. Host: *Cephus cinctus* Nort., *C. pygmaeus* (L.), *Trachelus tabidus* (F.). This species was also introduced into Ont., N. Dak., and Mont. from Europe but apparently not established.
Braco terebella Wesmael, 1838. Nouv. Mem. Acad. Sci. Bruxelles 11: 57. ♀.
- Biology: Salt, 1931. Bul. Ent. Res. 22: 527-534.
- thurberiphagae** (Muesebeck). Tex., Ariz.; Mexico, West Indies. Host: *Ancylostomia stercorea* (Zell.), *Anthonomus grandis thurberiae* Pierce, *Thurberiphaga diffusa* (Barnes).
Microbracon thurberiphagae Muesebeck, 1925. U. S. Natl. Mus., Proc. 67 (8): 54. ♀, ♂.
- Biology: Bennett, 1960. Bul. Ent. Res. 50: 747-749.
- tychii** (Muesebeck). Utah, Idaho, Calif. Host: *Etiella zinckenella* (Treit.), *Tychius lineellus* Lec., *T. semisquamosus* Lec.
Microbracon tychii Muesebeck, 1925. U. S. Natl. Mus., Proc. 67 (8): 51. ♀, ♂.
- uncas** (Viereck). Conn.
Microbracon uncas Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 208.
- variabilis** (Provancher). Que. s. to Ga., w. to Minn. and Tex.; Idaho. Host: *Acrobasis caryae* Grote, *A. rubrifasciella* Pack., *Blastodacna* sp., *Conotrachelus nenuphar* (Hbst.), *Paralobesia viteana* (Clem.), *Tachypterellus quadrigibbus* (Say), *T. q. magnas* List.
Opis variabilis Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 382. ♂.
Bracon tortricicola Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 621. ♀.
- Biology: Nickles, Pierce, and Pinkney, 1950. U. S. Dept. Agr., Tech. Bul. 1011, p. 9-12.
—Balduf, 1968. Ent. Soc. Amer., Ann. 61: 467-468.
- wavequa** (Viereck). Conn.
Microbracon wavequa Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 206.
- xanthonotus** Ashmead. N. H., Va., Minn., Colo., N. Mex., Idaho, Utah, Ariz., Wash., Oreg., Calif. Host: *Malacosoma californicum californicum* (Pack.), *M. c. fragile* (Stretch), *M. c.*

pluviale (Dyar), *M. c. recenseo* Dyar, *M. constrictum* (Hy. Edw.), *M. dissstria* Hbn., *Orgyia leucostigma* (Smith), *O. pseudotsugata* (McD.), *O. vetusta* (Bdvl.), *Sabulodes caberatae* (Gn.).

Bracon xanthonotus Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 618. ♀, ♂.
Bracon (Habrobracon) hopkinsi Viereck, 1910. U. S. Natl. Mus., Proc. 38: 380. ♀, ♂.
Habrobracon mali Viereck, 1913. U. S. Natl. Mus., Proc. 44: 641. ♀, ♂.

Biology: McKenzie, 1935. Calif. Agr. Expt. Sta., Bul. 592, p. 20-21.

Genus COELOIDES Wesmael

Coeloides Wesmael, 1838. Nouv. Mem. Acad. Sci. Bruxelles 11: 59.

Type-species: *Coeloides scolyticida* Wesmael. Desig. by Shenefelt, 1943.

Syntomomelus Kokujev, 1902. Rev. Russe d'Ent. 3: 163.

Type-species: *Syntomomelus rossicus* Kokujev. Monotypic.

Habrobraconidea Viereck, 1912. U. S. Natl. Mus., Proc. 43: 578.

Type-species: *Habrobraconidea bicoloripes* Viereck. Orig. desig.

Coeloidina Viereck, 1921. U. S. Natl. Mus., Proc. 59: 133.

Type-species: *Coeloides melanotus* Wesmael. Orig. desig.

CeroBracon Viereck, 1926. Canad. Ent. 58 (3): 54.

Type-species: *Bracon secundus* Dalla Torre. Orig. desig.

Species are external parasites of larvae of wood boring Coleoptera.

brunneri Viereck. Mont. s to N. Mex., w. to Wash. and Calif. Host: *Dendroctonus pseudotsugae* Hopk. Other host records need to be confirmed.

Coeloides brunneri Viereck, 1911. U. S. Natl. Mus., Proc. 41: 293. ♀, ♂.

Coeloides scolyti Cushman, 1931. Wash. Acad. Sci., Jour. 21: 303. ♀, ♂.

Biology: Ryan, 1962. Ent. Soc. Amer., Ann. 55: 403-409. — Ryan and Rudinsky, 1962. Canad. Ent. 94: 748-763. — Ryan, 1963. Ent. Soc. Amer., Ann. 56: 639-648. — Richerson and Borden, 1971. Entomophaga 16: 95-99. — Richerson and Borden, 1972. Canad. Ent. 104: 1235-1250, 1877-1881. — Deyrup, 1975. Conf. For. Biome Ecosystem Anal. Stud., Univ. of Wash., Bul. 6, p. 87-90.

Morphology: Richerson, Borden, and Hollingdale, 1972. Canad. Jour. Zool. 50: 909-913 (antenna).

crocator (Kirby). No. Amer. ("lat. 65").

Bracon crocator Kirby, 1837. Fauna Bor.-Amer., v. 4, p. 261. ♀.

dendroctoni Cushman. Que.; S. Dak. s. to Ariz., w. to B. C. and Calif.; Alaska. Host:

Dendroctonus obesus (Mann.), *D. ponderosae* Hopk., *D. rufipennis* (Kby.), *Ips confusus* (Lec.), *I. emarginatus* (Lec.), *I. oregonis* (Eichh.), *I. perturbatus* (Eichh.), *I. pilifrons* Swaine, *Orthothomicus caelatus* (Eichh.).

Coeloides dendroctoni Cushman, 1931. Wash. Acad. Sci., Jour. 21: 303. ♀, ♂.

Biology: De Leon, 1935. Ent. Soc. Amer., Ann. 28: 411-424. — Reid, 1963. Canad. Ent. 95: 233-235. — Deyrup, 1975. Conf. For. Biome Ecosystem Anal. Stud., Univ. of Wash., Bul. 6, p. 90.

Morphology: De Leon, 1934. N. Y. Ent. Soc., Jour. 42: 297-317.

piissodis (Ashmead). N. S. and N. B. s. to Ga., w. to Tex.; Ont., Wis., Minn., Wyo. Host: *Dendroctonus frontalis* Zimm., *Ips calligraphus* (Germar), *I. grandicollis* (Eichh.),

Pissodes approximatus Hopk., *P. nemorensis* Germar, *P. strobi* (Peck).

Bracon piissodis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 617. ♀.

Habrobraconidea bicoloripes Viereck, 1912. U. S. Natl. Mus., Proc. 43: 579. ♀.

Biology: Taylor, 1929. Ent. Amer. 10: 22-26.

promontorii (Dalla Torre). Canada, N. H., Pa.

Bracon striatus Provancher, 1880. Nat. Canad. 12: 140. ♂. Preocc. by Brulle, 1846.

Bracon promontorii Dalla Torre, 1898. Cat. Hym., v. 4, p. 285. N. name for *striatus* Provancher.

rufovariegatus (Provancher). Canada.

Bracon rufovariegatus Provancher, 1880. Nat. Canad. 12: 142. ♀, ♂.

- scolytivorus** (Cresson). Que. s. to N. C.; Mo. Host: *Neoclytus acuminatus* (F.), *Scolytus quadrispinosus* Say.
Bracon scolytivorus Cresson, 1873. In Riley, Ins. Mo., Ann. Rpt. 5: 106. ♀, ♂.
Bracon longicaudus Provancher, 1880. Nat. Canad. 12: 142. ♀, ♂. Preocc. by Brulle, 1846.
Bracon canadensis Dalla Torre, 1898. Cat. Hym., v. 4, p. 261. N. name for *longicaudus* Provancher.
- secundus** (Dalla Torre). Que., Maine, N. H., N. C., Minn. Host: *Pissodes dubius* Rand.
Bracon nigripes Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 121. ♀, ♂. Preocc. by Brulle, 1846.
Bracon secundus Dalla Torre, 1898. Cat. Hym., v. 4, p. 288. N. name for *nigripes* Provancher.
- vancouverensis** (Dalla Torre). B. C.
Bracon striatus Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 432. ♂. Preocc. by Brulle, 1846.
Bracon vancouverensis Dalla Torre, 1898. Cat. Hym., v. 4, p. 293. N. name for *striatus* Provancher.

Genus COMPSOBRACON Ashmead

- Compsobracon* Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 138.
 Type-species: *Exothecus magnificus* Ashmead. Orig. desig.
Macronura Szepligeti, 1906. Mus. Nat. Hung., Ann. 4: 581.
 Type-species: *Iphiaulax mirabilis* Szepligeti. Desig. by Viereck, 1914.
- magnificus** (Ashmead). Tex.
Exothecus magnificus Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 624. ♀.

Genus CYANOPTERUS Haliday

- Cyanopterus* Haliday, 1835. Ent. Mag. 3: 22.
 Type-species: *Ichneumon flavator* Fabricius. Monotypic.
Bracambus Szepligeti, 1896. Termes. Fuzetek 19: 168.
 Type-species: *Ichneumon flavator* Fabricius. Monotypic.
Coeloidimorpha Viereck, 1913. U. S. Natl. Mus., Proc. 44: 558.
 Type-species: *Bracon (Melanobracon) webbi* Viereck. Orig. desig.
- laevis** (Provancher). Que., Maine, Pa., Ga., Mich., Miss., Minn., Mont., Calif.
Bracon laevis Provancher, 1880. Nat. Canad. 12: 138. ♀.
Bracon (Melanobracon) webbi Viereck, 1909. U. S. Dept. Agr. Bur. Ent., Bul. 58: 54. ♀.

Genus IPHIAULAX Foerster

- Iphiaulax* Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 234.
 Type-species: *Bracon impostor* Scopoli. Orig. desig.
Ipobracon Dalla Torre, 1898. Cat. Hym., v. 4, p. 296.
 Type-species: *Bracon nigrator* Zetterstedt. Desig. by Muesebeck and Walkley, 1951.
Digonogastra Viereck, 1912. U. S. Natl. Mus., Proc. 42: 621.
 Type-species: *Bracon epicus* Cresson. Orig. desig.
Monogonogastra Viereck, 1912. U. S. Natl. Mus., Proc. 42: 625.
 Type-species: *Bracon atriplectus* Ashmead. Orig. desig.
Iphiaulacidea Fahringer, 1926. Opusc. Bracon., v. 1, p. 189.
 Type-species: *Bracon impostor* Scopoli. Desig. by Muesebeck and Walkley, 1951.
- agrili** (Ashmead). Que. and N. B. s. to Ga., w. to N. Dak. and Ariz. Host: *Agrilus* sp., *Oberea praelonga* Casey.
Bracon agrili Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 612. ♀, ♂.
- americanus** Provancher. Que., N. Y., Pa., Va.
Iphiaulax americanus Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 371. ♀.
- atripectus** (Ashmead). Calif.
Bracon atriplectus Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 614. ♀.

augustus Viereck. Conn.

Ipbiaulax (Monogonogastra) augustus Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 210. ♀.

cinnabarinus Viereck. Tex., N. Mex., Ariz.

Ipbiaulax cinnabarinus Viereck, 1905. Kans. Acad. Sci., Trans. 19: 286. ♀.

epicus (Cresson). Fla., Mich., Ill., Iowa, Ark., Tex., Ariz.

Bracon epicus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 183. ♀.

erythrogaster (Brulle). Pa.

Bracon erythrogaster Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 401. ♀.

erythrus (Viereck). Tex., N. Mex., Ariz., Calif.

Vipio erythrus Viereck, 1905. Kans. Acad. Sci., Trans. 19: 284. ♂.

eurygaster (Brulle). Maine, Conn., N. Y., Pa., N. J., Mich., Ind., S. Dak. Host: *Saperda concolor* Lec.

Bracon eurygaster Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 400. ♀.

faustus (Cresson). Kans., Tex., Ariz.; Mexico. Host: *Ataxia* sp., *A. hubbardi* Fish.

Bracon faustus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 185. ♀.

koebeleii (Ashmead). Calif.

Bracon koebeleii Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 613. ♂.

manteri Nettleton. Ga., Fla., Ala., Miss. Host: *Oiketicus abbottii* Grote, *Thyridopteryx ephemeraeformis* (Haw.).

Ipbiaulax manteri Nettleton, 1938. Ent. Soc. Amer., Ann. 31: 15. ♀, ♂.

melanogaster Viereck. Kans.

Ipbiaulax melanogaster Viereck, 1905. Kans. Acad. Sci., Trans. 19: 270. ♀.

militaris Viereck. Pa., N. J., Md., Kans.

Ipbiaulax militaris Viereck, 1905. Kans. Acad. Sci., Trans. 19: 269. ♀.

orbita (Brulle). D. C.

Bracon orbita Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 399. ♀.

ornatus (Provancher). Canada.

Bracon ornatus Provancher, 1880. Nat. Canad. 12: 141. ♀, ♂.

Ipbiaulax decoratus (!) Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 371.

palliventris (Cresson). Mich., "Colo. Terr."

Bracon palliventris Cresson, 1865. Ent. Soc. Phila., Proc. 4: 301. ♀.

Bracon pallidiventris Dalla Torre, 1898. Cat. Hym., v. 4, p. 282. Emend.

perepicus Viereck. Tex., N. Mex., Ariz.

Ipbiaulax perepicus Viereck, 1905. Kans. Acad. Sci., Trans. 19: 285. ♀.

propinquus Viereck. Ariz.

Ipbiaulax propinquus Viereck, 1905. Kans. Acad. Sci., Trans. 19: 286. ♀.

rugiceps (Cresson). Tex.

Bracon rugiceps Cresson, 1872. Amer. Ent. Soc., Trans. 4: 184. ♀.

sanguineus (Provancher). Ariz., Calif.

Bracon sanguineus Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 372. ♀.

Genus VIPIO Latreille

Vipio Latreille, 1804. Nouv. Dict. Hist. Nat. 24: 173.

Type-species: *Ichneumon desertor* Fabricius. Desig. by Foerster, 1862.

Glyptomorpha Holmgren, 1868. Eug. Resa II, Zool. I, Ins., p. 427.

Type-species: *Glyptomorpha ferruginea* Holmgren. Monotypic.

Pseudovipio Szepligeti, 1896. Termes. Fuzetek 19: 230.

Type-species: *Bracon inscriptor* Nees. Desig. by Viereck, 1914.

Euvipio Szepligeti, 1904. In Wytsmann, Gen. Ins., v. 22, p. 14.

Type-species: *Euvipio rufa* Szepligeti. Monotypic.

Zavipio Viereck, 1914. U. S. Natl. Mus., Bul. 83: 156.

Type-species: *Vipio marshalli* Schmiedeknecht. Orig. desig.

belfragei (Cresson). Ga., Ind., Ill., Mo., Tex. Host: *Sphenophorus cariosus* (Oliv.).

Bracon belfragei Cresson, 1872. Amer. Ent. Soc., Trans. 4: 186. ♀.

coloradensis Ashmead. Mont., Wyo., Colo., N. Mex., Idaho, Utah, Ariz.

Vipio coloradensis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 611. ♀.
croceus (Cresson). "Colo. Terr."

Bracon croceus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 302. ♀.

monilemae Gahan. Utah, Calif.; Mexico. Host: *Monilema* sp.

Vipio monilemae Gahan, 1930. U. S. Natl. Mus., Proc. 77 (8): 3. ♀, ♂.

piceipectus Viereck. Kans.

Vipio piceipectus Viereck, 1905. Kans. Acad. Sci., Trans. 19: 269. ♀.

rugator (Say). N. J. s. to Fla., w. to Wis., Kans., and Tex.; Mexico.

Bracon rugator Say, 1836. Boston Jour. Nat. Hist. 1: 251. ♀.

Bracon mavoritus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 186. ♀.

Bracon novitus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 186. ♂.

schwarzii (Ashmead). Ga., Fla., Mich., Iowa.

Bracon Schwarzii Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 615. ♀.

texanus (Cresson). S. C., Tenn., Iowa, Tex.

Bracon texanus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 187. ♀.

uniformis (Cresson). "Colo. Terr."

Bracon uniformis Cresson, 1865. Ent. Soc. Phila., Proc. 4: 302. ♀.

SUBFAMILY EXOTHECINAE

The genera in this group were included in the Rogadinae in the previous catalog although they were placed in a distinct subfamily by earlier workers. Separation from the Rogadinae appears justified since the Exothecinae are apparently external parasites of lepidopterous, coleopterous, and sawfly larvae, the Rogadinae being internal parasites of lepidopterous larvae. The genera included here are in need of revision and the generic placement of the North American species which follows should be considered only provisional until a thorough study is made of the group.

Taxonomy: Shenefelt, 1975. Hym. Cat., part 12, p. 1115-1163 (cat. World spp.).

TRIBE EXOTHECINI

Genus ACRISIS Foerster

Acrisis Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 236.

Type-species: *Acrisis gracilicornis* Foerster. Orig. desig.

Euchasmus Marshall, 1888. In Andre, Spec. Hym. Eur. Alg., v. 4, p. 210.

Type-species: *Euchasmus eriguus* Marshall. Monotypic.

Episigalphus Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 125.

Type-species: *Episigalphus minutissimus*(!) Ashmead. Orig. desig.

Taxonomy: Muesebeck, 1935. Ent. Soc. Wash., Proc. 37: 175-177 (No. Amer. spp.). —Marsh, 1965. Ent. Soc. Amer., Ann. 58: 690. —Shenefelt and Marsh, 1976. Hym. Cat., part 13, p. 1343-1344 (cat. World spp.).

americana (Ashmead). Pa., Mich., Ind.

Pygostolus americanus Ashmead, 1894. Cincinnati Soc. Nat. Hist., Jour. 17: 47. "♂" = ♀.

minutissima (Ashmead). Wis., Ill., La., S. Dak.

Episigalphus minutissimus(!) Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 125. ♀.

Genus ALLOBRACON Gahan

Allobrakon Gahan, 1915. U. S. Natl. Mus., Proc. 49: 94.

Type-species: *Diachasma pilosipes* Ashmead. Orig. desig.

One undescribed species in North America.

Genus COLASTES Haliday

Colastes Haliday, 1833. Ent. Mag. 1: 266.

Type-species: *Colastes braconius* Haliday. Monotypic.

Erothecus Wesmael, 1838. Nouv. Mem. Acad. Sci. Bruxelles 11: 73.

Type-species: *Erothecus affinis* Wesmael. Desig. by Foerster, 1862.

The synonymy of *Erothecus* with *Colastes* needs to be confirmed by examination of the type-species. There is no doubt, however, that many species associated with *Colastes* at present are not congeneric with the type-species.

Taxonomy: Shenefelt, 1975. Hym. Cat., part 12, p. 1115-1122 (cat. World spp.).
alaskensis (Ashmead). Alaska.

Erothecus alaskensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 252.

orchesia (Ashmead). Mich., Iowa. Host: *Orchesia castanea* Melsh.

Rhyssipolis orchesia Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 625. ♀.

polypori Mason. Que., Man., Wis. Ecology: Reared from the shelf fungus *Polyporus betulinus* on birch.

Colastes polypori Mason, 1968. Canad. Ent. 100: 715. ♀, ♂.

NOMINA NUDA IN COLASTES HALIDAY

Colastes basalis Ashmead, 1899. In Smith, Ins. of N. J., p. 597.

Colastes microrhopalae Riley, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 2: 351.

Genus GNAPTODON Haliday

Opius subg. *Gnaptodon* Haliday, 1837. Ent. Mag. 4: 220.

Type-species: *Bracon pumilio* Nees. Monotypic.

Diraphus Wesmael, 1838. Nouv. Mem. Acad. Sci. Bruxelles 11: 89.

Type-species: *Diraphus pygmaeus* Wesmael. Monotypic.

This genus has traditionally been placed in the Opiinae, but Tobias (1967) and Capek (1970) have placed it with the Exothecini, which appears to be correct. Morphologically, the genus resembles other genera in this tribe. Species are internal parasites of leaf mining lepidopterous larvae and are apparently restricted to the family Nepticulidae.

Revision: Fischer, 1965. Polskie Pismo Ent. 35: 168-182 (No. Amer. spp.). —Fischer, 1967.

Beitr. z. Ent. 17: 969-973 (No. and So. Amer. spp.).

Taxonomy: Tobias, 1967. Ent. Obozr. 46: 661. —Capek, 1970. Canad. Ent. 102: 861, 871.

—Fischer, 1971. Index World Opiinae, p. 127-128 (cat. World spp.). —Shenefelt, 1975. Hym. Cat., part 12, p. 1123-1125 (cat. World spp.).

Biology: Bachmaier, 1965. Veroff. Zool. Staatssamml. Munchen 9: 139.

bicolor Fischer. Va., N. C.

Gnaptodon bicolor Fischer, 1965. Polskie Pismo Ent. 35: 169. ♀, ♂.

glaber Fischer. Va., Fla., Utah. Host: *Nepticula castaneae-foliella* Chamb.

Gnaptodon glaber Fischer, 1965. Polskie Pismo Ent. 35: 171. ♀, ♂.

longicauda Fischer. Md.

Gnaptodon longicauda Fischer, 1965. Polskie Pismo Ent. 35: 172. ♀.

nepticulae (Rohwer). Que., N. Y., Md., D. C., Va., Mich., Wis., Ill., La., N. Mex., Ariz. Host: *Nepticula castaneae-foliella* Chamb.

Gnaptodon nepticulae Rohwer, 1915. U. S. Natl. Mus., Proc. 49: 229. ♀, ♂.

Gnaptodon pulchrigaster Fischer, 1965. Polskie Pismo Ent. 35: 176. ♀, ♂.

Taxonomy: Marsh, 1974. Ent. Soc. Wash., Proc. 76: 285.

recticarinatus Fischer. Yukon.

Gnaptodon recticarinatus Fischer, 1965. Polskie Pismo Ent. 35: 177. ♂.

rugulosus Fischer. N. Y., Oreg.

Gnaptodon rugulosus Fischer, 1965. Polskie Pismo Ent. 35: 179. ♀, ♂.

sinuatus Fischer. Labrador, Yukon.

Gnaptodon sinuatus Fischer, 1965. Polskie Pismo Ent. 35: 181. ♀, ♂.

NOMEN NUDUM IN GNAPTODON HALIDAY

Gnaptodon flavibasilaris Ashmead, 1905. In Nason, Ent. News 16: 298.

Genus ONCOPHANES Foerster

Oncophanes Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 241.

Type-species: *Erothecus minutus* Wesmael. Orig. desig.

Epirhyssalus Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 142

Type-species: *Epirhyssalus californicus* Ashmead. Orig. desig.

Revision: Muesebeck, 1935. Ent. Soc. Amer., Ann. 28: 241-246 (No. Amer. spp.).

Taxonomy: Shenefelt, 1975. Hym. Cat., part 12, p. 1125-1130 (cat. World spp.).

americanus (Weed). Que. s. to Va., w. to Iowa and Kans.; Wash., Oreg. Host: *Acleris minuta* (Rob.), *Amorbia humerosana* Clem., *Ancylys comptana fragariae* (W. and R.), *Archips cerasivoranus* (Fitch), *Argyrotaenia velutinana* (Wlkr.), *Aroga trialbamaculella* (Chamb.), *Caloptilia* sp., *Choristoneura fumiferana* (Clem.), *C. rosaceana* (Harr.), *Endothenia hebesana* (Wlkr.), *Eulia ministrana* (L.), *Filatima persicaeella* (Murtf.), *Hedia cyanana* (Murtf.), *Janus integer* (Nort.), *Platynota flavedana* Clem., *P. idaeusalis* (Wlkr.), *Psilocorsis* sp., *Sparganothis flavibasana* (Fern.), *S. sulphurana* (F.). *Clinocentrus americanus* Weed, 1887. Ill. State Lab. Nat. Hist., Bul. 3: 43. ♀, ♂. *Rhyssalus atriceps* Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 628. ♀, ♂. *Rhyssalus similis* Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 628. ♂. *Rhyssalus loxoteniae* Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 628. ♀, ♂.

Biology: Zeller and Schuh, 1944. Oreg. Agr. Exp. Sta., Bul. 418, p. 48. —Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767, p. 66. —Bennett, 1961. Tenn. Acad. Sci., Jour. 36: 353.

betulae Muesebeck. Maine, Mich., Wis. Host: *Anthophila pariana* (Clem.). This species has also been recorded from *Heterarthrus nemoratus* (Fall.) which needs to be confirmed.

Oncophanes betulae Muesebeck, 1935. Ent. Soc. Amer., Ann. 28: 245. ♀.

Biology: Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767, p. 66.

californicus (Ashmead). Wash., Oreg., Calif.

Epirhyssalus californicus (!) Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 142. ♀.

nigriventris Muesebeck. Conn., D. C., Md., Fla., Mich., Wis., Iowa.

Oncophanes nigriventris Muesebeck, 1935. Ent. Soc. Amer., Ann. 28: 243. ♀.

pusillus Muesebeck. Wis., Minn. Host: *Trichotaphe levisella* Fyles.

Oncophanes pusillus Muesebeck, 1967. Ent. News 78: 136. ♀.

Genus PHANOMERIS Foerster

Phanomeris Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 235.

Type-species: *Erothecus abnormis* Wesmael. Orig. desig.

Phaenomeris Dalla Torre, 1898. Cat. Hym., v. 4, p. 252. Emend.

Taxonomy: Muesebeck, 1932. Ent. Soc. Wash., Proc. 34: 81-83. —Shenefelt, 1975. Hym. Cat., part 12, p. 1130-1133 (cat. World spp.).

borealis Walley. Baffin Isl.

Phanomeris borealis Walley, 1936. Canad. Ent. 68: 188. ♀, ♂.

mellipes (Provancher). Canada.

Opius pallipes Provancher, 1880. Nat. Canad. 12: 164. ♂. Preocc. by Wesmael, 1835.

Opius mellipes Provancher, 1880. Nat. Canad. 12: 164, footnote.

metalli Muesebeck. Maine, N. Y., Va., Mich., Wis. Host: *Cameraria bethunella* Chamb., *Metallus rohweri* MacG.

Phanomeris metalli Muesebeck, 1932. Ent. Soc. Wash., Proc. 34: 82. ♀, ♂.

phyllotomae Muesebeck. Maine; Europe. Introduced from Austria. Host: *Fenusa pusilla* (Lep.), *Heterarthrus nemoratus* (Fall.).

Phanomeris phyllotomae Muesebeck, 1932. Ent. Soc. Wash., Proc. 34: 83. ♀, ♂.

Biology: Dowden, 1941. U. S. Dept. Agr., Tech. Bul. 757, p. 11-16. —Dowden, 1962. U. S. Dept. Agr., Agr. Handb. 226, p. 63.

Morphology: Dowden, 1941. U. S. Dept. Agr., Tech. Bul. 757, p. 11-16.

propinquus (Walley). Baffin Isl., Que.

Erothecus propinquus Walley, 1936. Canad. Ent. 68: 190. ♀.

Genus PSEUDOGNAPTODON Fischer

Pseudognaptodon Fischer, 1965. Polskie Pismo Ent. 35: 182.

Type-species: *Pseudognaptodon curticauda* Fischer. Orig. desig.

Revision: Fischer, 1965. Polskie Pismo Ent. 35: 182-187 (No. Amer. spp.). — Fischer, 1967.

Beitr. z. Ent. 17: 973-975 (No. and So. Amer. spp.).

curticauda Fischer. Tex; Mexico.

Pseudognaptodon curticauda Fischer, 1965. Polskie Pismo Ent. 35: 183. ♀, ♂.

omissus Fischer. N. C., Fla.

Pseudognaptodon omissus Fischer, 1965. Polskie Pismo Ent. 35: 185. ♀.

Genus RHYSIPOLIS Foerster

Rhysipolis Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 235.

Type-species: *Rogas (Colastes) mediator* Haliday. Orig. desig.

Taxonomy: Shenefelt, 1975. Hym. Cat., part 12, p. 1133-1137 (cat. World spp.).

pallipes (Provancher). Que., Maine, N. H., Mich. Host: *Caloptilia fraxinella* (Ely).

Doryctes pallipes Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 375.

Doryctes pallidipes Dalla Torre, 1898. Cat. Hym., v. 4, p. 234. Emend.

NOMEN NUDUM IN RHYSIPOLIS FOERSTER

Rhysipolis phoropteridis Riley, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 2: 350.

Genus XENARCHA Foerster

Xenarcha Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 235.

Type-species: *Colastes lustrator* Haliday. Orig. desig.

Zamegaspilus Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 141.

Type-species: *Zamegaspilus hopkinsi* Ashmead. Orig. desig.

Taxonomy: Muesebeck, 1956. Ent. Soc. Wash., Proc. 58: 34. — Shenefelt, 1975. Hym. Cat., part 12, p. 1137-1138 (cat. World spp.).

hopkinsi (Ashmead). Md., W. Va., Va., N. C., Tenn., Iowa, Ark.

Zamegaspilus hopkinsi Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 141.

Rhogas melanothorax Viereck, 1905. Kans. Acad. Sci., Trans. 19: 267. ♀.

Genus XENOSTERNUM Muesebeck

Xenosternum Muesebeck, 1935. Ent. Soc. Amer., Ann. 28: 246.

Type-species: *Xenosternum ornigis* Muesebeck. Orig. desig.

ornigis Muesebeck. Tenn., Mo., Ark., Kans., Tex. Host: *Fascista cercerisella* (Chamb.),

Parornix sp.

Xenosternum ornigis Muesebeck, 1935. Ent. Soc. Amer., Ann. 28: 247. ♀, ♂.

TRIBE HORMIINI

Taxonomy: Hedqvist, 1963. Ent. Tidskr. 84: 30-61 (given subfamily rank; key to genera of World). — Capek, 1970. Canad. Ent. 102: 864-865.

Genus CANTHAROCTONUS Viereck

Cantharoctonus Viereck, 1912. U. S. Natl. Mus., Proc. 42: 617.

Type-species: *Cantharoctonus stramineus* Viereck. Orig. desig.

brunneus Hedqvist. Fla.

Cantharoctonus brunneus Hedqvist, 1963. Ent. Tidskr. 84: 38. ♀.

canadensis Mason. Newfoundland, N. S., N. B., Que., Man., Sask. Host: *Bucculatrix canadensisella* (Chamb.).

Cantharoctonus canadensis Mason, 1968. Canad. Ent. 100: 723. ♀, ♂.

Genus **HORMIUS** Nees

Hormius Nees, 1818. Nov. Act. Acad. Caes. Leop. Car. 9: 305.

Type-species: *Bracon moniliatus* Nees. Monotypic.

Taxonomy: Shenefelt, 1975. Hym. Cat., part 12, p. 1143-1148 (cat. World spp.).
albipes Ashmead. Ariz.; Baja Calif.

Hormius albipes Ashmead, 1895. Calif. Acad. Sci., Proc. 5: 544. ♀.

americanus Ashmead. Colo.

Hormius americanus Ashmead, 1890. Colo. Biol. Assoc. Bul. 1: 16. ♀.

Biology: Basinger, 1938. Hilgardia 11: 663-664.

completus (Provancher). Que., Md., D. C., Va., Ohio, Ind., Calif. Host: *Argyrotaenia citrana* (Fern.).

Ephedrus completus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 156. ♀.

Zelee basalis Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 380. ♀.

Hormius erythrogaster Ashmead, 1893. Amer. Ent. Soc., Trans. 20: 41. ♂.

dispar (Brues). N. H., N. Y., Md., D. C., N. C., Mich., Ill., Mo., Ark., Tex.

Pambolus(?) *dispar* Brues, 1907. Wis. Nat. Hist. Soc., Bul. 5: 110. ♀.

Hormius micropterus Hedqvist, 1963. Ent. Tidskr. 84: 51. ♀.

melleus (Ashmead). Mo.

Oncophanes melleus Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 630. ♀.

moniliatus (Nees). Greenland; Europe.

Bracon moniliatus Nees, 1812 (1811). Mag. Gesell. Naturf. Freunde Berlin 5: 36. ♀.

tsugae Mason. Que., Ont. Host: *Coleotechnites apictripunctella* (Clem.), *C. piceaella* (Kearf.).

Hormius tsugae Mason, 1968. Canad. Ent. 100: 724. ♀, ♂.

vulgaris Ashmead. Fla., Mo., Ark. Host: *Psorosina hammondi* (Riley), *Tetralopha robustella* Zell., *T. subcanalis* (Wlkr.).

Hormius vulgaris Ashmead, 1893. Amer. Ent. Soc., Trans. 20: 43. ♀, ♂.

Genus **MONITORIELLA** Hedqvist

Monitoriella Hedqvist, 1963. Ent. Tidskr. 84: 44.

Type-species: *Monitoriella elongata* Hedqvist. Orig. desig.

Taxonomy: Hedqvist, 1963. Ent. Tidskr. 84: 44-49 (key to spp.).

elongata Hedqvist. Tex.; Mexico, Honduras. Ecology: Reared from galls on *Philodendron*.

Monitoriella elongata Hedqvist, 1963. Ent. Tidskr. 84: 46. ♀, ♂.

Genus **NOSERUS** Foerster

Noserus Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 241.

Type-species: *Noserus facialis* Foerster. Orig. desig.

pomifoliellae (Ashmead). Mo. Host: *Bucculatrix pomifoliella* Clem.

Bracon pomifoliellae Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 620. ♂.

Genus **PARAHORMIUS** Nixon

Parahormius Nixon, 1940. Ann. and Mag. Nat. Hist. (11) 5: 473.

Type-species: *Parahormius jason* Nixon. Orig. desig.

Taxonomy: Shenefelt, 1975. Hym. Cat., part 12, p. 1151-1153 (cat. World spp.).

atriceps (Ashmead). Fla., Tex.

Hormius atriceps Ashmead, 1893. Amer. Ent. Soc., Trans. 20: 42. ♀, ♂.

pallidipes (Ashmead). Md., N. C., Colo., Utah, Calif.; Hawaii. Host: *Keiferia lycopersicella* (Wlsm.), *Phthorimaea operculella* (Zell.).

Hormius pallidipes Ashmead, 1893. Amer. Ent. Soc., Trans. 20: 42. ♀.

secundus (Viereck). Kans.

Diachasma secunda Viereck, 1905. Kans. Acad. Sci., Trans. 19: 273. ♀.

trilineatus (Ashmead). Va. Host: *Coleophora laticornella* Clem.

Rhyssalus(!) *trilineatus* Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 629. ♂.

NOMEN NUDUM IN HORMIINI

Hormiogaster slossonae Ashmead, 1900. In Slosson, Ent. News 11: 320.

TRIBE PAMBOLINI

Taxonomy: Hedqvist, 1963. Ent. Tidskr. 84: 30-61 (incl. in Hormiinae).

Genus CHREMYLUS Haliday

Chremylus Haliday, 1833. Ent. Mag. 1: 266.

Type-species: *Chremylus elaphus* Haliday. Monotypic.

Penecerus Wesmael, 1838. Nouv. Mem. Acad. Sci. Bruxelles 11: 70.

Type-species: *Hormius rubiginosus* Nees. Monotypic.

Paramesocrina Nagamori, 1925. Annot. Zool. Jap. 10: 349.

Type-species: *Paramesocrina tineavora* Nagamori. Monotypic.

elaphus Haliday. Conn., N. Y., Fla., Ohio, Mo., S. Dak., Oreg.; Europe, Japan. Host: *Nititinea fuscipunctella* (Haw.), *Tinea peltionella* (L.), *Tineola biselliella* (Hum.).

Chremylus elaphus Haliday, 1833. Ent. Mag. 1: 266.

Hormius rubiginosus Nees, 1834. Hym. Ichn. Aff. Monog., v. 1, p. 156. ♀.

Bracon transversus Say, 1836. Boston Jour. Nat. Hist. 1: 256. ♀.

Chremylus terminalis Ashmead, 1893. Amer. Ent. Soc., Trans. 20: 39. ♀.

Chremylus nigriceps Ashmead, 1893. Amer. Ent. Soc., Trans. 20: 40. ♀, ♂.

Chremylus japonicus Ashmead, 1906. U. S. Natl. Mus., Proc. 30: 200. ♀.

Paramesocrina tineavora Nagamori, 1925. Annot. Zool. Jap. 10: 349.

Biology: Mason, 1948. Ent. Soc. Amer., Ann. 41: 28-40.

NOMEN NUDUM IN CHREMYLUS HALIDAY

Chremylus nigriventris Ashmead, 1905. In Nason, Ent. News 16: 298.

Genus PAMBOLUS Haliday

Pambolus Haliday, 1836. Ent. Mag. 4: 49.

Type-species: *Rogas* (*Pambolus*) *biglumis* Haliday. Monotypic.

Phaenodus Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 241.

Type-species: *Phaenodus pallipes* Foerster. Orig. desig.

Parapambolus Dahl, 1912. Beitr. z. Naturdenkmalpfl. 3: 555.

Type-species: *Parapambolus rufigaster* Dahl. Orig. desig.

Taxonomy: Shenefelt, 1975. Hym. Cat., part 12, p. 1159-1163 (cat. World spp.).

americanus (Ashmead). N. Y. s. to Fla., w. to Kans.

Arraphis americana Ashmead, 1892. Psyche 6: 289. ♂.

Arraphis minuta Ashmead, 1892. Psyche 6: 289. ♂.

Phaenodus caddous Viereck, 1908 (1907). Amer. Ent. Soc., Trans. 33: 403. ♀.

SUBFAMILY ROGADINAE

This is a specialized group of cyclostomate genera in which all species are internal parasites of lepidopterous larvae; pupation takes place within the mummified host larva which often retains its original shape.

Taxonomy: Shenefelt, 1975. Hym. Cat., part 12, p. 1162-1262 (cat. World spp.).

Genus ALEIODES Wesmael

Aleiodes Wesmael, 1838. Nouv. Mem. Acad. Sci. Bruxelles 11: 94.

Type-species: *Aleiodes heterogaster* Wesmael. Desig. by Viereck, 1914.

Schizoides Wesmael, 1838. Nov. Mem. Acad. Sci. Bruxelles 11: 94 (footnote).

Type-species: *Aleiodes heterogaster* Wesmael. Autotypic.

- Taxonomy: Shenefelt, 1975. Hym. Cat., part 12, p. 1163-1185 (cat. World spp.).
- abdominalis* Cresson. Que., N. Y., Pa., D. C., Ohio, Mich., Ill., Iowa, S. Dak.
Aleiodes abdominalis Cresson, 1869. Amer. Ent. Soc., Trans. 2: 379. ♀.
Aleiodes lectus Cresson, 1869. Amer. Ent. Soc., Trans. 2: 379. ♂.
- aciculatus* Cresson. N. Y., Pa., Md., D. C., Fla., Ohio, Iowa, Mo., Ark., La., S. Dak., Colo., Utah.
 Host: *Feltia ducens* Wlkr., *F. subguthica* (Haw.), *Pseudaletia unipuncta* (Haw.).
Aleiodes aciculatus Cresson, 1869. Amer. Ent. Soc., Trans. 2: 381. ♀, ♂.
- parasiticus* Norton. Que. s. to Md., w. to Ont., S. Dak., and Colo. Host: *Syngrapha epigaea* (Grote).
Aleiodes parasiticus Norton, 1869. Amer. Ent. Soc., Trans. 2: 327. ♀.

Genus BUCCULATRIPLEX Viereck

Bucculatriplex Viereck, 1912. U. S. Natl. Mus., Proc. 43: 577.

Type-species: *Bracon bucculatricis* Ashmead. Orig. desig.

There is some evidence that species of this genus depart somewhat from the typical roga-dine biology in that pupation apparently takes place within the host pupa. More studies need to be made to confirm this.

- bucculatricis* (Ashmead). Maine s. to D. C., w. to S. Dak.; Fla., Wash., Oreg. Host: *Bucculatrix ainstiella* Murt., *B. canadensisella* (Chamb.), *Cameraria hamadryadella* (Clem.). Also recorded from *Heterarthrus nemoratus* (Fall.) which needs to be confirmed.
Bracon bucculatricis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 618. ♂.
Bucculatriplex secundus Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 765. ♀.
Ademon leptogaster Fischer, 1965. Polskie Pismo Ent. 35: 198. ♂.

Taxonomy: Marsh, 1974. Ent. Soc. Wash., Proc. 76: 285.

Biology: Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767, p. 65.

Genus CLINOCENTRUS Haliday

Clinocentrus Haliday, 1833. Ent. Mag. 1: 266.

Type-species: *Clinocentrus umbratilis* Haliday. Monotypic.

Neorhyssalus Baker, 1917. Philippine Jour. Sci. 12: 286.

Type-species: *Neorhyssalus compositus* Baker. Orig. desig.

Heterogamoides Fullaway, 1919. Straits Br. Roy. Asiatic Soc., Jour. 80: 43.

Type-species: *Heterogamoides muirii* Fullaway. Orig. desig.

- Taxonomy: Shenefelt, 1975. Hym. Cat., part 12, p. 1187-1193 (cat. World spp.).
- fumiferanae* Muesebeck. N. Y., Minn. Host: *Choristoneura fumiferana* (Clem.).
Clinocentrus fumiferanae Muesebeck, 1965. Ent. News 76: 72. ♀, ♂.
- mellipes* (Ashmead). N. Y., Md., D. C., Va., Ont., S. Dak.
Rhogas mellipes Ashmead, 1891. Canad. Ent. 23: 3. "♂" = ♀.
- tarsalis* Ashmead. N. Y., Ohio, Mo.
Clinocentrus tarsalis Ashmead, 1894. Cincinnati Soc. Nat. Hist., Jour. 17: 47. ♀.

NOMEN NUDUM IN CLINOCENTRUS HALIDAY

Clinocentrus minimus Ashmead, 1905. In Nason, Ent. News 16: 298.

Genus PELECYSTOMA Wesmael

Pelecystoma Wesmael, 1838. Nouv. Mem. Acad. Sci. Bruxelles 11: 91.

Type-species: *Rogas luteus* Nees. Desig. by Foerster, 1862.

Triraphis Ruthe, 1855. Stettin. Ent. Ztg. 16: 292.

Type-species: *Ezothecus discolor* Ruthe. Monotypic.

- Taxonomy: Shenefelt, 1975. Hym. Cat., part 12, p. 1206-1209 (cat. World spp.).
- discoideum* (Cresson). N. Y., Pa., N. J., Md., D. C., Fla., Mich., Ill.
Aleiodes discoideus Cresson, 1869. Amer. Ent. Soc., Trans. 2: 380. ♀.

eupoeyae Ashmead. Fla. Host: *Alarodia slossoniae* (Pack.).

Pelecystoma eupoei(!) Ashmead, 1897. Canad. Ent. 29: 113. ♀.

harrisinae (Ashmead). Pa., Va., N. C., Fla., Ark., Tex.; Mexico, Cuba. Host: *Harrisina americana* (Guer.), *Lithacodes fasciola* (H.-S.).

Rhogas harrisinae Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 632. ♂.

Genus PETALODES Wesmael

Petalodes Wesmael, 1838. Nouv. Mem. Acad. Sci. Bruxelles 11: 123.

Type-species: *Petalodes unicolor* Wesmael. Monotypic.

Taxonomy: Walley, 1941. Canad. Ent. 73: 213-215. —Shenefelt, 1975. Hym. Cat., part 12, p. 1209-1211 (cat. World spp.).

palmatus Walley. Ont., Wis., Minn., Utah, B. C., Calif. Host: *Nycteola cinereana* N. and D.

Petalodes palmatus Walley, 1941. Canad. Ent. 73: 214. ♀.

ufei Walley. B. C., Nev., Calif. Host: *Ufeus plicatus* Grote.

Petalodes ufei Walley, 1941. Canad. Ent. 73: 215. ♀, ♂.

Genus POLYSTENIDEA Viereck

Polystenidea Viereck, 1911. U. S. Natl. Mus., Proc. 40: 186.

Type-species: *Polystenidea parksi* Viereck. Orig. desig.

metacomet Viereck. Conn.

Polystenidea metacomet Viereck, 1911. U. S. Natl. Mus., Proc. 40: 187. ♀.

Polystenidea metacomet Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 238. ♀.

parksii Viereck. Ill., La., Kans., Okla., Tex.

Polystenidea parksi Viereck, 1911. U. S. Natl. Mus., Proc. 40: 186. ♂.

Genus ROGAS Nees

Rogas Nees, 1818. Nov. Act. Acad. Caes. Leop. Car. 9: 306.

Type-species: *Ichneumon testaceus* Fabricius. Desig. by Curtis, 1834.

Rhogas Agassiz, 1846. Nomencl. Zool., Index Univ., p. 325. Emend.

Nebartha Walker, 1860. Ann. and Mag. Nat. Hist. (3) 5: 310.

Type-species: *Nebartha macropodides* Walker. Monotypic.

Camptocentrus Kriechbaumer, 1894. Berl. Ent. Ztschr. 39: 61.

Type-species: *Camptocentrus testaceus* Kriechbaumer. Monotypic.

Taxonomy: Shenefelt, 1975. Hym. Cat., part 12, p. 1215-1256 (cat. World spp.).

atricornis Cresson. S. Dak., Kans., Tex., Ariz. Host: *Protoleucania* sp.

Rogas atricornis Cresson, 1872. Amer. Ent. Soc., Trans. 4: 188. ♀.

autographae Viereck. Idaho, Wash., Oreg., Calif. Host: *Autographa californica* (Speyer).

Rhogas autographae Viereck, 1910. U. S. Natl. Mus., Proc. 38: 381. ♀, ♂.

borealis Thomson. Greenland; Europe.

Rogas (Aleiodes) borealis Thomson, 1891. Opusc. Ent. 16: 1679. ♀.

burrus (Cresson). Conn., Ill., S. Dak.; Mexico. Host: *Acronicta hasta* Guen., *A. lobeliae* Guen.

Aleiodes burrus Cresson, 1869. Amer. Ent. Soc., Trans. 2: 381. ♀, ♂.

carinatus (Ashmead). Tex.

Rhysipolis carinatus Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 625. ♂.

cerurae Ashmead. Calif. Host: *Cerura* sp.

Rhogas cerurae Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 634. ♀, ♂.

cockerelli Viereck. Kans.

Rhogas cockerelli Viereck, 1905. Kans. Acad. Sci., Trans. 19: 266. ♂.

femoratus (Cresson). W. Va.

Aleiodes femoratus Cresson, 1869. Amer. Ent. Soc., Trans. 2: 382. ♀.

fulvus (Cresson). Canada.

Aleiodes fulvus Cresson, 1869. Amer. Ent. Soc., Trans. 2: 381. ♀, ♂.

- fumipennis** (Cresson). N. H., Mass., Conn., N. Y., Del., Mich., Ohio, Tenn., Wis., Ill., Miss., Iowa, Mo. Host: *Cressonia juglandis* (Smith).
Aleiodes fumipennis Cresson, 1869. Amer. Ent. Soc., Trans. 2: 378. ♀.
- geometrae** Ashmead. Iowa, Mo., N. Dak., S. Dak. Host: *Paleacrita vernata* (Peck).
Rhogas geometrae Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 633. ♂.
- granulatus** DeGant. Ohio, Mich.
Rogas granulata DeGant, 1930. Ent. Soc. Wash., Proc. 32: 163. ♀.
- graphicus** Cresson. Iowa, S. Dak., Kans., Tex., Wyo., Colo., N. Mex., Ariz.
Rogas graphicus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 188. ♂.
- harrimani** Ashmead. Alaska.
Rhogas harrimani Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 253. ♂.
- hyphantriae** Gahan. N. B., Maine. Host: *Hyphantria cunea* (Drury).
Rhogas hyphantriae Gahan, 1922. U. S. Natl. Mus., Proc. 61 (24): 1. ♀, ♂.
- Biology: Bogavac, 1955. Plant Prot. (Belgrade), No. 32, p. 17-30. —Tadic, 1959. Internatl. Congr. Crop Prot., Proc. 4, v. 1, p. 874.
- Morphology: Dustan, 1922. Acadian Ent. Soc., Proc. 8: 84-89.
- indianensis** Muesebeck and Walkley. Ind.
Bracon rugulosus Say, 1836. Boston Jour. Nat. Hist. 1: 255. Preocc. by Nees, 1812.
Rogas indianensis Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 171.
 N. name for *rugulosus* Say.
- indicus** Cameron. Alaska.
Rhogas indicus Cameron, 1910. Wien. Ent. Ztg. 29: 3. ♂.
- Taxonomy: Mather, 1957. Zool. Soc. Calcutta, Proc., Mookerjee Mem. Vol., p. 350.
- indiscretus** Reardon. New England(?); India. Liberated in New England but not known to be established. Introduced from India. Host: *Lymantria dispar* (L.).
Rogas indiscretus Reardon, 1970. Ent. Soc. Wash., Proc. 72: 473. ♀, ♂.
- Biology: Reardon, *et al.*, 1973. Environ. Ent. 2: 125-126.
- laphygmae** Viereck. Ga., Fla., La., Tex.; Cuba, Nicaragua. Host: *Pseudaletia unipuncta* (Haw.), *Spodoptera exigua* (Hbn.), *S. frugiperda* (Smith), *S. ornithogalli* (Guen.).
Rogas laphygmae Viereck, 1912. U. S. Natl. Mus., Proc. 43: 581. ♀.
- mandibularis** Cresson. Ohio, Ga., Ill., Miss., Iowa, Ark., Kans., Tex.
Rogas mandibularis Cresson, 1872. Amer. Ent. Soc., Trans. 4: 188. ♂.
- melleus** (Cresson). Mass.
Aleiodes melleus Cresson, 1896. Amer. Ent. Soc., Trans. 2: 382. ♂.
- molestus** Cresson. Ark., La., S. Dak., Tex., Wyo., Utah. Host: *Autographa* sp., *Pseudoplusia includens* (Wlkr.), *Trichoplusia ni* (Hbn.).
Rogas molestus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 188. ♀.
- nigricoxis** Viereck. N. Mex.
Rhogas nigricoxis Viereck, 1903. Amer. Ent. Soc., Trans. 29: 97. ♂.
- nolophanae** Ashmead. Del. s. to N. C. and La., w. to Minn., S. Dak., and Kans. Host: *Balsa malana* (Fitch), *Plathypena scabra* (F.).
Rhogas nolophanae Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 634. ♀.
- Biology: Lentz and Pedigo, 1974. Ent. Soc. Amer., Ann. 67: 678-680.
- perplexus** Gahan. Tex., N. Mex., Ariz., Calif. Host: *Heliothis zea* (Boddie), *Peridroma saucia* (Hbn.), *Trichoplusia ni* (Hbn.).
Rogas perplexus Gahan, 1917. U. S. Natl. Mus., Proc. 53: 205. ♀, ♂.
- platypterygis** Ashmead. Va., Iowa, Md., La. Host: *Drepana arcuata* Wlkr.
Rhogas platypterygis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 633. ♀, ♂.
- politiceps** Gahan. N. C. s. to Fla., w. to Tex. Host: *Anicla infecta* (Ochs.), *Pseudaletia unipuncta* (Haw.).
Rogas politiceps Gahan, 1917. U. S. Natl. Mus., Proc. 53: 206. ♀, ♂.
- pubescens** Ashmead. Wis., Ill.
Rhogas pubescens Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 632. ♂.

- quebecensis* Provancher. Que., Ind., S. Dak.
Rogas quebecensis Provancher, 1880. Nat. Canad. 12: 145. ♀.
- rileyi* (Cresson). N. J., Del., Ohio, Mo., Kans.
Aleiodes Rileyi Cresson, 1869. Amer. Ent. Soc., Trans. 2: 382. ♀, ♂.
- rufocoxalis* Gahan. S. Dak., Colo., Ariz., Calif. Host: *Autoplusia egea* (Guen.), *Peridroma saucia* (Hbn.), *Trichoplusia ni* (Hbn.).
Rogas rufocoxalis Gahan, 1917. U. S. Natl. Mus., Proc. 53: 207. ♀, ♂.
- sanctihyacinthi* Provancher. Que.
Rogas Sancti-Hyacinthi Provancher, 1880. Nat. Canad. 12: 146. ♀.
- scrutator* (Say). U. S., south. Canada. Host: *Choreutis augustella* Clarke, *Ichthyura inclusa* Hbn.
Bracon scrutator Say, 1836. Boston Jour. Nat. Hist. 1: 254. ♀, ♂.
Aleiodes canadensis Cresson, 1869. Amer. Ent. Soc., Trans. 2: 380. ♀.
- simillimus* Ashmead. N. H., S. C., Fla., Ark.
Rhogas simillimus Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 633. ♂.
- stigmator* (Say). Canada, north. U. S. Host: *Acrionicta americana* Harr., *A. dactylina* (Grote), *A. hastulifera* (Smith), *A. oblinita* (Smith), *Alsophila pometaria* (Harr.), *Malacosoma americanum* (F.), *Simyra henrici* Grote.
Bracon stigmator Say, 1824. In Keating, Narr. Long's 2nd Exped. 2: App. p. 323.
Aleiodes intermedius Cresson, 1869. Amer. Ent. Soc., Trans. 2: 380. ♀, ♂.
- terminalis* (Cresson). Canada, U. S. Host: *Anathes smithi* (Snell.), *Nephelodes emmedonia violans* Guen., *Pseudaletia unipuncta* (Haw.), *Spodoptera frugiperda* (Smith), *S. ornithogalli* (Guen.).
Aleiodes terminalis Cresson, 1869. Amer. Ent. Soc., Trans. 2: 379. ♀, ♂.
- Biology: Pennington, 1916. Jour. Econ. Ent. 9: 401-406.
- texanus* (Cresson). Mich., Tex.
Aleiodes texanus Cresson, 1869. Amer. Ent. Soc., Trans. 2: 378. ♀.
- waldeni* (Viereck). Conn.
Aleiodes waldeni Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 236. ♂.

NOMINA NUDA IN ROGAS NEES

- Rhogas desmiae* Ashmead, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 352.
Rhogas fuscicaudus Viereck, 1909. In Withington, Kans. Acad. Sci., Trans. 22: 329.
Rhogas plectypterygia Ashmead, 1905. In Nason, Ent. News 16: 298.

Genus TETRASPHEROPYX Ashmead

- Tetraspheropyx* Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 634.
 Type-species: *Rogas pilosus* Cresson. Monotypic.
pilosus (Cresson). Fla., Tex.; Mexico.
Rogas pilosus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 189. ♀.

Genus YELICONES Cameron

- Yelicones* Cameron, 1887. Biol. Cent.-Amer., Hym., v. 1, p. 387.
 Type-species: *Yelicones violaceipennis* Cameron. Desig. by Viereck, 1914.
Rhopalotoma Cameron, 1911. Timehri 1: 318.
 Type-species: *Rhopalotoma crassitarsis* Cameron. Monotypic.
Pectenopi Fischer, 1961. Naturhist. Mus. Wien., Ann. 64: 156.
 Type-species: *Pectenopi paradoxus* Fischer. Orig. desig.
- Taxonomy: Shenefelt, 1975. Hym. Cat., part 12, p.1261-1262 (cat. World spp.).
- delicatus* (Cresson). N. Y. s. to Fla., w. to Kans. and Tex. Host: *Caristanus decoloralis* (Wlkr.), *Nephopteryx uvinella* (Rag.), *Psorosina hammondi* (Riley).
Rogas delicatus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 189. ♂.

SUBFAMILY METEORIDEINAE

Taxonomy: Capek, 1965 (1964). 12th Internatl. Cong. Ent., Proc., p. 98-99. —Tobias, 1967. Ent. Obozr. 46: 662. —Capek, 1969. Ent. Soc. Wash., Proc. 71: 307.

Genus METEORIDEA Ashmead

Meteoridea Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 129.

Type-species: *Meteoridea longiventris* Ashmead. Orig. desig.

Benama Nixon, 1946. Bul. Ent. Res. 32: 98.

Type-species: *Benama hutsoni* Nixon. Orig. desig.

Until 1965, this genus was placed in the tribe Diospilini, subfamily Helconinae. It was placed in its own subfamily by Capek (1965) on the basis of morphology and biology. Species of *Meteoridea* parasitize larvae of Lepidoptera but pupation takes place within the host pupal case, which is unique among braconid parasites of lepidopterous larvae.

Taxonomy: Shenefelt and Muesebeck, 1957. Ent. Soc. Wash., Proc. 59: 129-130. —Capek, 1965 (1964). 12th Intl. Cong. Ent., Proc., p. 98-99. —Shenefelt, 1970. Hym. Cat., part 5, p. 215-216. (cat. World spp.).

compressiventris Shenefelt and Muesebeck. Wis.

Meteoridea compressiventris Shenefelt and Muesebeck, 1957. Ent. Soc. Wash., Proc. 59: 131. ♀.

longiventris Ashmead. Fla.

Meteoridea longiventris Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 129.

SUBFAMILY HELCONINAE

Host records indicate that species in this group are internal parasites of wood-boring coleopterous larvae.

Taxonomy: Shenefelt, 1970. Hym. Cat., part 5, p. 177-220 (cat. World spp.). —Watanabe, 1972. Insecta Matsumurana 35: 11-16 (review World genera).

TRIBE HELCONINI

Revision: Tobias, 1967. Zool. Inst. Acad. Sci. U. S. S. R., Trans. 41: 222-238 (some Eur. spp.). —Watanabe, 1972. Insecta Matsumurana 35: 1-11 (Jap. spp.).

Genus EUMACROCENTRUS Ashmead

Eumacrocentrus Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 120.

Type-species: *Helcon americanus* Cresson. Orig. desig.

americanus (Cresson). Canada, Conn., N. Y., Pa., Md., W. Va., Mich.

Helcon americanus Cresson, 1873. Canad. Ent. 5: 84. ♀.

Petalodes(?) americanus Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 631. ♂.

Genus HELCON Nees

Helcon Nees, 1814 (1812). Mag. Gesell. Naturf. Freunde Berlin 6: 216.

Type-species: *Helcon tardator* Nees. Desig. by Lepeletier and Serville, 1825. There is a question whether Lepeletier and Serville (1825. In Olivier, Encycl. Method.

10: 42) actually designated *Helcon tardator* as the type-species. However,

Westwood (1839) also designated *tardator* as the type-species of *Helcon*.

Gymnoscelus Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 255.

Type-species: *Helcon tardator* Nees. Orig. desig.

Edyia Cameron, 1905. Straits Branch Roy. Asiat. Soc., Jour. 44: 108. Cameron spelled the generic name *Ediya* on page 108 and *Edyia* on page 109 of the above publication, which appeared in July, 1905. In August, 1905 (Ann. and Mag. Nat. Hist. (7) 16: 159) Cameron again described the genus spelling the name *Edyia*, which is now the accepted spelling.

Type-species: *Edyia annulicornis* Cameron. Monotypic.

Coelostephanus Kieffer, 1911. Soc. Ent. de France, Ann. 80: 232.

Type-species: *Coelostephanus rufus* Kieffer. Monotypic.

Revision: Fahringer, 1933. Ztschr. f. Angew. Ent. 20: 307-323 (Eur. spp.). — Watanabe, 1972. Insecta Matsumurana 35: 2-3 (Jap. spp.)

Taxonomy: Shenefelt, 1970. Hym. Cat., part 5, p. 192-196 (cat. World spp.).

fulvipes Cresson. Alta., Mont., Colo., Utah, B. C., Wash., Oreg., Calif. Host: *Xylotrechus undulatus* (Say).

Helcon fulvipes Cresson, 1865. Ent. Soc. Phila., Proc. 4: 292. ♀.

pedalis Cresson. Canada; Maine s. to N. C.; Wis., Utah, Wash., Oreg. Host: *Callidium antennatum* Newm., *Neoclytus muricatus* (Kby.), *Xylotrechus annosus* (Say).

Helcon pedalis Cresson, 1873. Canad. Ent. 5: 85. ♀, ♂.

texanus Cresson. Tex.

Helcon texanus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 179. ♀.

yukonensis (Ashmead). Ohio, Idaho, Wash., Oreg., Alaska.

Gymnoscelis yukonensis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 656. ♀.

Genus WROUGHTONIA Cameron

Wroughtonia Cameron, 1899. Manchester Lit. and Phil. Soc., Mem. and Proc. 43: 56.

Type-species: *Wroughtonia cornuta* Cameron. Monotypic.

Helconidea Viereck, 1914. U. S. Natl. Mus., Bul. 83: 67.

Type-species: *Helcon aequator* Nees. Orig. desig.

Duportia Kieffer, 1921. Inst. Sci. Saigon, Bul. Agr. 3: 131.

Type-species: *Duportia cincticornis* Kieffer. Orig. desig.

Revision: Watanabe, 1972. Insecta Matsumurana 35: 3-7 (Jap. spp., generic synonymy).

Taxonomy: Shenefelt, 1970. Hym. Cat., part 5, p. 196-201 (cat. World spp.). — Marsh, 1974.

Ent. Soc. Wash., Proc. 70: 287.

borealis (Cresson). Maine, N. Y., Pa., Va., N. C., S. C. Host: *Obrium maculatum* (Oliv.).

Helcon borealis Cresson, 1873. Canad. Ent. 5: 83. ♂.

castaneae (Viereck). Conn., N. C., Ga.

Helcon castaneae Viereck, 1912. U. S. Natl. Mus., Proc. 42: 623. ♀, ♂.

ferruginea (Brues). Pa. s. to Ga.; Ala., Tex., Colo. Host: *Neoclytus acuminatus* (F.),

Phymatodes varius (F.), *Xylobiops basilaris* (Say).

Helcon ferrugineus Brues, 1907. Wis. Nat. Hist. Soc., Bul. 5: 158. ♀.

frigida (Cresson). Mont., Idaho, B. C., Wash., Oreg., Calif.

Helcon frigida Cresson, 1873. Canad. Ent. 5: 84. ♀.

grandis (Ashmead). La.

Helcon grandis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 655. ♀.

ligator (Say). Que. s. to Fla., w. to Ont., N. Dak., and Tex.; Oreg. Host: *Agrilus anxius* Gory,

A. egenus Gory, *Clytopleptus albofasciatus* (L. and G.), *Magdalis armicollis* (Say),

Neoclytus acuminatus (F.), *Obrium maculatum* (Oliv.), *O. rufulum* Gahan, *Xylotrechus*

colonus (F.), *X. quadrimaculatus* (Hald.).

Bracon ligator Say, 1824. In Keating, Narr. Long's 2nd Exped., v. 2, p. 323. ♀.

Helcon dentipes Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 479. ♀.

Helcon albitarsis Cresson, 1873. Canad. Ent. 5: 83. ♂.

necydalis (Cushman). Idaho, B. C., Wash., Oreg., Calif. Host: *Leptura oblitterata* Hald.,

Necydalis laevicollis Lec.

Helconidea necydalis Cushman, 1931. U. S. Natl. Mus., Proc. 79: 10. ♀, ♂.

occidentalis (Cresson). Que., N. B., Maine, N. H., W. Va., N. C., Ont., Mich., Wis., Wyo., Colo.,

Idaho, Nev., B. C., Wash., Oreg., Calif. Host: *Semanotus litigiosus* (Casey), *S. lineus*

(F.), *Tetropium cinnamopteron* Kby., *T. velutinum* Lec.

Helcon occidentalis Cresson, 1865. Ent. Soc. Phila., Proc. 4: 292. ♂.

Helcon tetrapodii Ashmead, 1892. In Hopkins, U. S. Dept. Agr., Insect Life 4: 252. Nom. nud.

TRIBE CENOCOELIINI

Genus CENOCOELIUS Westwood

Cenocoelius Westwood, 1840. Introd. Mod. Classif. Ins., v. 2, Gen. Synop., p. 62.

Type-species: *Cenocoelius flavifrons* Westwood. Monotypic.

Capitonius Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 544.

Type-species: *Capitonius bifasciatus* Brulle. Monotypic.

Laccophrys Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 257.

Type-species: *Laccophrys magdalini* Foerster. Orig. desig.

Aulacodes Cresson, 1865. Ent. Soc. Phila., Proc. 4: 8.

Type-species: *Aulacodes nigriventris* Cresson. Monotypic.

Lestricus Reinhard, 1865. Berlin. Ent. Ztschr. 9: 265.

Type-species: *Alysia rubriceps* Ratzeburg. Desig. by Muesebeck and Walkley, 1951.

Promachus Cresson, 1887. Amer. Ent. Soc., Trans., Sup. Vol., p. 61.

Type-species: *Promachus sanguineiventris* Ashmead. Desig. by Viereck, 1914.

Revision: Rohwer, 1914. Canad. Ent. 46: 316-322 (No. Amer. spp. in genus *Capitonius*).

Taxonomy: Shenefelt, 1970. Hym. Cat., part 5, p. 178-185 (cat. World spp.).

ashmeadii Dalla Torre. Que. s. to Fla., w. to Ont., S. Dak. and Tex. Host: *Hyperplatys aspera* (Say), *H. maculata* Hald., *Neoclytus acuminatus* (F.), *Sternidius alpha alpha* (Say), *S. a. vicinus* (Hald.), *S. cinereus* (Lec.), *S. fascicularis* (Harr.), *Urgleptes facetus* (Say), *U. signatus* (Lec.).

Capitonius rubriceps Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 135. ♀. Preocc. by Ratzeburg, 1844.

Promachus rubriceps Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 653. ♂. Preocc. by Ratzeburg, 1844.

Cenocoelius ashmeadii Dalla Torre, 1898. Cat. Hym., v. 4, p. 72. N. name for *rubriceps* Ashmead.

Capitonius provancheri Rohwer, 1914. Canad. Ent. 46: 321. N. name for *rubriceps* Provancher.

caryae (Rohwer). N. J., Pa., N. C., Mo. The original description states that this species is probably parasitic on *Synoxylon* in hickory. This record needs to be confirmed.

Capitonius caryae Rohwer, 1914. Canad. Ent. 46: 318. ♀.

erythrogastra (Rohwer). N. Y., Pa., W. Va., N. C. Host: *Saperda discoidea* F.

Capitonius erythrogastra Rohwer, 1914. Canad. Ent. 46: 317. ♀.

leptostyli (Rohwer). Pa., Md., Va., N. C., Iowa. Host: *Leptostylus* sp., *Urgleptes signatus* (Lec.).

Capitonius leptostyli Rohwer, 1914. Canad. Ent. 46: 319. ♂.

nigrisoma (Rohwer). N. C., S. C., Ga., Miss., La., Tex. Ecology: Frequently associated with *Dendroctonus frontalis* Zimm.

Capitonius nigrisoma Rohwer, 1914. Canad. Ent. 46: 320. ♀, ♂.

sanguineiventris (Ashmead). Ohio, Mich., Wis., Mo. Host: *Agrilus horni* Kerr., *Oberea schaumii* Lec.

Promachus sanguineiventris Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 653. ♀.

saperdae (Ashmead). Que. s. to Md., w. to S. Dak. and Tex. Host: *Saperda candida* F., *S. discoidea* F., *S. tridentata* Oliv.

Promachus saperdae Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 653.

Coenocelius(!) politifrons Viereck, 1905. Kans. Acad. Sci., Trans. 29: 279. ♂.

tenuicornis (Rohwer). Fla.

Capitonius tenuicornis Rohwer, 1914. Canad. Ent. 46: 321. ♀.

TRIBE DIOSPILINI

This group is very much in need of study and many of the North American species are probably wrongly placed in their present genera.

Genus BAEACIS Foerster

Baeacis Foerster, 1878. Naturh. Ver. Rheinlande, Verh. 35: 70.

Type-species: *Aspigonus abietis* Ratzeburg. Desig. by Viereck, 1914.

One undescribed species occurs in North America.

Genus DIOSPILUS Haliday

Diospilus Haliday, 1833. Ent. Mag. 1: 262.

Type-species: *Diospilus oleraceus* Haliday. Monotypic.

Allochromus Marshall, 1902. Agr. Prat. Pays Chauds 1: 643.

Type-species: *Allochromus trimeroderi* Marshall. Monotypic.

Taxonomy: Shenefelt, 1970. Hym. Cat., part 5, p. 208-214 (cat. World spp.).

californicus Rohwer. Calif.

Diospilus californicus Rohwer, 1917. U. S. Natl. Mus., Proc. 53: 164. ♀.

curticaudus Gahan. La.; Mex. Host: *Altica litigata* Fall.

Diospilus curticaudus Gahan, 1927. U. S. Natl. Mus., Proc. 71 (4): 1. ♀.

fomitis Mason. Que., Ont., Man., Sask. Host: *Dorcatoma falli* White.

Diospilus fomitis Mason, 1968. Canad. Ent. 103: 719. ♀, ♂.

neoclyti Rohwer. Colo. Host: *Neoclytus caprae* (Say).

Diospilus neoclyti Rohwer, 1917. U. S. Natl. Mus., Proc. 53: 165. ♂.

washingtonensis Rohwer. Wash. Host: *Zilora hispida* Lec.

Diospilus washingtonensis Rohwer, 1917. U. S. Natl. Mus., Proc. 53: 163. ♀.

Genus DYSCOLETES Westwood

Dyscolus Haliday, 1837 (1836). Ent. Mag. 4: 39. Preocc. by Dejean, 1831.

Type-species: *Dyscolus lancifer* Haliday. Monotypic.

Dyscoleles Westwood, 1840. Introd. Mod. Classif. Ins., v. 2, Gen. synop., p. 62. N. name for *Dyscolus* Haliday.

Revision: Mason, 1976. Canad. Ent. 108: 855-858.

canadensis Mason. Vt., N. Y., N. C., Ont., Alta., Idaho, B. C., Alaska. Host: *Boreus brunalis* Fitch.

Dyscoleles canadensis Mason, 1976. Canad. Ent. 108: 856. ♀, ♂.

Genus TAPHAEUS Wesmael

Taphaeus Wesmael, 1835. Nouv. Mem. Acad. Sci. Bruxelles 9: 189.

Type-species: *Taphaeus irregularis* Wesmael. Desig. by Viereck, 1914.

Anostenus Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 257.

Type-species: *Taphaeus irregularis* Wesmael. Orig. desig.

polydrusi (Gahan). N. Y. Host: *Polydrusus impressifrons* Gyll.

Diospilus polydrusi Gahan, 1916. N. Y. Agr. Expt. Sta. Geneva, Tech. Bul. 56, p. 23. ♀.

Taxonomy: Marsh, 1974. Ent. Soc. Wash., Proc. 76: 287.

SUBFAMILY ZELEINAE

This group has been placed in the Macrocentrinae and in the Helconinae by various workers. I have chosen to follow Tobias (1967) in giving it subfamily rank. The genus *Zemiotes* was recently taken out of synonymy with *Meteorus* by Mason (1973) and placed as a distinct genus related to *Zele*. The subfamily name correctly spelled Zeleinae is preoccupied in the Hemiptera. The basis for the present spelling, Zeleinae, is a precedent set by Opinion 140 of the International Commission of Zoological Nomenclature, 1943. Species are solitary endoparasites of lepidopterous larvae.

Taxonomy: Tobias, 1967. Ent. Obozr. 46: 661.

Genus ZELE Curtis

Zele Curtis, 1832. Brit. Ent., v. 9, p. 415.

Type-species: *Zele testaceator* Curtis. Orig. desig.

Phylax Wesmael, 1835. Nouv. Mem. Acad. Sci. Bruxelles 9: 159. Preocc. by Dahl, 1823.

Type-species: *Rogas annulicornis* Nees. Desig. by Westwood, 1840.

Homolobus Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 256.

Type-species: *Phylax discolor* Wesmael. Orig. desig.

Phylacter Reinhard, 1863. Berlin. Ent. Ztschr. 7: 248. N. name for *Phylax* Wesmael.

Taxonomy: Shenefelt, 1970. Hym. Cat., part 5, p. 220-227 (cat. World spp.).

mellea (Cresson). No. Amer. Host: *Agrotis venerabilis* Wlkr., *Amathes smithi* (Snell.), *Feltia subterranea* (F.), *Spodoptera frugiperda* (J. E. Sm.), *S. ornithogalli* (Guen.). Other records need confirmation.

Phylax melleus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 178. ♀.

Zelee crassicalcaratus Viereck, 1905. Kans. Acad. Sci., Trans. 19: 259. ♂.

Taxonomy: Marsh, 1974. Ent. Soc. Wash., Proc. 76: 287.

truncator Say. Ind. Type lost; exact placement uncertain.

Bracon truncator Say, 1828. Contrib. Maclur. Lyc. Phila. 1: 78.

Genus ZEMIOTES Foerster

Zemiotes Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 253.

Type-species: *Perilitus albitarsis* Nees. Orig. desig.

Taxonomy: Fischer, 1957. Opusc. Zool., n. 3, p. 1-5 (key to Eur. spp.). — Mason, 1973. Ent. Soc. Wash., Proc. 75: 213-215 (generic reinstatement and transfer).

alaskensis (Ashmead). Canada, N. C., Alaska. Host: *Eupithecia* sp.

Dyscoletes alaskensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 247. ♂.

crassifemur (Muesebeck). Ill., S. Dak., Kans., Tex.

Meteorus crassifemur Muesebeck, 1939. Ent. Soc. Wash., Proc. 41: 84. ♀.

levis (Muesebeck). Wyo., N. Mex., Calif.

Meteorus levis Muesebeck, 1923. U. S. Natl. Mus., Proc. 63: 11. ♀.

maximus (Muesebeck). Maine s. to Ga., w. to Minn., Colo., and Tex.

Meteorus maximus Muesebeck, 1923. U. S. Natl. Mus., Proc. 63: 13. ♀.

niveitarsis (Cresson). N. S. s. to Ga., w. to Ont. and Tenn.; Alaska, Oreg. Host: *Acrobasis betulella* Hulst, *A. comptoniella* Hulst, *A. ostryella* Ely, *A. rubrifasciella* Pack., *A. secundella* Ely, *A. sylviella* Ely, *Nephopteryx subcaesiella* (Clem.), *N. virgatella* (Clem.), *Rheumaptera hastata* (L.).

Perilitus niveitarsis Cresson, 1872. Canad. Ent. 4: 81. ♀, ♂.

pallitarsis (Cresson). Que. s. to Va.; Ohio, Mich.

Perilitus pallitarsis Cresson, 1872. Canad. Ent. 4: 81. ♂.

reticulatus (Muesebeck). Newfoundland, Maine, N. H., Idaho, Alaska, B. C., Wash., Calif. Host: *Semiothisa granitata* (Gn.), *S. sexmaculata* (Pack.).

Meteorus reticulatus Muesebeck, 1923. U. S. Natl. Mus., Proc. 63: 14. ♀, ♂.

SUBFAMILY MACROCENTRINAE

Genus MACROCENTRUS Curtis

Macrocentrus Curtis, 1833. Ent. Mag. 1: 187.

Type-species: *Macrocentrus bicolor* Curtis. Monotypic.

Amicrophus Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 256.

Type-species: *Bracon collaris* Spinola. Orig. desig.

Chaonia Cresson, 1865. Ent. Soc. Phila., Proc. 4: 59. Preocc. by Stephens, 1828. N. syn.

Type-species: *Chaonia xanthostigma* Cresson. Desig. by Viereck, 1914.

Hymenochaonia Dalla Torre, 1898. Wien. Ent. Ztg. 17: 100. N. name for *Chaonia* Cresson. N. syn.

Fhogra Cameron, 1901. New Zeal. Inst., Trans. 33: 104.

Type-species: *Fhogra rubromaculata* Cameron. Monotypic.

Leptozele Cameron, 1910. Tijdschr. v. Ent. 53: 52.

Type-species: *Leptozele trimaculatus* Cameron. Monotypic.

Dolichozele Viereck, 1911. U. S. Natl. Mus., Proc. 40: 182.

Type-species: *Dolichozele koebele* Viereck. Monotypic.

Metapleurodon Enderlein, 1920. Arch. f. Naturgesch. 84 (A) (11): 213.

Type-species: *Macrocentrus ceylonicus* Enderlein. Orig. desig.

Paniscozele Enderlein, 1920. Arch. f. Naturgesch. 84 (A) (11): 214.

Type-species: *Paniscozele sumatrana* Enderlein. Orig. desig.

Pachymerella Enderlein, 1920. Arch. f. Naturgesch. 84 (A) (11): 217.

Type-species: *Pachymerella maculicorax* Enderlein. Orig. desig.

All species are endoparasites of lepidopterous larvae, and the gregarious forms are apparently polyembryonic. Species are frequently caught in light traps.

Revision: Muesebeck, 1932. U. S. Natl. Mus., Proc. 80 (23): 1-55 (No. Amer. spp.). —Eady and Clark, 1964. Ent. Gaz. 15: 97-127 (Eur. spp.).

Taxonomy: Shenefelt, 1969. Hym. Cat., part 4, p. 143-174 (cat. World spp.).

affinis Muesebeck. N. H., N. Y., Mich., Minn., Utah, Idaho.

Macrocentrus affinis Muesebeck, 1932. U. S. Natl. Mus., Proc. 80 (23): 42. ♀.

ancylivorus Rohwer. No. Amer. Host: *Acleris oxycoccana* (Pack.), *Anacampsis* sp., *Ancylistis comptana fragariae* (W. and R.), *Canarsia* sp., *Epiblema strenuatum* (Wlkr.), *Exartema sericorana* Wlsm., *Grapholitha molesta* (Busck), *Halisidota ingens* Hy. Edw., *Homoeosoma electellum* (Hulst), *Melissopus latiferranus* (Wlsm.), *Paralobesia viteana* Clem., *Phalonina hospes* Wlsm., *Phthorinæa operculella* (Zell.), *Rhyacionia frustrana* (Comst.), *Sparganothis sulphurana* (F.), *Stegasta bosqueella* (Chamb.). This species is one of the more important parasites of the oriental fruit moth (*Grapholitha molesta*) and the strawberry leafroller (*Ancylistis comptana fragariae*).

Macrocentrus ancylivorus Rohwer, 1923. Ent. Soc. Wash., Proc. 25: 168. ♀, ♂.

Biology: Fink, 1926. Jour. Agr. Res. 12: 1121-1134. —Daniel, 1932. N. Y. State Agr. Expt. Sta., Tech. Bul. 187, p. 3-101. —Haeussler, 1932. Jour. Agr. Res. 45: 79-100. —Garman and Brigham, 1933. Conn. Agr. Expt. Sta., Bul. 356: 73-116. —Finney, Flanders and Smith, 1947. Hilgardia 17: 437-483. —Allen, 1962. U. S. Dept. Agr., Tech. Bul. 1265, p. 15-24. —Putnam, 1963. Canad. Ent. 95: 1022-1023. The references listed above are only a few of the important ones that have been published. For a complete list of references, see Shenefelt (1969. Hym. Cat., part 4, p. 144-146).

atratus Muesebeck. P. E. I. s. to Fla.; Wis., Iowa, Ariz., B. C.

Macrocentrus atratus Muesebeck, 1932. U. S. Natl. Mus., Proc. 80 (23): 23. ♀.

bradleyi Daniel. N. S., Mich.

Macrocentrus bradleyi Daniel, 1933. Canad. Ent. 65: 25. ♀.

canarsiae Muesebeck. Mass., N. Y., Ont., Ohio, Mich., Iowa, Ark., Kans., S. Dak. Host:

Canarsia sp., *Psorosina hammondi* (Riley).

Macrocentrus canarsiae Muesebeck, 1932. U. S. Natl. Mus., Proc. 80 (23): 26. ♀.

Macrocentrus insularis Muesebeck, 1932. U. S. Natl. Mus., Proc. 80 (23): 27. ♀.

cerasivoranae Viereck. Canada, U. S. Host: *Archips argyrospilus* (Wlkr.), *A. cerasivoranus* (Fitch), *A. fervidanus* (Clem.), *A. infumatus* (Zell.).

Macrocentrus cerasivoranae Viereck, 1912. U. S. Natl. Mus., Proc. 42: 623. ♀, ♂.

clypeatus Muesebeck. N. H. s. to Va.; Mich., Calif.

Macrocentrus clypeatus Muesebeck, 1932. U. S. Natl. Mus., Proc. 80 (23): 28. ♀, ♂.

crambi (Ashmead). N. H., Mass., N. Y., Pa., N. J., Del., Md., Va., Fla., Tenn., Ind., Ill., Ark., La., S. Dak. Host: *Crambus mutabilis* Clem., *C. trisectus* (Wlkr.), *C. zeellus* Fern.

Amicroplus (!) *crambi* Ashmead, 1894. Cincinnati Soc. Nat. Hist., Jour. 17: 48. ♂.

crambivorus Viereck. Canada s. to Fla., w. to Idaho. Host: *Chrysoteuchia topiaria* (Zell.),

Crambus caliginosellus Clem., *C. trisectus* (Wlkr.).

Macrocentrus (Amicroplus) crambivorus Viereck, 1911. U. S. Natl. Mus., Proc. 40: 183. ♀, ♂.

Macrocentrus (Amicroplus) plesius Viereck, 1913. U. S. Natl. Mus., Proc. 44: 556. ♀, ♂.

crassipes Muesebeck. Que., Vt., N. Y., Ont., Sask., Alta., Mont. Host: *Crymodes devastator* (Brace).

Macrocentrus crassipes Muesebeck, 1932. U. S. Natl. Mus., Proc. 80 (23): 13. ♀, ♂.

crocidophorae Muesebeck. N. C., S. C., La. Host: *Crocidophora pustuliferalis* Led.

Macrocentrus crocidophorae Muesebeck, 1932. U. S. Natl. Mus., Proc. 80 (23): 22. ♂.

- cuniculus** Walley. N. B., Ont., Wis., Man., S. Dak., Sask., Mont., Colo., Idaho, Calif. Host: *Petrova albicapitana albicapitana* (Busck), *P. a. arizonensis* (Heinr.), *P. metallica* (Busck).
- Macrocentrus cuniculus** Walley, 1933. Canad. Ent. 65: 260. ♀.
- delicatus** Cresson. Que. s. to Fla., w. to Man. and Tex. Host: *Aristotelia absconditella* (Wlkr.), *Caristanus* sp., *Chionodes* sp., *Epiblema strenuanum* (Wlkr.), *E. tripartitanum* (Zell.), *Episimus argutatus* (Clem.), *Euzophora ostricolorella* Hulst., *Grapholitha molesta* (Busck), *G. tristrigana* (Clem.), *Gretchena bolliana* (Sling.), *Heudecaneura shawiana* (Kearf.), *Laspeyresia pomonella* (L.), *Ostrinia nubilalis* (Hbn.), *Papaipema nebris* (Guen.), *Proteoteras willingana* (Kearf.), *Rhopobota naevana* (Hbn.), *Tetralopha scortealis* (Led.), *T. subcanalis* (Wlkr.). This species is a common parasite of the oriental fruit moth (*Grapholitha molesta*) and the ragweed borer (*Epiblema strenuanum*).
- Macrocentrus delicatus** Cresson, 1872. Amer. Ent. Soc., Trans. 4: 178. ♀, ♂.
- Biology: Allen, 1962. U. S. Dept. Agr., Tech. Bul. 1265, p. 19, 24-25.
- dioryctriae** Muesebeck. Md. s. to Fla.; Miss., Ark. Host: *Dioryctria abietella* (D. and S.), *D. amatella* (Hulst.), *D. clarioralis* (Wlkr.), *D. disculsa* Hein., *Eucosma* sp.
- Macrocentrus dioryctriae** Muesebeck, 1967. Fla. Ent. 50: 60. ♀, ♂.
- exartemae** Walley. Que., Maine, N. J., Ont. Host: *Choristoneura rosaceana* (Harr.), *Exartema cornanum* Heinr., *E. fasciatanum* Clem., *E. footianum* (Fern.), *E. valdanum* McD.
- Macrocentrus exartemae** Walley, 1932. Canad. Ent. 64: 183. ♀.
- grandii** Goidanich. Holartic. Introduced from France, Japan and Korea. Host: *Ostrinia nubilalis* (Hbn.). This species, which is an important parasite of the European corn borer, was incorrectly identified in early introductions to North America as *Macrocentrus gifuensis* Ashmead.
- Macrocentrus grandii** Goidanich, 1937. Inst. Ent. Univ. Bologna, Bol. 9: 196. ♀.
- Taxonomy: Eady and Clark, 1964. Ent. Gaz. 15: 121-122.
- Biology: Parker, 1931. U. S. Dept. Agr., Tech. Bul. 230, p. 1-63 (as *gifuensis* Ashmead). —Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, p. 113 (as *gifuensis* Ashmead).
- gravitarsis** Muesebeck. N. Mex., Oreg., Calif. Host: *Halisidota argentata* Pack., *H. ingens* Hy. Edw.
- Macrocentrus gravitarsis** Muesebeck, 1938. Ent. Soc. Wash., Proc. 40: 170. ♀.
- impressus** Muesebeck. N. S. s. to Fla., w. to Ont., Wis. Host: *Psilocorsis cryptolechiella* (Chamb.), *P. reflexella* Clem.
- Macrocentrus impressus** Muesebeck, 1932. U. S. Natl. Mus., Proc. 80 (23): 24. ♀.
- incompletus** Muesebeck. Sask. s. to Kans. and N. Mex., w. to Alta., Oreg., and Ariz. Host: *Euxoa auxiliaris* (Grote).
- Macrocentrus incompletus** Muesebeck, 1932. U. S. Natl. Mus., Proc. 80 (23): 12. ♀, ♂.
- infumatus** Muesebeck. Mich. Host: *Schoenobius melinellus* (Clem.). The original description of *infumatus* lists *Schoenobius melinellus* only as probably being the host.
- Macrocentrus infumatus** (!) Muesebeck, 1938. Ent. Soc. Wash., Proc. 40: 172. ♂.
- innuitorum** Walley. N. W. T. (Baffin Isl.; Keewatin Dist.).
- Macrocentrus innuitorum** Walley, 1936. Canad. Ent. 68: 187. ♀, ♂.
- instabilis** Muesebeck. Vt. s. to Fla., w. to Ont. and Tex.; Wash. Host: *Acrobasis betulella* Hulst., *A. caryae* Grote, *A. caryivorella* Rag., *A. hebescella* Hulst., *A. juglandis* (LeB.), *A. nuzvorella* Nuenzig, *A. rubrifasciella* Pack., *Coleophora malivorella* Riley, *Grapholitha molesta* (Busck), *Homaledra sabalella* (Chamb.), *Laspeyresia caryana* (Fitch), *L. pomonella* (L.), *Rhyacionia rigidana* (Fern.).
- Macrocentrus instabilis** Muesebeck, 1932. U. S. Natl. Mus., Proc. 80 (23): 34. ♀, ♂.
- Macrocentrus laspeyresiae** Muesebeck, 1932. U. S. Natl. Mus., Proc. 80 (23): 37. ♀, ♂.
- Biology: Nickels, Pierce, and Pinkney, 1950. U. S. Dept. Agr., Tech. Bul. 1011, p. 8-9. —Allen, 1962. U. S. Dept. Agr., Tech. Bul. 1265, p. 26. —Balduf, 1968. Ent. Soc. Amer., Ann. 61: 466.
- iridescentis** French. Que. s. to Mass., w. to B. C. and Calif. Host: *Archips argyrospilus* (Wlkr.), *A. cerasivoranus* (Fitch), *A. rosanus* (L.), *Cheimophila salicella* (Hbn.), *Choristoneura conflictana* (Wlkr.), *C. fractivittana* (Clem.), *C. fumiferana* (Clem.), *C. rosaceana* (Harr.),

- Eunomos subsignarius* (Hbn.), *Harpieteryx frustrella* (Wlsm.), *H. xylostella* (L.), *Spilonota ocellana* (D. and S.).
- Macrocentrus iridescent* French, 1880. *Canad. Ent.* 12: 43. ♀, ♂.
- Macrocentrus amicropoides* Viereck, 1912. *U. S. Natl. Mus., Proc.* 43: 579. ♀, ♂.
- longicornis* Provancher. Que., Mich., Ohio, Minn.
- Macrocentrus longicornis* Provancher, 1880. *Nat. Canad.* 12: 173. ♂.
- marginator* (Nees). Holartic. Host: *Gretchena bolliana* (Sling.), *Laspeyresia cupressana* (Kearf.), *Podosesia syringae fraxini* (Lugger), *Synanthedon americana* (Beut.), *S. castaneae* Busck, *S. exitiosa* (Say), *S. pictipes* (G. and R.), *S. tipuliformis* (Clerck), *Zeiraphera ratzburgiana* Sax.
- Bracon marginator* Nees, 1812 (1811). *Gesell. Naturf. Freunde Berlin, Mag.* 5: 14. ♀.
- Macrocentrus aegeriae* Rohwer, 1915. *Ent. Soc. Wash., Proc.* 17: 56. ♀.
- Taxonomy: Eady and Clark, 1964. *Ent. Gaz.* 15: 113.
- mellipes* Provancher. Que., Mont., B. C.
- Macrocentrus mellipes* Provancher, 1880. *Nat. Canad.* 12: 172. ♀.
- nigridorsis* Viereck. Que. and N. S. s. to D. C., w. to B. C. and Calif. Host: *Archips purpuranus* (Clem.), *Choristoneura conflictana* (Wlkr.), *C. parallela* (Rob.), *Clepis melaleucana* (Wlkr.), *C. persicana* (Fitch), *Ezartema fasciatum* Clem., *E. inornatum* Clem., *Gnorimoschema* sp., *Pyrausta* sp., *Sciaphila duplex* (Wlsm.), *Sparganothis* sp.
- Macrocentrus nigridorsis* Viereck, 1924. *Canad. Ent.* 56: 68. ♀, ♂.
- Macrocentrus harrisi* DeGant, 1930. *Ent. Soc. Wash., Proc.* 32: 164. ♀.
- nigripictus* Muesebeck. Mass., N. J. Host: *Ancylys* sp.
- Macrocentrus nigripictus* Muesebeck, 1932. *U. S. Natl. Mus., Proc.* 80 (23): 31. ♀, ♂.
- nuperus* Cresson. Md., Ga., Tex., Ariz. Host: *Desmia funeralis* (Hbn.).
- Macrocentrus nuperus* Cresson, 1872. *Amer. Ent. Soc., Trans.* 4: 178. ♀.
- pallisteri* DeGant. Mass. s. to Fla., w. to Ont. and Tex.; Alta., Ariz., Calif. Host: *Epiblema obfuscum* Dyar, *E. otiosum* (Clem.), *E. scudderianum* (Clem.), *E. strenuatum* (Wlkr.), *Grapholitha molesta* (Busck), *Ostrinia nubilalis* (Hbn.). The last host mentioned above was listed as questionable in the original catalog.
- Macrocentrus paediscae* Riley, 1891. *U. S. Dept. Agr., Insect Life* 3: 59. Nom. nud.
- Macrocentrus pallisteri* DeGant, 1930. *Ent. Soc. Wash., Proc.* 32: 65. ♀.
- pectoralis* Provancher. Que. s. to N. C.; Ohio, S. Dak.
- Macrocentrus pectoralis* Provancher, 1880. *Nat. Canad.* 12: 173. ♂.
- Macrocentrus fuscipennis* Muesebeck, 1932. *U. S. Natl. Mus., Proc.* 80 (23): 43. ♀.
- peroneae* Muesebeck. Newfoundland, Que., N. B., Maine, Ont., Minn. Host: *Acleris variana* (Fern.), *Archippus packardianus* (Fern.), *Argyrotaenia occultana* Freem., *Choristoneura fumiferana* (Clem.).
- Macrocentrus peroneae* Muesebeck, 1932. *U. S. Natl. Mus., Proc.* 80 (23): 17. ♀.
- pulchripennis* Muesebeck. Idaho, Utah.
- Macrocentrus pulchripennis* Muesebeck, 1932. *U. S. Natl. Mus., Proc.* 80 (23): 40. ♀.
- pyraustae* Viereck. Mass., Conn., N. Y., Md., Mich., Mo. Host: *Macrobotys pertextalis* (Led.), *M. thesusalis* (Wlkr.). The type series for this species is recorded as being only an apparent parasite of *Macrobotys thesusalis*.
- Macrocentrus pyraustae* Viereck, 1917 (1916). *Conn. State Geol. and Nat. Hist. Survey, Bul.* 22, p. 220. ♀.
- reticulatus* Muesebeck. Md. s. to Fla. and Ala.; Mich., Ill.
- Macrocentrus reticulatus* Viereck, 1932. *U. S. Natl. Mus., Proc.* 80 (23): 25. ♀.
- robustus* Muesebeck. Mass., N. Y., N. J., Fla. Host: *Ostrinia nubilalis* (Hbn.), *Tetralopha robustella* Zell.
- Macrocentrus robustus* Muesebeck, 1932. *U. S. Natl. Mus., Proc.* 80 (23): 29. ♀, ♂.
- seminiger* Muesebeck. Utah, Ariz., Calif.
- Macrocentrus seminiger* Muesebeck, 1932. *U. S. Natl. Mus., Proc.* 80 (23): 41. ♀.
- terminalis* (Ashmead). N. H. s. to N. J., w. to Minn. and Mo.; Alta.
- Zele terminalis* Ashmead, 1889 (1888). *U. S. Natl. Mus., Proc.* 11: 652. ♂.

texanus Muesebeck. Ga., Fla., Kans., Tex., Ariz., Mexico.

Macrocentrus texanus Muesebeck, 1932. U. S. Natl. Mus., Proc. 80 (23): 49. ♀.

uniformis Provancher. N. S. s. to Fla., w. to Man. and Kans. Host: *Alypia langtoni* Coup., *A. octomaculata* (F.), *Anavitrinella pampinaria* (Gn.), *Caripeta angustiorata* (Wlkr.), *Plathypena scabra* (F.), *Psychomorpha epimenis* (Drury), *Semiothisa granitata* (Gn.).

Macrocentrus uniformis Provancher, 1880. Nat. Canad. 12: 173. ♀.

utilis Muesebeck. Md., Fla., Ind., Ala., Iowa, Kans. Host: *Ostrinia obumbratalis* (Led.).

Macrocentrus utilis Muesebeck, 1932. U. S. Natl. Mus., Proc. 80 (23): 35. ♀, ♂.

NOMINA NUDA IN MACROCENTRUS CURTIS

Macrocentrus atriceps Cresson, 1909. In Tucker, Kans. Acad. Sci., Trans. 22: 293.

Macrocentrus gelechiae Ashmead, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 59.

Macrocentrus solidaginis Ashmead, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 59.

SUBFAMILY AGATHIDINAE

The genera in this subfamily form a rather homogeneous and uniform group. Between 1917 and 1945, this subfamily went under the name Braconinae due to nomenclatural problems with the type-species of *Cremnops* and *Bracon*. In 1945, use of the name Agathidinae was made possible by the International Commission in its Opinion 162.

All species are endoparasites of lepidopterous larvae.

Revision: Muesebeck, 1927. U. S. Natl. Mus., Proc. 69 (16): 1-73 (No. Amer. spp., as subfamily Braconinae).

Taxonomy: Gahan, 1917. U. S. Natl. Mus., Proc. 53: 197. —Hincks, 1943. Entomologist 76: 221-222. —Marsh, 1961. Ent. Soc. Amer., Ann. 54: 852 (key No. Amer. genera). —Shenefelt, 1970. Hym. Cat., part 6, p. 307-428 (cat. World spp.).

Genus AENIGMOSTOMUS Ashmead

Aenigmostomus Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 128.

Type-species: *Microdus longipalpus* Cresson. Orig. desig.

longipalpus (Cresson). Mass., Ga., Mich., Ind., Ill., Mo., N. Dak., S. Dak., Kans., Wyo., Colo., Idaho, Utah, Wash.

Microdus? longipalpus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 299. ♀.

Genus AGATHIRSIA Westwood

Agathirsia Westwood, 1882. Tijdschr. Ent. 25: 20.

Type-species: *Agathirsia rufula* Westwood. Desig. by Viereck, 1914.

Agathona Westwood, 1882. Tijdschr. Ent. 25: 22.

Type-species: *Agathona sericans* Westwood. Monotypic.

Paragathis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 638.

Type-species: *Microdus thoracicus* Cresson. Monotypic.

Revision: Muesebeck, 1927. U. S. Natl. Mus., Proc. 69 (16): 12-15 (U. S. spp.).

Taxonomy: Shenefelt, 1970. Hym. Cat., part 6, p. 310-311 (cat. World spp.).

cressoni Muesebeck and Walkley. Tex., Colo., N. Mex.

Microdus thoracicus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 181. ♀, ♂. Preocc. in *Microdus* by Nees, 1834.

Agathirsia cressoni Muesebeck and Walkley, 1951. In Muesebeck, et al., U. S. Dept. Agr., Agr. Monog. 2, p. 116. N. name for *thoracicus* Cresson.

nigricauda (Viereck). Tex., Colo., N. Mex., Ariz.

Crassomicrodus nigricaudus Viereck, 1905. Kans. Acad. Sci., Trans. 19: 288. ♂.

testacea Muesebeck. Tex., N. Mex., Ariz., Nev., Calif.; Mex. Host: *Acontia cretata* (G. and R.).

This host, reported by Bibby (1961. Jour. Econ. Ent. 54: 331) needs to be confirmed.

Agathirsia testacea Muesebeck, 1927. U. S. Natl. Mus., Proc. 69 (16): 13. ♀.

Genus AGATHIS Latreille

Agathis Latreille, 1804. Nouv. Dict. Hist. Nat., v. 24, p. 173. No species included.

Type-species: *Agathis malvacearum* Latreille. Subsequent monotypy. First included species, by Latreille, 1805, Hist. Nat. Crust. Ins. 13: 125.

Bassus Fabricius, 1804. Systema Piezatorum, p. 93.

Type-species: *Ichneumon calculator* Fabricius. Desig. by Curtis, 1825.

Microdus Nees, 1814 (1812). Mag. Gesell. Naturf. Freunde Berlin 6: 184.

Type-species: *Ichneumon calculator* Fabricius. Desig. by Westwood, 1839.

Diplozon? Haliday, 1833. Ent. Mag. 1: 263.

Type-species: *Ichneumon calculator* Fabricius. Monotypic.

Microdus subg. *Therophilus* Wesmael, 1837. Nouv. Mem. Acad. Sci. Bruxelles 10: 15.

Type-species: *Microdus (Therophilus) conspicuus* Wesmael. Desig. by Viereck, 1914.

Cenostomus Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 246.

Type-species: *Cenostomus lugubris* Foerster. Orig. desig.

Eumicrodus Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 247. N. name for

Microdus Nees.

Agathiella Szepligeti, 1902. Termes. Fuzetek 25: 73.

Type-species: *Agathiella pedunculata* Szepligeti. Monotypic.

Metriosoma Szepligeti, 1902. Termes. Fuzetek 25: 74.

Type-species: *Metriosoma munda* Szepligeti. Monotypic.

Neomicrodus Szepligeti, 1908. Mus. Nat. Hungarici, Ann. 6: 421.

Type-species: *Neomicrodus boliviensis* Szepligeti. Monotypic.

Lissagathis Cameron, 1911. Nova Guinea 9 (Zool. 2) Hym., p. 245.

Type-species: *Lissagathis bicarinata* Cameron. Monotypic.

Bassus subg. *Aerophilopsis* Viereck, 1913. U. S. Natl. Mus., Proc. 44: 555.

Type-species: *Bassus (Aerophilopsis) erythrogaster* Viereck. Orig. desig.

Ioxia Enderlein, 1920 (1918). Arch. f. Naturgesch. 84 (A) (11): 199.

Type-species: *Ioxia faceta* Enderlein. Orig. desig.

Alabagrus Enderlein, 1920 (1918). Arch. f. Naturgesch. 84 (A) (11): 203.

Type-species: *Alabagrus citreistigma* Enderlein. Orig. desig.

Ditropia Enderlein, 1920 (1918). Arch. f. Naturgesch. 84 (A) (11): 210.

Type-species: *Ditropia strigata* Enderlein. Orig. desig.

Liyptia Enderlein, 1920 (1918). Arch. f. Naturgesch. 84 (A) (11): 210.

Type-species: *Liyptia rufiventris* Enderlein. Orig. desig.

Agathellina Enderlein, 1920 (1918). Arch. f. Naturgesch. 84 (A) (11): 211.

Type-species: *Agathellina columbiana* Enderlein. Orig. desig.

Revision: Muesebeck, 1927. U. S. Natl. Mus., Proc. 69 (16): 22-70 (No. Amer. spp.). — Telenga, 1955. Fauna U.S.S.R., v. 5, n. 4, p. 244-267 (Eur. spp.).

Taxonomy: Muesebeck, 1927. U. S. Natl. Mus., Proc. 69 (16): 22. — Hincks, 1943. Entomologist 76: 223. — Shenefelt, 1970. Hym. Cat., part 6, p. 311-366 (cat. World spp.).

abdominalis (Muesebeck). Mich., Fla., S. Dak., La., Tex., Colo., Ariz.

Bassus abdominalis Muesebeck, 1927. U. S. Natl. Mus., Proc. 69 (16): 35. ♀, ♂.

aciculata (Ashmead). Tex., Ariz.

Microdus aciculatus Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 639. ♀, ♂.

acrobasis (Cushman). N. J. s. to Fla.; Miss., La., N. Dak., Kans., Tex., Colo., N. Mex. Host:

Acrobasis caryae Grote, *A. caryivorella* Rag., *A. evanescentella* Dyar, *A. exsulella* (Zell.), *A. juglandis* (Le B.), *A. nuxvorella* Neunzig, *A. pepifera* Dyar, *A. stigmella* Dyar, *Blastodacna curvilineella* (Chamb.), *Choristoneura fumiferana* (Clem.), *C. houstonana* (Grote), *Laspeyresia ingens* Heinr., *Rhyacionia frustrana* (Comst.).

Bassus acrobasis Cushman, 1920. U. S. Natl. Mus., Proc. 58: 289. ♀, ♂.

Biology: Nickels, Pierce and Pinkney, 1950. U. S. Dept. Agr., Tech. Bul. 1011, p. 6-8.

agilis (Cresson). Que. s. to Fla., w. to Alta. and Tex. Host: *Acleris minuta* Rob., *Archips cerasivoranus* (Fitch), *A. fervidanus* (Clem.), *A. infumatanus* (Zell.), *A. rileyanus* (Grote), *Aristotelia absconditella* Wlkr., *Epiblema strenuatum* (Wlkr.), *Homona*

- fervidana* Wlkr., *Microbotys theseusalis* (Wlkr.), *Ostrinia nubilalis* (Hbn.), *O. obumbratalis* (Led.), *Pyrausta futilalis* (Led.), *Spilonota ocellana* (D. and S.).
Microdus agilis Cresson, 1873. Canad. Ent. 5: 52. ♀.
Agathis quaesitor Provancher, 1880. Nat. Canad. 12: 176. ♀.
- annulipes** (Cresson). No. Amer. Host: *Acrobasis* sp., *Anacampsis innocuella* (Zell.), *Ancylistis comptana* (Froel.), *Archips semiferanus* (Wlkr.), *Coelostathma discopunctana* Clem.(?), *Choristoneura conflictana* (Wlkr.), *Eumaroza malachitana* (Zell.), *Grapholitha interstinctana* (Clem.), *Laspeyresia caryana* (Fitch), *Paralobesia viteana* Clem., *Proteoteras moffatiana* Fern., *Sciaphila duplex* (Wlsm), *Strepsicrates smithiana* (Wlsm.).
Microdus annulipes Cresson, 1873. Canad. Ent. 5: 53. ♀.
Microdus earinoides Cresson, 1873. Canad. Ent. 5: 54. ♀.
Microdus grapholithae Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 639. ♀.
Microdus albocinctus Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 639. ♀.
Bassus waldeni Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 229. ♀.
- atripes** Cresson. Colo., N. Mex., Utah, Idaho, Nev., Ariz., B. C., Wash., Calif.
Agathis atripes Cresson, 1865. Ent. Soc. Phila., Proc. 4: 296. ♂.
- azygos** (Viereck). S. Dak., Kans., Tex., Ariz.
Lytopylus azygos Viereck, 1905. Kans. Acad. Sci., Trans. 19: 267. ♀.
Microdus agathoides Viereck, 1905. Kans. Acad. Sci., Trans. 19: 277. ♀.
- bakeri** (Muesebeck). Mich., Minn., Colo., Alaska, Wash., Calif.
Bassus bakeri Muesebeck, 1927. U. S. Natl. Mus., Proc. 69 (16): 42. ♀.
- binominata** Muesebeck. Que. and Ont. s. to Va. Host: *Choristoneura fumiferana* (Clem.), *Coleophora laricella* Hbn., *Coleotechnites coniferella* Kearf., *C. piceaella* (Kearf.), *Epiblema desertana* (Zell.), *Epinotia nanana* (Treits.), *Petrova comstockiana* (Fern.), *Phalonia rutilana* Hbn., *Rhyacionia buoliana* (Schiff.).
Microdus bicolor Provancher, 1880. Nat. Canad. 12: 179. ♀. Preocc. by Brulle, 1846.
Agathis binominata Muesebeck, 1958. In Krombein, U. S. Dept. Agr., Agr. Monog. 2, Sup. 1, p. 26. N. name for *bicolor* Provancher.
- brevicornis** (Muesebeck). Man., Idaho, Utah, Oreg., Nev., Calif.
Bassus brevicornis Muesebeck, 1927. U. S. Natl. Mus., Proc. 69 (16): 56. ♀, ♂.
- buttricki** (Viereck). Maine s. to Fla., w. to S. Dak., Colo., and Tex. Host: *Acrobasis rubrifasciella* Pack., *Homoeosoma electellum* (Hulst.), *Isophrictitis* sp., *Phalonia rutilana* Hbn., *P. straminoides* Grote, *P. vorcana* Kearf.
Bassus (Lytopylus) buttricki Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 229. ♀.
- calcarata** (Cresson). Que. s. to Fla.; Ont., Minn., Wis., Mich., Mo., Tex. Host: *Acrobasis betulella* Hulst., *A. caryalbella* Ely, *A. caryivorella* Rag., *A. comptoniella* Hulst., *A. indiginella* (Zell.), *A. minimella* Rag., *A. rubrifasciella* Pack., *A. stigmella* Dyar, *Croesia albicomana* (Clem.), *Epismus argutus* (Clem.), *Ezartema permandanum* Clem., *E. sericoranthum* Wlsm., *Spilocorsis* sp., *Sparganothis sulphurana* (F.).
Microdus calcaratus Cresson, 1873. Canad. Ent. 5: 51. ♀.
- Biology: Balduf, 1966. Ent. Soc. Amer., Ann. 59: 1038-1049.
- californica** (Muesebeck). Idaho, Oreg., Calif.
Bassus californicus Muesebeck, 1927. U. S. Natl. Mus., Proc. 69 (16): 64. ♀, ♂.
- cincta** (Cresson). Que. s. to Fla., w. to N. Dak. and Kans.; Oreg. Host: *Acleris* sp., *Anacampsis fragariella* Busek, *Argyrotaenia velutiana* (Wlkr.), *Chrysopora hermannella* (F.), *Cnephasia longana* (Haw.), *Coleophoraalniella* Heinr., *C. atlantica* Heinr., *C. cinerella* Chamb., *C. fuscadinella* Zell., *C. laricella* Hbn., *C. salicivorella* McD., *C. tiliaefoliella* Clem., *C. ulmifoliella* McD., *Dichomeris ligulella* (Hbn.), *Grapholitha molesta* (Busek.), *Homadula anisocentra* (Merg.), *Nephotyryx* sp., *Platynota idaeusalis* (Wlkr.), *Scrobipalpa atriplicella* (Rosler.).
Microdus cinctus Cresson, 1873. Canad. Ent. 5: 53. ♀, ♂.
Microdus pimplioides Viereck, 1905. Kans. Acad. Sci., Trans. 19: 276. ♂.

- Bassus winkleyi* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 229. ♀.
- coleophorae** (Rohwer). Conn., Pa., Va., W. Va., Idaho. Host: *Coleophora laricella* Hbn., *C. leucochrysell* Clem., *C. malivorella* Riley.
- Bassus coleophorae* Rohwer, 1915. U. S. Natl. Mus., Proc. 49: 230. ♀.
- Bassus pyrifolii* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 229. ♀.
- conspicua** (Wesmael). Mass., Conn., Pa., Del., Md., Va., W. Va., Ind.; Europe. Host: *Grapholitha molesta* (Busck), *Laspeyresia pomonella* (L.). Introduced also into Wash. from Del. but apparently not established.
- Microdus (Therophilus) conspicuus* Wesmael, 1837. Nouv. Mem. Acad. Sci. Bruxelles 10: 17. ♀, ♂.
- Earinus zonatus* Marshall, 1885. Roy. Ent. Soc. London, Trans. 1885: 268. ♂.
- Bassus carpocapsae* Cushman, 1915. U. S. Natl. Mus., Proc. 48: 508. ♀.
- crassicornis** (Muesebeck). Fla., Iowa.
- Bassus crassicornis* Muesebeck, 1927. U. S. Natl. Mus., Proc. 69 (16): 43. ♀.
- cupressi** Muesebeck and Walkley. N. Mex., Idaho, Calif.
- Bassus parvus* Muesebeck, 1932. Wash. Acad. Sci., Jour. 22: 331. ♀, ♂. Preocc. by Viereck, 1903.
- Agathis cupressi* Muesebeck and Walkley, 1951. In Muesebeck, et al., 1951, U. S. Dept. Agr., Agr. Monog. 2, p. 119. N. name for *parvus* Muesebeck.
- difficilis** (Muesebeck). N. C., Ga., Fla., Miss., Ark., La., Tex. Host: *Acrobasis indigenella* (Zell.), *Nephoteryx crassifasciella* Rag., *N. subcaesiella* (Clem.), *N. uvinella* (Rag.).
- Bassus difficilis* Muesebeck, 1927. U. S. Natl. Mus., Proc. 69 (16): 46. ♀, ♂.
- dimidiator** (Nees). Que. s. to D. C., w. to Ont. and Mo.; Alta., Wash., Oreg.; Europe. Host: *Acleris variata* (Fern.), *Archips cerasivoranus* (Fitch), *Spilonota ocellana* (D. and S.). This species is a common parasite of the eyespotted bud moth, *Spilonota ocellana*, in Europe and North America; several more hosts have been recorded in the literature for North America (under the name *laticinctus* Cresson) but most need to be confirmed.
- Microdus dimidiator* Nees, 1834. Hym. Ichn. Aff. Monog., v. 1, p. 146. ♀.
- Microdus laticinctus* Cresson, 1873. Canad. Ent. 5: 53. ♂.
- Microdus ocellanae* Richardson, 1913. Canad. Ent. 45: 211. ♀.
- Taxonomy: Sadava and Miller, 1967. Canad. Ent. 99: 441 (syn. of *laticinctus*).
- Biology: Silvestri, 1922. Lab. Zool. Agr. Portici, Bol. 16: 272. —Dondale, 1954. Canad. Ent. 86: 40-44 (as *laticinctus*). —Stultz, 1954. Canad. Ent. 86: 96-98 (as *laticinctus*).
- discolor** (Cresson). Mass. s. to Fla., w. to Mich., Iowa and Tex. Host: *Ancylics comptana* (Froel.), *Lineodes interrupta* (Zell.).
- Microdus discolor* Cresson, 1873. Canad. Ent. 5: 52. ♀, ♂.
- Bassus brittoni* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 229. ♀.
- diversa** (Muesebeck). Conn., N. Y., N. J., Va., Mich., Ohio, Ind.; Japan. Introduced from Japan. Host: *Grapholitha molesta* (Busck).
- Bassus diversus* Muesebeck, 1933. Ent. Soc. Wash., Proc. 35: 48. ♀.
- Biology: Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, p. 72-73. —Allen, 1962. U. S. Dept. Agr., Tech. Bul. 1256, p. 30-31.
- erythrogaster** (Viereck). Conn. s. to Ga., w. to Mich., Kans., and La. Host: *Epiblema strenuatum* (Wlkr.).
- Bassus (Aerophilopsis) erythrogaster* Viereck, 1913. U. S. Natl. Mus., Proc. 44: 555. ♂.
- festiva** Muesebeck. N. Y., N. J.; China, India. Introduced from China. Host: *Grapholitha molesta* (Busck), *G. pruinivora* (Walsh).
- Agathis festiva* Muesebeck, 1953. Ent. Soc. Wash., Proc. 55: 149. ♀, ♂.
- Biology: Allen, 1962. U. S. Dept. Agr., Tech. Bul. 1265, p. 31-34.
- floridana** (Muesebeck). Fla.
- Bassus floridanus* Muesebeck, 1927. U. S. Natl. Mus., Proc. 69 (16): 31. ♂.

- gibbosa* (Say). No. Amer. Host: *Coleophora* sp., *Keiferia inconspicuell* (Murtf.), *Mompha eloisella* Clem., *M. stellata* Busck, *Papaipema nebris* f. *nitela* (Guen.), *Phthorimaea operculella* (Zell.), *Stomopteryx* sp., *Strobisia iridipennella* Clem.
Bassus gibbosus Say, 1836. Boston Jour. Nat. Hist. 1: 250. ♀.
Microdus pygmaeus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 182. ♀, ♂.
Agathis scrutator Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 137. ♀.
Microdus dispar Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 138. ♀.
Microdus meridionalis Viereck, 1903. Amer. Ent. Soc., Trans. 29: 96. ♂.
Microdus wichitaensis Viereck, 1905. Kans. Acad. Sci., Trans. 19: 276. ♀.
Microdus castaneicinctus Viereck, 1905. Kans. Acad. Sci., Trans. 19: 276. ♀.
 Biology: Odebiyi and Oatman, 1972. Ent. Soc. Amer., Ann. 65: 1104-1114.
- imitata* (Cresson). Mass., N. Y.
Microdus imitatus Cresson, 1873. Canad. Ent. 5: 51. ♀.
- immaculata* (Gahan). La., Tex. Host: *Symmetrischema striatella* (Murtf.) ?. Host needs to be confirmed.
Bassus immaculatus Gahan, 1919. U. S. Natl. Mus., Proc. 55: 118. ♀.
- laticeps* (Muesebeck). Mass., D. C., Tex., Ariz.
Bassus laticeps Muesebeck, 1927. U. S. Natl. Mus., Proc. 69 (16): 53. ♀.
- malivorellae* Shenefelt. Maine, W. Va. Host: *Coleophora malivorella* Riley.
Bassus brevicauda Muesebeck, 1932. Wash. Acad. Sci., Jour. 22: 332. ♀. Preocc. by Reinhard, 1867.
Agathis malivorellae Shenefelt, 1970. Hym. Cat., part 6, p. 342. N. name for *brevicauda* Muesebeck.
- marginatifrons* (Muesebeck). Ala.
Bassus marginatifrons Muesebeck, 1927. U. S. Natl. Mus., Proc. 69 (16): 30. ♀.
- metzneriae* Muesebeck. Que., N. H., Mass., Conn., N. Y., Ohio, Mich., N. Dak. Host: *Metzneria lappella* (L.).
Agathis metzneriae Muesebeck, 1967. In Juhala, Ent. Soc. Amer., Ann. 60: 95. ♀, ♂.
 Biology: Juhala, 1967. Ent. Soc. Amer., Ann. 60: 95-97.
- nigricoxa* (Provancher). Ont., N. B., N. Y., N. J., Pa., Mich.
Microdus nigricoxus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 138. ♀.
- nigripes* Cresson. Mass., Fla.; N. Dak. s. to Kans. and N. Mex., w. to Alta., Wash., Oreg., and Calif. Host: *Phaneta bucephaloides* (Wlsm.).
Agathis nigripes Cresson, 1865. Ent. Soc. Phila., Proc. 4: 297. ♀.
Agathis nigriceps Provancher, 1895. Nat. Canad. 22: 96. ♀.
Agathis wyomingensis Viereck, 1905. Kans. Acad. Sci., Trans. 19: 284. ♀.
- nigrotrochanterica* (Viereck). Ga., Fla., Kans., Ariz.
Microdus nigrotrochantericus Viereck, 1905. Kans. Acad. Sci., Trans. 19: 275. ♀.
- ninanae* (Muesebeck). Ariz., Calif. Host: *Laspeyresia ninana* (Dyar).
Bassus ninanae Muesebeck, 1927. U. S. Natl. Mus., Proc. 69 (16): 48. ♀, ♂.
- nucicola* (Muesebeck). Wash., Oreg., Calif. Host: *Melissopus latiferranus* (Wlsm.).
Bassus nucicola Muesebeck, 1940. Ent. Soc. Wash., Proc. 42: 91. ♀, ♂.
 Biology: Dohanian, 1942. Jour. Econ. Ent. 35: 386-387.
- perforator* Provancher. Que. s. to D. C., w. to Alta. and S. Dak.
Agathis perforator Provancher, 1880. Nat. Canad. 12: 177. ♀.
Agathis femorator Provancher, 1880. Nat. Canad. 12: 177. ♀.
Bracon (*Agathis*) *sassacus* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 231. ♀, ♂.
Bracon (*Agathis*) *bradfordensis* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 231. ♂.
- petiolata* (Muesebeck). N. Mex.
Bassus petiolatus Muesebeck, 1932. Wash. Acad. Sci., Jour. 22: 332. ♀, ♂.
- pini* (Muesebeck). Maine s. to Va. and Ohio. Host: *Evetria* sp., *Petrova comstockiana* (Fern.), *P. honseri* Miller, *Rhyacionia frustrana* (Comst.).
Bassus pini Muesebeck, 1940. Ent. Soc. Wash., Proc. 42: 92. ♀.

- Biology: Miller, 1953. Ohio Jour. Sci. 53: 62.
- pumila** (Ratzeburg). P. E. I. s. to Pa., w. to Ont. and Wis.; Mont., Idaho; Europe. Introduced from Europe. Host: *Coleophora laricella* Hbn.
- Microdus pumilus* Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 57. ♀, ♂.
- Biology: Dowden, 1962. U. S. Dept. Agr., Agr. Handb. 226, p. 47.
- quebecensis** (Provancher). Que.
- Microdus quebecensis* Provancher, 1880. Nat. Canad. 12: 178. ♀.
- reticulata** (Muesebeck). Ill., Mo., Kans.
- Bassus reticulatus* Muesebeck, 1932. Wash. Acad. Sci., Jour. 22: 332. ♀, ♂.
- rubripes** Cresson. Mass. s. to Fla., w. to Ont. and La.; Wyo., Idaho, Calif. Host: *Coleophora cratipennella* Clem., *Grapholitha molesta* (Busck).
- Agathis rubripes* Cresson, 1872. Amer. Ent. Soc., Trans. 4: 183. ♀.
- rufomemorata** (Muesebeck). Ohio, Fla., Iowa, Ark., Nebr., Kans.
- Bassus rufomemoratus* Muesebeck, 1927. U. S. Natl. Mus., Proc. 69 (16): 36. ♀.
- rugareolata** (Viereck). Conn.
- Bassus rugareolatus* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 229. ♂.
- sancta** (Say). Mass. s. to Fla., w. to Mich., Nebr., and Tex. Host: *Macrobtys pertextalis* (Led.).
- Bassus sanctus* Say, 1836. Boston Jour. Nat. Hist. 1: 249. ♀.
- semirubra** Brulle. Pa.
- Agathis semi-rubra* Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 494. ♂.
- simillima** (Cresson). Mass. s. to Fla., w. to Ont., S. Dak., and Kans.; Wash. Host: *Epiblema carolinana* (Wlsm.), *E. obfuscanum* Dyar, *E. otiosanum* (Clem.), *E. scudderianum* (Clem.), *E. strenuanum* (Wlkr.), *Grapholitha tristrigana* Clem., *Papaipema nebris* (Guen.).
- Microdus smillimus* Cresson, 1873. Canad. Ent. 5: 51. ♀, ♂.
- spiracularis** (Muesebeck). U. S.; Mex. Host: *Cogia hippalus outis* (Skin.), *Erynnis zarucco* (Luc.), *Gesta gesta* (H.-S.), *Systasea pulverulenta* (Feld.).
- Bassus spiracularis* Muesebeck, 1927. U. S. Natl. Mus., Proc. 69 (16): 38. ♀.
- stigmatera** (Cresson). Fla., La.; West Indies, So. Amer. Introduced from Argentina. Host: *Diatraea saccharalis* (F.).
- Microdus stigmaterus* Cresson, 1865. Ent. Soc. Phila., Proc. 4: 65. ♀, ♂.
- Microdus diatraeae* Turner, 1918. Bul. Ent. Res. 9: 82. ♀.
- Microdus crossi* Brethes, 1927. Rev. Indus. Agr. Tucuman 17: 163. ♀.
- Alabagrus citreistigma* Enderlein, 1920 (1918). Arch. f. Naturgesch. 84: 203. ♀.
- Biology: Myers, 1932. Roy. Ent. Soc. London, Trans. 80: 125-126. —Jaynes, 1933. U. S. Dept. Agr., Tech. Bul. 363, p. 18-19. —Wilson, 1941. Fla. Ent. 24: 55-57.
- tenuiceps** (Muesebeck). Ariz.
- Bassus tenuiceps* Muesebeck, 1927. U. S. Natl. Mus., Proc. 69 (16): 47. ♀, ♂.
- terminata** (Cresson). S. Dak., Nebr., Okla., Tex., Colo. Host: *Isophrictis* sp., *Pyroderces rileyi* (Wlsm.).
- Microdus terminatus* Cresson, 1865. Ent. Soc. Phila., Proc. 4: 298. ♂.
- Orgilus terminalis* Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 640. ♂.
- Microdus terminator* Dalla Torre, 1898. Cat. Hym., v. 4, p. 136. Emend.
- texana** (Cresson). N. Y. s. to Fla., w. to Kans. and Tex. Host: *Microthyris anormalis* (Guen.), *Pachyzancla thesialis* Wlkr., *Pantographa limata* G. and R., *Pilema periusalis* (Wlkr.), *Pilocrocis ramentalis* (Led.), *P. tripunctata* (F.)?, *Sylepta silicalis* (Gn.), *Syngamia haemorrhoidalis* (Guen.).
- Microdus texanus* Cresson, 1872. Amer. Ent. Soc., Trans. 4: 181. ♂.
- Biology: Needham, 1955. Ecology 36: 349-350.
- tibiator** Provancher. Canada and U. S. except southeast states.
- Agathis tibiator* Provancher, 1880. Nat. Canad. 12: 177. ♀.
- Agathis parvus* Viereck, 1903. Amer. Ent. Soc., Trans. 29: 96. ♀, ♂.
- Bracon* (*Agathis*) *solidaginis* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 231. ♂.

- unicolor** (Schrottky). Calif.; Argentina. Liberated in Calif. but not known to be established. Introduced from Argentina. Host: *Phthorimaea operculella* (Zell.).
Orgilus unicolor (Schrottky), 1902. Mus. Nac. Hist. Nat. B. Aires, An. 8: 102. ♀.
Agathis unicolorata Shenefelt, 1970. Hym. Cat., part 6, p. 364. Unnecessary n. name for *unicolor* Schrottky.
- usitata** (Gahan). Mass. Host: *Acrobasis vaccinii* Riley.
Bassus usitatus Gahan, 1919. U. S. Natl. Mus., Proc. 55: 119. ♀, ♂.
- verticalis** (Cresson). Tex.
Microdus verticalis Cresson, 1872. Amer. Ent. Soc., Trans. 4: 182. ♀.

NOMINA NUDA IN AGATHIS LATREILLE

- Microdus johnsoni* Ashmead, 1900 (1899). In Smith, Ins. of N. J., p. 592.
Microdus latiannulipes Ashmead, 1902. In Slosson, Ent. News 13: 6.
Microdus solidaginis Ashmead, 1900 (1899). In Smith, Ins. of N. J., p. 592.
Microdus tortricus Ashmead, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 17.
Microdus tricoloripes Ashmead, 1902. In Slosson, Ent. News 13: 6.

Genus CRASSOMICRODUS Ashmead

- Crassomicrodus* Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 128.
 Type-species: *Microdus fulvescens* Cresson. Orig. desig.
- Epimicrodus* Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 129.
 Type-species: *Microdus divisus* Cresson. Orig. desig. Cited as *diversus* by Ashmead.
- Revision: Muesebeck, 1927. U. S. Natl. Mus., Proc. 69 (16): 15-22 (U. S. spp.).
- Taxonomy: Shenefelt, 1970. Hym. Cat., part 6, p. 380-382 (cat. World spp.).
- apicipennis** Muesebeck. Iowa, Mo., Tex., Mont., Wyo., Oreg., Calif.
Crassomicrodus apicipennis Muesebeck, 1927. U. S. Natl. Mus., Proc. 69 (16): 18. ♀, ♂.
- divisus** (Cresson). Mass. s. to Fla., w. to Ont., Colo., and Ariz.
Microdus divisus Cresson, 1873. Canad. Ent. 5: 52. ♂.
Orgilus rileyi Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 640. ♀.
Microdus diversus(!) Cresson: Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 129.
- fulvescens** (Cresson). Kans. and Tex., w. to Wash. and Calif.; Mexico.
Microdus fulvescens Cresson, 1865. Ent. Soc. Phila., Proc. 4: 297. ♀.
- medius** (Cresson). Iowa, Kans., Tex., Colo., N. Mex., Ariz., Idaho, Wash.
Microdus medius Cresson, 1865. Ent. Soc. Phila., Proc. 4: 298. ♂.
- muesebecki** Marsh. Nev., Calif.
Crassomicrodus muesebecki Marsh, 1960. Pan-Pacific Ent. 36: 153. ♀, ♂.
- nigriceps** (Cresson). Tex., Colo., Calif.
Microdus nigriceps Cresson, 1872. Amer. Ent. Soc., Trans. 4: 182. ♀.
- nigrithorax** Muesebeck. Colo., Nev., Calif.; Mexico.
Crassomicrodus nigrithorax Muesebeck, 1927. U. S. Natl. Mus., Proc. 69 (16): 17. ♀, ♂.
- pallens** (Cresson). Mass. s. to Fla., w. to Ill. and Tex.; Calif.
Microdus pallens Cresson, 1873. Canad. Ent. 5: 53. ♂.

Genus CREMNOPS Foerster

- Cremnops* Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 246.
 Type-species: *Agathis deflagrator* Nees. Orig. desig.
- Bracon* of authors, not Fabricius refers to *Cremnops* Foerster. See Opinion 162, International Commission on Zoological Nomenclature, 1945.
- Revision: Morrison, 1917. U. S. Natl. Mus., Proc. 52: 305-343 (No. Amer. spp.). — Marsh, 1961. Ent. Soc. Amer., Ann. 54: 851-861 (No. Amer. spp.).
- Taxonomy: Shenefelt, 1970. Hym. Cat., part 6, p. 382-391 (cat. World spp.).
- ashmeadi** (Morrison). Md., Ky., Ind., Ill., Minn., Iowa, S. Dak., Kans., Alta.
Bracon ashmeadi Morrison, 1917. U. S. Natl. Mus., Proc. 52: 329. ♀, ♂.

- californicus** (Morrison). Wyo. s. to N. Mex., w. to Wash. and Calif.
Bracon californicus Morrison, 1917. U. S. Natl. Mus., Proc. 52: 331. ♀.
Bracon aionos Shenefelt, 1937. Canad. Ent. 69: 205. ♀.
- comstocki** (Morrison). Que. s. to Fla., w. to Alta., Idaho, and Tex.
Bracon comstocki Morrison, 1917. U. S. Natl. Mus., Proc. 52: 323. ♀, ♂.
- crassifemur** (Muesebeck). Tex., N. Mex., Ariz., Calif.; Mexico.
Bracon crassifemur Muesebeck, 1927. U. S. Natl. Mus., Proc. 69 (16): 9. ♂.
- haematodes** (Brulle). Pa. s. to Fla., w. to Colo. and Ariz.; Oreg., Calif. Host: *Loxostege rantis* (Guen.).
Agathis haematodes Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 502. ♀.
Agathis liberator Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 502. ♀. N. syn.
Agathis meabilis Cresson, 1872. Amer. Ent. Soc., Trans. 4: 183. ♀, ♂.
- kelloggii** (Morrison). Nev., Calif.
Bracon kelloggii Morrison, 1917. U. S. Natl. Mus., Proc. 52: 327. ♀, ♂.
Bracon discoidea Morrison, 1917. U. S. Natl. Mus., Proc. 52: 329. Citation of an Ashmead manuscript name.
- melanoptera** Ashmead. Wash., Oreg., Nev., Calif.; Baja Calif., Mexico.
Cremnops melanoptera Ashmead, 1894. Calif. Acad. Sci., Proc. (2) 4: 125. ♂.
- montrealensis** (Morrison). Que. and N. S. s. to N. C. and Ala., w. to Sask. and Tex. Host: *Evergestis straminealis* Hbn.
Bracon montrealensis Morrison, 1917. U. S. Natl. Mus., Proc. 52: 326. ♀, ♂.
- nigrosternum** (Morrison). No. Amer.
Bracon nigrosternum Morrison, 1917. U. S. Natl. Mus., Proc. 52: 322. ♀.
Bracon szepligetii Morrison, 1917. U. S. Natl. Mus., Proc. 52: 334. ♀, ♂.
- shenefelti** Marsh. Nev., Calif.
Cremnops shenefelti Marsh, 1961. Ent. Soc. Amer., Ann. 54: 857. ♀, ♂.
- slossonae** (Morrison). Fla. Host: *Epicorsia mellinalis* (Hbn.).
Bracon slossonae Morrison, 1917. U. S. Natl. Mus., Proc. 52: 318. ♀.
- virginiensis** (Morrison). No. Amer.
Bracon virginiensis Morrison, 1917. U. S. Natl. Mus., Proc. 52: 341. ♀, ♂.
- vulgaris** (Cresson). No. Amer. Host: *Loxostege commixtalis* (Wlkr.), *L. rantis* (Guen.), *L. sticticalis* (L.).
Agathis vulgaris Cresson, 1865. Ent. Soc. Phila., Proc. 4: 295. ♀.
Agathis media Cresson, 1865. Ent. Soc. Phila., Proc. 4: 295. ♂.
Agathis exoratus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 182. ♂.
- Biology: Simmonds, 1947. Bul. Ent. Res. 38: 145-155.
- washingtonensis** (Shenefelt). Nebr., Colo., Idaho, Utah, B. C., Wash., Oreg., Nev., Calif.
Bracon washingtonensis Shenefelt, 1937. Canad. Ent. 69: 206. ♀, ♂.

Genus EARINUS Wesmael

- Microdus* subg. *Earinus* Wesmael, 1837. Nouv. Mem. Acad. Sci. Bruxelles 10: 8.
 Type-species: *Microdus nitidulus* Nees. Desig. by Muesebeck and Walkley, 1951.
- Diatmetus* Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 246.
 Type-species: *Bassus gloriatorius* Panzer. Orig. desig.
- Taxonomy: Shenefelt, 1970. Hym. Cat., part 6, p. 404-408 (cat. World spp.).
- limitaris** (Say). Que. and N. S. s. to Va., w. to B. C. and Calif. Host: *Grapholitha* sp., *Xylomyges dolosa* Grote.
Bassus limitaris Say, 1835. Boston Jour. Nat. Hist. 1: 250. ♀.
- zeirapherae** Walley. Newfoundland w. to Alaska and B. C.; Va., Mich., N. Mex., Oreg., Calif.
 Host: *Acleris hudsoniana* (Wlkr.), *Choristoneura rosaceana* (Harr.), *Rhyacionia adana* Heinr., *Zeiraphera griseana* (Hbn.), *Z. canadensis* M. and F.
Earinus zeirapherae Walley, 1935. Canad. Ent. 67: 55. ♀, ♂.

Genus MEGAGATHIS Kriechbaumer

Megagathis Kriechbaumer, 1894. Berlin. Ent. Ztschr. 39: 311.

Type-species: *Megagathis natalensis* Kriechbaumer. Monotypic.

Adiathlipsis Enderlein, 1920 (1918). Arch. f. Naturgesch. 84 (A) (11): 194.

Type-species: *Adiathlipsis fasciata* Enderlein. Orig. desig.

Taxonomy: Shenefelt, 1970. Hym. Cat., part 6, p. 419-422 (cat. World spp.).

cressoni (Cameron). Tex.; Mexico, Cent. Amer., West Indies.

Agathis albitarsis Cresson, 1865. Ent. Soc. Phila., Proc. 4: 63. ♀, ♂. Preocc. in *Agathis* by Spinola, 1840.

Agathis cressoni Cameron, 1887. Biol. Cent.-Amer., Hym., v. 1, p. 398. N. name for *albitarsis* Cresson.

Genus ZELOMORPHA Ashmead

Neophylax Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 119. Preocc. by M'Lachlan, 1871.

Type-species: *Neophylax snyderi* Ashmead. Orig. desig.

Zelomorpha Ashmead, 1900. U. S. Natl. Mus., Proc. 11: 129.

Type-species: *Zelomorpha arizonensis* Ashmead. Orig. desig.

Ahngeria Kokujev, 1902. Ent. Obozr. 2: 6.

Type-species: *Ahngeria transcaspia* Kokujev. Monotypic.

Xanthomicrodus Cameron, 1904. Rec. Albany Mus. 1: 157.

Type-species: *Xanthomicrodus iridipennis* Cameron. Monotypic.

Lisitheria Cameron, 1904. Entomologist 37: 306.

Type-species: *Lisitheria nigricornis* Cameron. Monotypic.

Spilomicrodus Cameron, 1911. Timehri (3) 1: 323.

Type-species: *Spilomicrodus nigriceps* Cameron. Monotypic.

Caenophylax Schulz, 1911. Zool. Ann. 4: 88. N. name for *Neophylax* Ashmead.

Zelomorpha subg. *Zelomorphidea* Viereck, 1912. U. S. Natl. Mus., Proc. 42: 630.

Type-species: *Zelomorphidea (Zelomorphidea) melanota* Viereck. Orig. desig.

Taxonomy: Shenefelt, 1970. Hym. Cat., part 6, p. 425-427 (cat. World spp.).

arizonensis Ashmead. Tex., N. Mex., Ariz., Calif.; Baja Calif., Mexico.

Zelomorpha arizonensis Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 129.

fascipennis (Cresson). Fla.; Cuba.

Microdus fascipennis Cresson, 1865. Ent. Soc. Phila., Proc. 4: 65. ♀.

SUBFAMILY OPIINAE

Most of the recent literature on the Opiinae has been published by Fischer and the arrangement of the subfamily presented here follows that of Fischer (1973). All species are solitary endoparasites of dipterous larvae with pupation occurring in the host puparium. Records of lepidopterous and coleopterous hosts are doubtful and need to be confirmed.

Revision: Gahan, 1915. U. S. Natl. Mus., Proc. 49: 63-95 (No. Amer. spp.). —Fischer, 1964.

Polskie Pismo Ent. 34: 197-530 (No. Amer. spp.). —Fischer, 1965. Polskie Pismo Ent. 35: 3-212 (No. Amer. spp.).

Taxonomy: Fischer, 1971. Index World Opiinae, 189 p. (cat. World spp.). —Fischer, 1973. Das Tierreich, lief. 91, p. 55-61 (keys to World tribes and genera).

TRIBE ADEMONINI

Taxonomy: Fischer, 1973. Das Tierreich, lief. 91, p. 59-60 (key to genera).

Genus ADEMON Haliday

Ademon Haliday, 1833. Ent. Mag. 1: 266.

Type-species: *Ademon descrens* Haliday. Monotypic.

Lytacra Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 258.

Type-species: *Lytacra stygia* Foerster. Orig. desig.

Giardinaia Destefani Perez, 1902. Zool. Jahrb., Abt. f. Syst. 15: 631.

Type-species: *Giardinaia urinator* Destefani Perez. Monotypic.

Analostania Viereck, 1916. Biol. Soc. Wash., Proc. 29: 165.

Type-species: *Analostania tenuipes* Viereck. Orig. desig.

Species of this genus are parasites of aquatic leaf mining Diptera and are apparently restricted to the genus *Hydrellia*.

Revision: Fischer, 1965. Polskie Pismo Ent. 35: 197-208 (No. Amer. spp.).

Taxonomy: Fischer, 1971. Index World Opiinae, p. 18-19 (cat. World spp.).

Biology: Destefani Perez, 1902. Zool. Jahrb., Abt. f. Syst. 15: 625-634. — Rimsky-Korsakov,

1933. Handb. Biol. Arbeitsmethoden, Abt. 9, Teil 7, p. 255. — Burghole, 1959. Univ. C. I.

Parhon, Ann., Ser. St. Naturii 22: 143-169.

niger (Ashmead). N. Y., D. C., Va., Mich., Wis., Ill., Minn., Utah. Host: *Hydrellia* sp.

Clinocentrus niger Ashmead, 1895. Ill. State Lab. Nat. Hist., Bul. 4: 276. ♂.

Analostania tenuipes Viereck, 1916. Biol. Soc. Wash., Proc. 29: 165. ♀.

ovalis Fischer. Mich. Host: *Hydrellia* sp.

Ademon ovalis Fischer, 1965. Polskie Pismo Ent. 35: 203. ♀.

satanas Fischer. Mich.

Ademon satanus Fischer, 1965. Polskie Pismo Ent. 35: 205. ♀.

Genus EUOPIUS Fischer

Euopius Fischer, 1967. Beitr. Ent. 17: 959.

Type-species: *Neopius macrops* Fischer. Orig. desig.

Taxonomy: Fischer, 1965. Polskie Pismo Ent. 35: 187-197 (No. Amer. spp., in *Neopius*).

— Fischer, 1967. Beitr. Ent. 17: 959-969 (Nearctic and Neotr. spp.). — Fischer, 1969.

Entomophaga 14: 129-147 (Nearctic, Neotr., and Orient. spp.). — Fischer, 1971. Index World Opiinae, p. 15-17 (cat. World spp.).

albipalpus (Fischer). Fla.

Neopius albipalpus Fischer, 1965. Polskie Pismo Ent. 35: 188. ♂.

analis (Fischer). Fla., Miss.

Neopius analis Fischer, 1965. Polskie Pismo Ent. 35: 190. ♀, ♂.

cubitalis (Fischer). Md., Ga., Fla., Ont., Mich., Tex.

Neopius cubitalis Fischer, 1965. Polskie Pismo Ent. 35: 193. ♀, ♂.

macrops (Fischer). Conn., N. Y., Md., Fla., Ont., Mich., Ohio.

Neopius macrops Fischer, 1965. Polskie Pismo Ent. 35: 195. ♀, ♂.

TRIBE DESMIOSTOMATINI

Taxonomy: Fischer, 1973. Das Tierreich, lief. 91, p. 61 (key to genera).

Genus DESMIOSTOMA Foerster

Desmiostoma Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 260.

Type-species: *Opius parvulus* Wesmael. Orig. desig.

Taxonomy: Fischer, 1967. Ztschr. Arbeit. Osterr. Entom. 19: 64. — Fischer, 1973. Das Tierreich, lief. 91, p. 567.

additivum (Fischer). Que., N. Y., Cal.

Opius (Opius) additivus Fischer, 1965. Polskie Pismo Ent. 35: 5. ♂.

parvulum (Wesmael). N. Y., N. C., S. C., Tenn., Mich., Minn., Sask., Ariz., B. C., Wash., Calif.;

Europe. Host: *Agromyza* sp., *Liriomyza propepusilla* (Frost).

Opius parvulus Wesmael, 1835. Nouv. Mem. Acad. Sci. Bruxelles 9: 139. ♀, ♂.

Opius (Opius) nudiscutum Fischer, 1964. Polskie Pismo Ent. 34: 373. ♀, ♂.

Genus DORYCTOBRACON Enderlein

Doryctobracon Enderlein, 1920 (1918). Arch. f. Naturgesch. 84 (A) (11): 144.

Type-species: *Doryctobracon conjugens* Enderlein. Orig. desig.

Parachasma Fischer, 1967. Beitr. Neotr. Fauna 5: 7.

Type-species: *Opius zeteki* Muesebeck. Orig. desig.

Taxonomy: Fischer, 1967. Beitr. Neotr. Fauna 5: 7-11 (in *Parachasma*). — Fischer, 1971.

Index World Opiinae, p. 36-38 (cat. World spp. in *Parachasma*).

anastrephilum (Marsh), n. comb. Fla. Host: *Anastrepha interrupta* Stone, *A. suspensa* (Loew).

Parachasma anastrephilum Marsh, 1970. Fla. Ent. 53: 31. ♀, ♂.

cereus (Gahan), n. comb. Fla.; Mexico, Panama, Trinidad, Brazil. Introduced from Trinidad.

Host: *Anastrepha suspensa* (Loew).

Opius cereus Gahan, 1919, Ent. Soc. Wash., Proc. 21: 169. ♂.

TRIBE OPIINI

Taxonomy: Fischer, 1973. Das Tierreich, lief. 91, p. 60 (key to subtribes and genera).

SUBTRIBE BIOSTERINA

Genus BIOSTERES Foerster

Biosteres Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 259.

Type-species: *Bracon carbonarius* Nees. Orig. desig.

Zetetes Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 258. Preocc. by Cabanis, 1860.

Type-species: *Zetetes ultor* Foerster. Orig. desig.

Chilotrichia Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 258.

Type-species: *Opius blandus* Haliday. Orig. desig.

Stenospilus Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 259.

Type-species: *Stenospilus vagator* Foerster. Orig. desig.

Rhabdospilus Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 259.

Type-species: *Opius placidus* Haliday. Orig. desig.

Opiellus Ashmead, 1900. Canad. Ent. 32: 368. N. name for *Zetetes* Foerster.

Celiestella Cameron, 1903. Ztschr. Syst. Hym. Dipt. 3: 343.

Type-species: *Celiestella testaceipes* Cameron. Monotypic.

Diachasmimorpha Viereck, 1913. U. S. Natl. Mus., Proc. 44: 641.

Type-species: *Diachasmimorpha comperei* Viereck. Orig. desig.

Revision: Fischer, 1965. Polskie Pismo Ent. 35: 115-155 (N. Amer. spp. as subgenus of *Opius*).

Taxonomy: Fischer, 1967. Abt. Zool. Bot. Landsmus. Joanneum Graz, Mitt. 26: 159

(resurrection to generic rank). — Fischer, 1971. Index World Opiinae, p. 19-32 (cat. World spp.). — Fischer, 1973. Das Tierreich, lief. 91, p. 485-486 (synonymy, subgenera).

aietes Fischer. Oreg.

Biosteres aietes Fischer, 1970. Polskie Pismo Ent. 40: 763. ♀.

anthomyiae (Ashmead). Conn., N. Y., N. J., Mich., Ill., Minn., Colo., Idaho. Host: *Pegomya bicolor* (Wied.), *P. hyoscyami hyoscyami* (Panz.).

Opius anthomyiae Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 654. ♀.

Opius (*Desmlostoma*) *novaeangliae* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 183. ♀.

argos Fischer. S. C., Wash.

Biosteres argos Fischer, 1970. Polskie Pismo Ent. 40: 766. ♀, ♂.

californicus (Fischer). Calif.

Opius (*Biosteres*) *californicus* Fischer, 1865. Polskie Pismo Ent. 35: 140. ♀.

carbonarius (Nees). Ont., Minn., Colo., Alaska, Yukon, B. C., Wash., Calif.; Europe.

Bracon carbonarius Nees, 1834. Hym. Ichn. Aff. Monog., v. 1, p. 58. ♀, ♂.

Opius procerus Wesmael, 1835. Nouv. Mem. Acad. Sci. Bruxelles 9: 156. ♂.

Opius impressus Wesmael, 1835. Nouv. Mem. Acad. Sci. Bruxelles 9: 157. ♂.

Taxonomy: van Achterberg, 1975. Ent. Ber. 35: 175-176.

distractus (Fischer). Wyo.

Opius (*Biosteres*) *distractus* Fischer, 1965. Polskie Pismo Ent. 35: 119. ♂.

- foveolatus** (Ashmead). Mass. s. to Md., w. to S. Dak. Host: *Pegomya* sp., *P. hyoscyami hyoscyami* (Panz.).
Opus foveolatus Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 654. ♂.
- haemorrhoeus** (Haliday). N. Y., Ont., Mich.; Europe.
Opus haemorrhoeus Haliday, 1837. Ent. Mag. 4: 219. ♀, ♂.
Opus castoneiventris Thomson, 1895. Opusc. Ent., fasc. 20, p. 2201. ♀, ♂.
- incertus** (Fischer). Ont., Alta., Wyo., Colo., N. Mex., Alaska, Calif.
Opus (Biosteres) incertus Fischer, 1965. Polskie Pismo Ent. 35: 123. ♀, ♂.
- jason** Fischer. Md.
Biosteres jason Fischer, 1970. Polskie Pismo Ent. 40: 768. ♀.
- juglandis** (Muesebeck). Ariz. Host: *Rhagoletis juglandis* Cress.
Opus juglandis Muesebeck, 1961. Brooklyn Ent. Soc., Bul. 56: 57. ♀, ♂.
- kukakensis** (Ashmead). Mich., N. Dak., Colo., Alaska, Oreg.
Desmiostoma kukankense Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 251. ♀, ♂.
- longicaudatus** Ashmead. Fla.; Oriental and Australian Regions, Hawaii. Introduced from Hawaii. Host: *Anastrepha suspensa* (Loew).
Biosteres longicaudatus Ashmead, 1905. U. S. Natl. Mus., Proc. 28: 970. ♀.
- Biology: Baranowski, 1974. Fruit Fly News 3: 17. —Greany, *et al.*, 1976. Entomophaga 21: 207-215. —Ashley, Greany, and Chambers, 1977 (1976). Fla. Ent. 59: 391-396.
- melleus** (Gahan). N. S., Maine, N. H., Vt., N. Y., N. J., Fla., Ohio, Minn. Host: *Rhagoletis cingulata cingulata* (Loew), *R. cornivora* Bush, *R. mendax* Curran, *R. pomonella* (Walsh), *R. suavis* (Loew).
Opus melleus Gahan, 1915. U. S. Natl. Mus., Proc. 49: 73. ♀.
Biosteres rhagoletis Richmond, 1915. Canad. Ent. 47: 294. ♀, ♂.
- Biology: Lathrop and Newton, 1933. Jour. Agr. Res. 46: 143-160.
- numerosus** (Fischer). Colo., Alaska, B. C., Oreg., Calif.
Opus (Biosteres) numerosus Fischer, 1965. Polskie Pismo Ent. 35: 149. ♀, ♂.
- placidus** (Haliday). Ont., N. Y., Mich., Minn., N. Dak., S. Dak., Kans., Colo.; Europe.
Opus placidus Haliday, 1837. Ent. Mag. 4: 217. ♀.
Opus melanocerus Wesmael, 1838. Nouv. Mem. Acad. Sci. Bruxelles 11: 149. ♀.
Opus tarsator Thomson, 1895. Opusc. Ent., fasc. 20, p. 2193. ♀.
Biosteres indotatus Viereck, 1905. Kans. Acad. Sci., Trans. 19: 273. ♂.
- politus** (Provancher). Canada, Maine, N. Y., Mich.
Opus politus Provancher, 1883. Nat. Canad. 14: 16. ♂.
- quebecensis** (Provancher). Que., Maine, N. Y., Mich., Minn. Host: *Pegomya* sp., *Scaptomyza (Mesoscaptoomyza) adusta* (Loew).
Rhitigaster quebecensis Provancher, 1881. Nat. Canad. 12: 201. ♀, ♂.
- retractus** (Fischer). Idaho.
Opus (Biosteres) retractus Fischer, 1965. Polskie Pismo Ent. 35: 135. ♂.
- sanguineus** (Ashmead). Md., D. C., Ga., Fla., Ill., Mo., La., Tex., Ariz. Host: *Zonosemata electa* (Say), *Z. vittigera* (Coq.).
Phaedrotoma? sanguinea Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 655. ♀, ♂.
- Biology: Cazier, 1962. Pan-Pacific Ent. 38: 184-186.
- spinaciae** (Thomson). Que., Maine, N. Y., Ont., Wis., Minn., Utah, Idaho, Alaska, Wash., Calif.; Europe. Host: *Hylemya platyura* (Meig.), *Pegomya hyoscyami hyoscyami* (Panz.), *P. h. betae* (Curtis).
Opus spinaciae Thomson, 1895. Opusc. Ent., fasc. 20, p. 2200. ♂.
Opus pegomyiae Gahan, 1917. U. S. Natl. Mus., Proc. 53: 201. ♀, ♂.
Opus (Chilotrichia) hyoscyamiellus Viereck, 1925. Canad. Ent. 57: 278. ♂.
- Biology: Kaufman, 1937. Ztschr. f. Pflanzenkrank. 47: 75-85.
- stonehamensis** Fischer. Que.
Biosteres stonehamensis Fischer, 1970. Polskie Pismo Ent. 40: 771. ♀, ♂.

Genus DIACHASMA Foerster

Diachasma Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 259.

Type-species: *Opius fulgidus* Haliday. Orig. desig.

Bathystomus Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 235.

Type-species: *Bathystomus xanthopus* Foerster. Orig. desig.

Atoreuteus Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 241.

Type-species: *Atoreuteus striatus* Foerster. Orig. desig.

Revision: Fischer, 1965. Polskie Pismo Ent. 35: 155-165 (No. Amer. spp., as subgenus of *Opius*).

Taxonomy: Fischer, 1967. Abt. Zool. Bot. Landsmus. Joanneum Graz, Mitt. 26: 159

(resurrection to generic rank). — Fischer, 1971. Index World Opiinae, p. 33-36 (cat. World spp.).

alloeum (Muesebeck). Que., N. B., Maine, Conn., N. Y., Pa., Fla., Ont., Mich., Wis., Minn. Host:

Rhagoletis mendax Curran, *R. pomonella* (Walsh).

Opius alloeus Muesebeck, 1956. Ent. News 67: 101. ♀, ♂.

Biology: Boush and Baerwald, 1967. Ent. Soc. Amer., Ann. 60: 865-866.

columbicola (Fischer). S. C.

Opius (Diachasma) columbicola Fischer, 1965. Polskie Pismo Ent. 35: 158. ♂.

ferrugineum (Gahan). Ont. s. to N. J.; Fla., S. Dak. Host: *Rhagoletis cingulata cingulata* (Loew), *R. fausta* (O. S.).

Opius ferrugineus Gahan, 1915. U. S. Natl. Mus., Proc. 49: 75. ♀, ♂.

Taxonomy: Muesebeck, 1956. Ent. News 67: 99-101.

muliebre (Muesebeck). Wash., Calif. Host: *Rhagoletis* sp., *R. cingulata indifferens* Curran.

Opius muliebris Muesebeck, 1956. Ent. News 67: 100. ♀.

nigrifactum (Fischer). Wis.

Opius (Diachasma) nigrifactus Fischer, 1965. Polskie Pismo Ent. 35: 163. ♂.

SUBTRIBE OPIINA

Genus EURYTENES Foerster

Eurytenes Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 259.

Type-species: *Opius abnormis* Wesmael. Orig. desig.

Taxonomy: Fischer, 1965. Polskie Pismo Ent. 35: 165-167.

abnormis (Wesmael). S. C., Ont., Minn., Sask., N. Dak., Mont.; Europe.

Opius abnormis Wesmael, 1835. Nouv. Mem. Acad. Sci. Bruxelles 9: 117. ♀, ♂.

Genus OPIUS Wesmael

Opius Wesmael, 1835. Nouv. Mem. Acad. Sci. Bruxelles 9: 115.

Type-species: *Opius pallipes* Wesmael. Desig. by Muesebeck and Walkley, 1951.

Psytalia Walker, 1860. Ann. and Mag. Nat. Hist. (3) 5: 311.

Type-species: *Psytalia testacea* Walker. Monotypic.

Xynobius Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 235.

Type-species: *Xynobius pallipes* Foerster. Orig. desig.

Holconotus Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 259. Preocc. by Agassiz, 1854.

Type-species: *Opius comatus* Wesmael. Orig. desig.

Apodesmia Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 259.

Type-species: *Apodesmia taeniata* Foerster. Orig. desig.

Allotypus Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 259.

Type-species: *Opius irregularis* Wesmael. Orig. desig.

Phaedrotoma Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 260.

Type-species: *Phaedrotoma depeculator* Foerster. Orig. desig.

Eutrichopsis Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 260.

- Type-species: *Eutrichopsis munda* Foerster. Orig. desig.
Therobolus Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 260.
 Type-species: *Opius ruficeps* Wesmael. Orig. desig.
Hypocynodus Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 260.
 Type-species: *Opius crassipes* Wesmael. Orig. desig.
Cryptonastes Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 260.
 Type-species: *Cryptonastes tersus* Foerster. Orig. desig.
Hypolabis Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 260.
 Type-species: *Opius pallipes* Wesmael. Orig. desig.
Biophthora Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 260.
 Type-species: *Opius bajulus* Haliday. Orig. desig.
Nosopoea Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 260.
 Type-species: *Opius cingulatus* Wesmael. Orig. desig.
Utetes Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 261.
 Type-species: *Opius testaceus* Wesmael. Orig. desig.
Misophthora Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 266.
 Type-species: *Misophthora laevigata* Foerster. Orig. desig.
Acclisis Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 267.
 Type-species: *Acclisis isomera* Foerster. Orig. desig.
Aulonotus Ashmead, 1900. Canad. Ent. 32: 368. N. name for *Holconotus* Foerster.
Mesostoma Cameron, 1905. Tijdschr. Ent. 48: 42.
 Type-species: *Mesostoma testaceipes* Cameron. Monotypic.
Tolbia Cameron, 1907. Linn. Soc. London, Trans. (2) 12: 84.
 Type-species: *Tolbia scaevolae* Cameron. Monotypic.
Brachycentrus Szepligeti, 1907. Mus. Natl. Hist. Nat. Paris, Bul. 1907: 35. Preocc. by Curtis, 1834.
 Type-species: *Brachycentrus minutus* Szepligeti. Monotypic.
Hexaulax Cameron, 1910. Soc. Ent. 25: 25.
 Type-species: *Hexaulax ruficeps* Cameron. Monotypic.
Baeocentrum Schulz, 1911 (1909). Zool. Ann. 4: 65. N. name for *Brachycentrus* Szepligeti.
Eristermaulax Viereck, 1913. U. S. Natl. Mus., Proc. 46: 362.
 Type-species: *Eristermaulax leucotaenia* Viereck. Orig. desig.
Neopius Gahan, 1917. U. S. Natl. Mus., Proc. 53: 203.
 Type-species: *Neopius carinaticeps* Gahan. Orig. desig.
- Fischer (1973) has recently established several subgenera for the genus *Opius*. However, since this was done only for the Palaearctic groups, I was unable to assign the Nearctic species to their proper subgenera.
- Revision: Fischer, 1964. Polskie Pismo Ent. 34: 197-530 (No. Amer. spp.). —Fischer, 1965. Polskie Pismo Ent. 35: 3-212 (No. Amer. spp.).
- Taxonomy: Fischer, 1971. Index World Opiinae, p. 38-123 (cat. World spp.). —Fischer, 1973. Das Tierreich, lief. 91, p. 67-71 (subgenera). —Marsh, 1974. Ent. Soc. Wash., Proc. 76: 286 (synonymy).
- aberrans** Viereck. Que. s. to S. C., w. to Ont. and Kans.
Opius aberrans Viereck, 1905. Kans. Acad. Sci., Trans. 19: 271. ♀.
Opius (Opius) crabtreeanus Fischer, 1964. Polskie Pismo Ent. 34: 470. ♀.
Opius (Opius) masoni Fischer, 1964. Polskie Pismo Ent. 34: 480. ♀, ♂.
Opius (Opius) suffixus Fischer, 1964. Polskie Pismo Ent. 34: 493. ♂.
- /Taxonomy: Marsh, 1974. Ent. Soc. Wash., Proc. 76: 286.
- aciuræ** Fischer. N. C., Fla. Host: *Myoleja limata* (Coq.).
Opius (Opius) aciuræ Fischer, 1964. Polskie Pismo Ent. 34: 272. ♀, ♂.
- adductus** Fischer. N. Y., Calif. Host: *Agromyza* sp.
Opius (Opius) adductus Fischer, 1964. Polskie Pismo Ent. 34: 413. ♀, ♂.
- alachuanus** Fischer. Fla.
Opius (Opius) alachuanus Fischer, 1964. Polskie Pismo Ent. 34: 379. ♀.
- alconanus** Fischer. Mich.
Opius (Opius) alconanus Fischer, 1964. Polskie Pismo Ent. 34: 416. ♀.

- Opius (Opius) apertus* Fischer, 1964. Polskie Pismo Ent. 34: 417. ♂.
 Taxonomy: Marsh, 1974. Ent. Soc. Wash., Proc. 76: 286.
- americanus* Gahan. Pa., N. C., Ga., Ill.
Opius americanus Gahan, 1915. U. S. Natl. Mus., Proc. 49: 91. ♂.
Opius (Opius) extraordinarius Fischer, 1965. Polskie Pismo Ent. 35: 9. ♂.
 Taxonomy: Marsh, 1974. Ent. Soc. Wash., Proc. 76: 286.
- amplus* (Ashmead). Newfoundland, Que., Mich., Minn., Iowa, Colo., Alta., Idaho, B. C., Oreg., Alaska. Host: *Agromyza albitalis* Meig.
Adelura ampla Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 19. ♀.
- anastrephae* Viereck. Fla. Host: *Anastrepha suspensa* (Loew).
Opius (Utetes) anastrephae Viereck, 1913. U. S. Natl. Mus., Proc. 44: 563. ♀, ♂.
- anaximandri* Fischer. N. H.
Opius anaximandri Fischer, 1970. Polskie Pismo Ent. 40: 774. ♀.
- anaximensis* Fischer. N. H.
Opius anaximensis Fischer, 1970. Polskie Pismo Ent. 40: 776. ♀.
- angustistriatus* Fischer. N. Y., S. C.
Opius (Opius) angustistriatus Fischer, 1964. Polskie Pismo Ent. 34: 353. ♀.
- antennatus* Fischer. S. C.
Opius (Opius) antennatus Fischer, 1965. Polskie Pismo Ent. 35: 65. ♂.
- antrimensis* Fischer. Mich.
Opius (Opius) antrimensis Fischer, 1965. Polskie Pismo Ent. 35: 91. ♂.
- apicalis* Gahan. Conn. s. to S. C., w. to N. Dak. and Colo.; Calif. Host: *Liriomyza* sp.
Opius apicalis Gahan, 1915. U. S. Natl. Mus., Proc. 49: 85. ♀, ♂.
Opius (Allotypus) exareolatus Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 183. ♀,
 Taxonomy: Marsh, 1974. Ent. Soc. Wash., Proc. 76: 286.
- aquaticus* Muesebeck. Oreg., Calif. Host: *Hydrellia griseola* (Fall).
Opius hydrelliae Muesebeck, 1933. Ent. Soc. Wash., Proc. 35: 197. ♀. Preocc. by Rimsky-Korsokov, 1925.
Opius aquaticus Muesebeck, 1967. In Krombein and Burks, U. S. Dept. Agr., Agr. Monog. 2, 2nd suppl., p. 48. N. name for *hydrelliae* Muesebeck.
Opius hydrellianus Fischer, 1971. Index World Opiinae, p. 74. N. name for *hydrelliae* Muesebeck.
- aridis* Gahan. Colo., N. Mex., Ariz., Calif. Host: *Cerodontha (Cerodontha) dorsalis* (Loew), *Liriomyza* sp., *L. munda* Frick.
Opius aridis Gahan, 1913. Canad. Ent. 45: 147. ♀, ♂.
- atrocoxalis* (Ashmead). Colo.
Homophyla atrocoxalis Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 18. ♀.
- aureliae* Fischer. Colo., Alaska, B. C., Wash.; Europe.
Opius (Opius) aureliae Fischer, 1957. Deut. Ent. Ztschr., N. F., 4: 343. ♀.
- baldufi* Muesebeck. Mich., Wis., Ill., Minn. Host: *Rhagoletis basiola* (O. S.).
Opius baldufi Muesebeck, 1950 (1949). Canad. Ent. 81: 256. ♀, ♂.
 Biology: Balduf, 1959. Ill. Biol. Monog. 26: 32-40.
- basicastaneus* Fischer. S. C.
Opius (Opius) basicastaneus Fischer, 1964. Polskie Pismo Ent. 34: 501. ♂.
- basiniger* Viereck. Pa., Md., Va., Minn., Iowa, Mo., S. Dak., Kans., Tex., Colo.
Opius basiniger Viereck, 1905. Kans. Acad. Sci., Trans. 19: 270. ♀.
Opius foersteri Gahan, 1915. U. S. Natl. Mus., Proc. 49: 83. ♀, ♂.
 Taxonomy: Marsh, 1974. Ent. Soc. Wash., Proc. 76: 286.
- bidentis* Fischer. Fla.
Opius (Opius) bidentis Fischer, 1964. Polskie Pismo Ent. 34: 360. ♀, ♂.
- bigdeltanus* Fischer. Alaska, Calif.
Opius (Opius) bigdeltanus Fischer, 1965. Polskie Pismo Ent. 35: 67. ♀, ♂.

blantoni Fischer. Que., Alaska, B. C., Wash., Oreg., Calif.

Opius (Opius) blantoni Fischer, 1964. Polskie Pismo Ent. 34: 338. ♀.

Opius (Opius) vockerothi Fischer, 1964. Polskie Pismo Ent. 34: 348. ♀, ♂.

Taxonomy: Marsh, 1974. Ent. Soc. Wash., Proc. 76: 286.

bromensis Fischer. Que.

Opius (Opius) bromensis Fischer, 1965. Polskie Pismo Ent. 35: 93. ♀.

brookii Fischer. Fla., Tenn., Miss., Iowa.

Opius (Opius) brooki Fischer, 1965. Polskie Pismo Ent. 35: 95. ♀, ♂.

brownsvillensis Fischer. Tex.

Opius (Opius) brownsvillensis Fischer, 1965. Polskie Pismo Ent. 35: 97. ♀, ♂.

bruneipes Gahan. Md., Fla., Alta., Calif. Host: *Liriomyza munda* Frick.

Opius bruneipes Gahan, 1913. Canad. Ent. 45: 148. ♀, ♂.

brunneitarsis Gahan. Mich., Iowa.

Opius brunneitarsis Gahan, 1915. U. S. Natl. Mus., Proc. 49: 77. ♀.

Opius (Opius) ingens Fischer, 1965. Polskie Pismo Ent. 35: 11. ♀.

Taxonomy: Marsh, 1974. Ent. Soc. Wash., Proc. 76: 286.

brunneiventris Cresson. Kans., Tex., Ariz.

Opius brunneiventris Cresson, 1872. Amer. Ent. Soc., Trans. 4: 178. ♂.

brunescens Fischer. N. Y.

Opius (Opius) brunescens Fischer, 1964. Polskie Pismo Ent. 34: 340. ♀, ♂.

canaliculatus Gahan. Md., Ill., Minn., Man.

Opius canaliculatus Gahan, 1915. U. S. Natl. Mus., Proc. 49: 80. ♀.

canimensis Fischer. N. Y., N. C., S. C., B. C.

Opius (Opius) canimensis Fischer, 1965. Polskie Pismo Ent. 35: 78. ♀, ♂.

cannonbeachensis Fischer. Oreg.

Opius cannonbeachensis Fischer, 1970. Polskie Pismo Ent. 40: 779. ♀.

carinus Fischer. N. C.

Opius (Opius) carinus Fischer, 1964. Polskie Pismo Ent. 34: 253. ♂.

castaneigaster Fischer. N. Y., N. C., S. C., Ga., Ont., Ohio, Tenn., Wis., Minn.

Opius (Opius) castaneigaster Fischer, 1964. Polskie Pismo Ent. 34: 419. ♀, ♂.

chapmani Fischer. Mass., N. Y., Wash.

Opius (Opius) chapmani Fischer, 1964. Polskie Pismo Ent. 34: 311. ♂.

chewaucanus Fischer. Oreg.

Opius (Opius) chewaucanus Fischer, 1965. Polskie Pismo Ent. 35: 31. ♀.

cincticornis Gahan. Newfoundland, Que., Maine, N. Y., N. J., Md., N. C., Mich., Sask., B. C. The species has been recorded as a parasite of *Heterarthrus nemoratus* (Fall.) which needs to be confirmed.

Opius cincticornis Gahan, 1915. U. S. Natl. Mus., Proc. 49: 78. ♀.

cinctus Provancher. N. S., Que., N. Y., N. C., Ont., Mich., Ohio, Ill., Minn., Sask., Utah, Yukon, Alaska, Wash., Calif.

Opius cinctus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 124. ♀, ♂.

Prosopha hyalina Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 393. ♀.

clellanvillensis Fischer. S. C.

Opius (Opius) clellanvillensis Fischer, 1964. Polskie Pismo Ent. 34: 454. ♀.

clevelandensis Fischer. N. Y., S. C.

Opius (Opius) clevelandensis Fischer, 1964. Polskie Pismo Ent. 34: 421. ♀, ♂.

cochisensis Fischer. Ariz.

Opius (Opius) cochisensis Fischer, 1965. Polskie Pismo Ent. 35: 80. ♀.

coleogaster Fischer. Fla.

Opius (Opius) coleogaster Fischer, 1964. Polskie Pismo Ent. 34: 399. ♀, ♂.

coloradensis Gahan. Colo.

Opius coloradensis Gahan, 1915. U. S. Natl. Mus., Proc. 49: 83. ♀.

columbiacus Fischer. N. Y., N. C., S. C., Minn., Ariz.

Opius (Opius) columbiacus Fischer, 1964. Polskie Pismo Ent. 34: 466. ♀, ♂.

- comatus** Wesmael. N. Y., Md., S. C., Minn., B. C.; Europe.
Opius comatus Wesmael, 1835. *Nouv. Mem. Acad. Sci. Bruxelles* 9: 145. ♀, ♂.
- complicans** Fischer. N. Y., N. C., S. C., Tenn., Alta., Idaho, B. C., Wash., Calif.
Opius (Opius) complicans Fischer, 1965. *Polskie Pismo Ent.* 35: 69. ♀, ♂.
- confundens** Fischer. S. C., Fla., La., Tex.
Opius (Opius) confundens Fischer, 1964. *Polskie Pismo Ent.* 34: 381. ♀, ♂.
- convergitalis** Fischer. N. C.
Opius (Opius) convergitalis Fischer, 1964. *Polskie Pismo Ent.* 34: 468. ♀.
- coriaceus** Gahan. N. Y. s. to Fla., w. to La. Host: *Cerodontha (Cerodontha) dorsalis* (Loew).
Opius coriaceus Gahan, 1917. *U. S. Natl. Mus., Proc.* 53: 201. ♀, ♂.
- crandalli** Fischer. Ariz.
Opius (Opius) crandalli Fischer, 1964. *Polskie Pismo Ent.* 34: 312. ♀.
- crassiceps** Gahan. N. Y., D. C., Va., S. C., Mich., Minn., Iowa, Colo.
Opius crassiceps Gahan, 1915. *U. S. Natl. Mus., Proc.* 49: 78. ♀.
- crecentensis** Fischer. Calif.
Opius (Opius) crecentensis Fischer, 1965. *Polskie Pismo Ent.* 35: 33. ♂.
- curtiarticulatus** Fischer. Mass., N. Y., Sask.
Opius (Opius) curtiarticulatus Fischer, 1964. *Polskie Pismo Ent.* 34: 315. ♀.
- curticubitalis** Fischer. Wash., Calif. Host: *Agromyza* sp., *Phytomyza atricornis* Meig.
Opius (Opius) curticubitalis Fischer, 1965. *Polskie Pismo Ent.* 35: 35. ♀, ♂.
- deiphobe** Fischer. N. C.
Opius deiphobe Fischer, 1970. *Polskie Pismo Ent.* 40: 782. ♀.
- demosthenis** Fischer. S. C.
Opius demosthenis Fischer, 1970. *Polskie Pismo Ent.* 40: 787. ♀.
- diastatae** (Ashmead). N. Y., S. C., Fla., Ind., Ala., Wis., Minn. Host: *Agromyza parvicornis* Loew.
Bracon diastatae Ashmead, 1889 (1888). *U. S. Natl. Mus., Proc.* 11: 617. ♀.
- differentiarius** Fischer. N. Y., N. C.
Opius (Opius) differentiarius Fischer, 1965. *Polskie Pismo Ent.* 35: 7. ♂.
- dimensis** Fischer. N. Y., Minn.
Opius (Opius) dimensis Fischer, 1964. *Polskie Pismo Ent.* 34: 362. ♀.
- dimidiatus** (Ashmead). No. Amer.; West Indies. Host: *Agromyza* sp., *Cerodontha (Cerodontha) dorsalis* (Loew), *Liriomyza* sp., *L. munda* Frick, *L. trifolii* (Burgess), *Phytobia* sp., *Phytomyza opacae* Kulp.
Adelura dimidiatus Ashmead, 1889 (1888). *U. S. Natl. Mus., Proc.* 11: 647. ♂.
Eutrichopsis agromyzae Viereck, 1912. *U. S. Natl. Mus., Proc.* 42: 622. ♀.
- dizygomyzae** Fischer. N. Y., Calif. Host: *Dizygomyza* sp.
Opius (Opius) dizygomyzae Fischer, 1965. *Polskie Pismo Ent.* 35: 37. ♀, ♂.
- douglasanus** Fischer. Kans.
Opius (Opius) douglasanus Fischer, 1965. *Polskie Pismo Ent.* 35: 84. ♂.
- downesi** Gahan. N. Y., Ont., Mich., B. C., Wash. Host: *Rhagoletis berberis* Curran, *R. pomonella* (Walsh), *R. tabellaria* (Fitch).
Opius downesi Gahan, 1919. *Ent. Soc. Wash., Proc.* 21: 164. ♀.
Opius (Opius) berberidis Fischer, 1964. *Polskie Pismo Ent.* 34: 358. ♀, ♂.
- Taxonomy: Marsh, 1974. *Ent. Soc. Wash., Proc.* 76: 286.
- dreisbachi** Fischer. Mich.
Opius (Opius) dreisbachi Fischer, 1964. *Polskie Pismo Ent.* 34: 385. ♀, ♂.
- dubitarius** Fischer. N. Y.
Opius (Opius) dubitarius Fischer, 1965. *Polskie Pismo Ent.* 35: 39. ♀, ♂.
- eastridgeanus** Fischer. Ga., Tenn., Wis., Wash.
Opius (Opius) eastridgeanus Fischer, 1965. *Polskie Pismo Ent.* 35: 41. ♀.
- ehrhorni** Gahan. Calif.
Opius ehrhorni Gahan, 1915. *U. S. Natl. Mus., Proc.* 49: 87. ♀.

empedoplis Fischer. Md.

Opius empedoplis Fischer, 1970. Polskie Pismo Ent. 40: 790. ♀.

euwattacooanus Fischer. N. Y., Md., S. C., Mich.

Opius (Opius) euwattacooanus Fischer, 1964. Polskie Pismo Ent. 34: 505. ♀, ♂.

farmingdalicus Fischer. N. Y.

Opius (Opius) farmingdalicus Fischer, 1964. Polskie Pismo Ent. 34: 475. ♂.

Opius (Opius) cinereifactus Fischer, 1965. Polskie Pismo Ent. 34: 503. ♀, ♂.

Opius (Opius) farmingdalensis Fischer, 1965. Polskie Pismo Ent. 34: 507. ♀.

Taxonomy: Marsh, 1974. Ent. Soc. Wash., Proc. 76: 286.

flaviceps Gahan. Que. s. to N. J.; Minn., Iowa.

Opius flaviceps Gahan, 1915. U. S. Natl. Mus., Proc. 49: 76. ♀.

foutsii Fischer. R. I., Md.

Opius (Opius) foutsii Fischer, 1964. Polskie Pismo Ent. 34: 401. ♀.

Opius (Opius) westerlyanus Fischer, 1964. Polskie Pismo Ent. 34: 528. ♀.

Taxonomy: Marsh, 1974. Ent. Soc. Wash., Proc. 76: 286.

frequens Fischer. Que., Maine, N. Y., Ont., Mich., Minn., Man., Wash., Oreg. Host: *Rhagoletis fausta* (O. S.).

Opius (Opius) frequens Fischer, 1964. Polskie Pismo Ent. 34: 279. ♀, ♂.

fulvicollis Thomson. Que., Maine, N. Y., Pa., Ont.; Europe. Host: *Pegomya hyoscyami hyoscyami* (Panz.).

Opius fulvicollis Thomson, 1895. Opusc. Ent., fasc. 20, p. 2181. ♀, ♂.

Opius cupidus Gahan, 1919. Ent. Soc. Wash., Proc. 21: 162. ♀.

Biology: Bremer and Kaufman, 1928. Arbeit. Biol. Reichs. Land-und Forstw. 16: 526-533.

—Kaufman, 1937. Ztschr. Pflanzenkrank. 47: 75-85.

gahani Muesebeck. N. Y., Pa., Md., Va., Mich., Wis., Ill., Tenn., Minn., Man.

Opius fuscipennis Gahan, 1915. U. S. Natl. Mus., Proc. 49: 79. ♀, ♂. Preocc. by Wesmael, 1835.

Opius gahani Muesebeck, 1931. U. S. Natl. Mus., Proc. 79 (16): 11. N. name for *fuscipennis* Gahan.

Opius (Opius) gahanoides Fischer, 1964. Polskie Pismo Ent. 34: 283. ♀.

Taxonomy: Marsh, 1974. Ent. Soc. Wash., Proc. 76: 286.

gainesvillensis Fischer. Md., N. C., Fla.

Opius (Opius) gainesvillensis Fischer, 1964. Polskie Pismo Ent. 34: 402. ♀, ♂.

glasgowi Fischer. N. Y., S. Dak. Host: *Rhagoletis cingulata cingulata* (Loew).

Opius (Opius) glasgowi Fischer, 1964. Polskie Pismo Ent. 34: 286. ♂.

globiformis Fischer. N. Y., Md., Ont., Mich., Wis.

Opius (Opius) globiformis Fischer, 1964. Polskie Pismo Ent. 34: 497. ♀, ♂.

globigaster Fischer. N. Y. s. to S. C.

Opius (Opius) globigaster Fischer, 1964. Polskie Pismo Ent. 34: 387. ♀, ♂.

Opius (Opius) grafi Fischer, 1964. Polskie Pismo Ent. 34: 389. ♀, ♂.

Taxonomy: Marsh, 1974. Ent. Soc. Wash., Proc. 76: 286.

gracillariae Gahan. Ohio, Minn., Mo., Kans. This species has been recorded as a parasite of *Porphyrosela desmodiella* (Clem.) which needs to be confirmed.

Bracon gracillariae Ashmead, 1890. U. S. Dept. Agr., Insect Life 2: 349. Nom. nud.

Opius gracillariae Gahan, 1915. U. S. Natl. Mus., Proc. 49: 90. ♀.

gravicornis Fischer. Que.

Opius (Opius) gravicornis Fischer, 1964. Polskie Pismo Ent. 34: 230. ♂.

hancockanus Fischer. N. Y.

Opius (Opius) hancockanus Fischer, 1964. Polskie Pismo Ent. 34: 426. ♀.

hardmanni Fischer. Wash., Oreg., Calif.

Opius (Opius) hardmanni Fischer, 1964. Polskie Pismo Ent. 34: 211. ♀, ♂.

hartleyi Fischer. Alaska.

Opius (Opius) hartleyi Fischer, 1964. Polskie Pismo Ent. 34: 258. ♀.

heroicus Fischer. N. C.

Opius heroicus Fischer, 1970. Polskie Pismo Ent. 40: 792. ♀.

hoffmanni Fischer. Ga., Mich., Minn. Host: *Phytobia (Nemorimyza) posticata* (Meig.).

Opius (Opius) hoffmanni Fischer, 1964. Polskie Pismo Ent. 34: 391. ♀, ♂.

hollisterensis Fischer. Idaho.

Opius (Opius) hollisterensis Fischer, 1964. Polskie Pismo Ent. 34: 328. ♀.

Opius (Opius) hagermanicus Fischer, 1965. Polskie Pismo Ent. 35: 43. ♀.

Taxonomy: Marsh, 1974. Ent. Soc. Wash., Proc. 76: 286.

hubbelli Fischer. Ont., Mich.

Opius (Opius) hubbelli Fischer, 1965. Polskie Pismo Ent. 35: 101. ♀.

igneus Fischer. N. Y., N. C., S. C., Fla.; Cuba.

Opius (Opius) igneus Fischer, 1964. Polskie Pismo Ent. 34: 477. ♀, ♂.

Opius (Opius) pinkbedsanus Fischer, 1964. Polskie Pismo Ent. 34: 488. ♀, ♂.

Taxonomy: Marsh, 1974. Ent. Soc. Wash., Proc. 76: 286.

ignifer Fischer. N. Y.

Opius (Opius) ignifer Fischer, 1964. Polskie Pismo Ent. 34: 232. ♀.

ilicis Nixon. B. C.; Europe. Introduced from England. Host: *Phytomyza ilicis* (Curt.).

Opius ilicis Nixon, 1939. Ent. Monthly Mag. 75: 80. ♀, ♂.

Biology: Cameron, 1941. Parasitology 31: 8-39.

interjectus Fischer. Fla.

Opius (Opius) interjectus Fischer, 1965. Polskie Pismo Ent. 35: 86. ♀.

intermissus Fischer. N. Y., S. C.

Opius (Opius) intermissus Fischer, 1964. Polskie Pismo Ent. 34: 428. ♀, ♂.

irregularis Wesmael. N. Y., N. C., B. C., Wash., Oreg.; Europe.

Opius irregularis Wesmael, 1835. Nouv. Mem. Acad. Sci. Bruxelles 9: 132. ♀, ♂.

isolatae Fischer. Wash., Calif. Host: *Agromyza isolata* Mall.

Opius (Opius) isolatae Fischer, 1964. Polskie Pismo Ent. 34: 478. ♀, ♂.

ithacensis Fischer. N. Y., Minn.

Opius (Opius) ithacensis Fischer, 1964. Polskie Pismo Ent. 34: 239. ♀.

jacobi Fischer. Que., N. Y., Alaska, B. C., Wash., Oreg., Calif.

Opius (Opius) jacobi Fischer, 1964. Polskie Pismo Ent. 34: 329. ♀, ♂.

juniperi Fischer. Man., Ariz.

Opius (Opius) juniperi Fischer, 1964. Polskie Pismo Ent. 34: 288. ♀, ♂.

karesuandensis Fischer. Yukon, Alaska; Sweden.

Opius (Opius) karesuandensis Fischer, 1964. Polskie Pismo Ent. 34: 241. ♀, ♂.

kinleyensis Fischer. Alaska.

Opius (Opius) kinleyensis Fischer, 1964. Polskie Pismo Ent. 34: 317. ♀, ♂.

krombeini Fischer. Va.

Opius (Opius) krombeini Fischer, 1964. Polskie Pismo Ent. 34: 367. ♀.

labadorensis Fischer. Labrador.

Opius (Opius) labadorensis Fischer, 1965. Polskie Pismo Ent. 35: 13. ♀.

lansingensis Fischer. N. Y., S. C., Mich.

Opius (Opius) lansingensis Fischer, 1965. Polskie Pismo Ent. 35: 103. ♀, ♂.

latitemporalis Fischer. N. Y.

Opius (Opius) latitemporalis Fischer, 1964. Polskie Pismo Ent. 34: 509. ♂.

lectoides Gahan. N. S., Md., Ont., Oreg. Host: *Rhagoletis cornivora* Bush, *R. pomonella* (Walsh), *R. zephyria* Snow.

Opius lectoides Gahan, 1930. U. S. Natl. Mus., Proc. 77 (8): 2. ♀, ♂.

lectus Gahan. N. S., N. B., Que., Maine, Vt., N. Y., Ont., Mich., Calif. Host: *Rhagoletis fausta* (O. S.), *R. mendax* Curran, *R. pomonella* (Walsh), *R. tabellaria* (Fitch).

Opius lectus Gahan, 1919. Ent. Soc. Wash., Proc. 21: 167. ♀, ♂.

leevingensis Fischer. Calif.

Opius (Opius) leevingensis Fischer, 1964. Polskie Pismo Ent. 34: 369. ♂.

- lemnaphilae** Muesebeck. N. Y. Host: *Lemnaphila scotlandae* Cress.
Opus lemnaphilae Muesebeck, 1939. Ent. Soc. Wash., Proc. 41: 59. ♀, ♂.
 Biology: Scotland, 1939. Ent. Soc. Amer., Ann. 32: 716-717. —Scotland, 1940. N. Y. Ent. Soc., Jour. 48: 323-325.
- lemonensis** Fischer. Ariz.; Mexico.
Opus (Opus) lemonensis Fischer, 1964. Polskie Pismo Ent. 34: 319. ♀, ♂.
- liriomyzae** Fischer. N. C., Calif. Host: *Liriomyza propepusilla* Frost.
Opus (Opus) liriomyzae Fischer, 1964. Polskie Pismo Ent. 34: 260. ♂.
- longicubitalis** Fischer. N. Y., N. C., S. C., Ont., Mich., Minn., Man., Alta., B. C., Wash.
Opus (Opus) longicubitalis Fischer, 1965. Polskie Pismo Ent. 35: 46. ♀, ♂.
- luteiceps** Viereck. Kans.
Opus luteiceps Viereck, 1905. Kans. Acad. Sci., Trans. 19: 271. ♂.
- macrocerus** Thomson. Mich.; Europe.
Opus macrocerus Thomson, 1895. Opusc. Ent., fasc. 20, p. 2186. ♀, ♂.
Opus hians Stelfox, 1949. Ent. Monthly Mag. 85: 306. ♀, ♂.
- malivorellae** Fischer. Mass., W. Va., Fla., Mich., Miss., Iowa, N. Dak., S. Dak. This species was recorded as a parasite of *Coleophora malivorella* which needs to be confirmed.
Opus (Opus) malivorellae Fischer, 1964. Polskie Pismo Ent. 34: 213. ♀, ♂.
- mandibularis** Gahan. R. I., N. Y., Md., D. C., Ga., Fla., La., Calif.; West Indies. Host:
Agromyza sp., *Hylemya (Paregle) radicum* (L.), *Phytobia (Amauromyza) maculosa* (Mall.), *Phytomyza atricornis* Meig.
Opus mandibularis Gahan, 1915. U. S. Natl. Mus., Proc. 49: 81. ♀, ♂.
- martini** Fischer. Fla.
Opus (Opus) martini Fischer, 1965. Polskie Pismo Ent. 35: 105. ♀.
- mediopectus** Fischer. Wash.
Opus (Opus) mediopectus Fischer, 1965. Polskie Pismo Ent. 35: 48. ♂.
- microsomaticus** Fischer. Wash.
Opus (Opus) microsomaticus Fischer, 1965. Polskie Pismo Ent. 35: 15. ♀.
- middlekauffi** Fischer. Calif. Host: *Pegomya hyoscyami hyoscyami* (Panz.).
Opus (Opus) middlekauffi Fischer, 1964. Polskie Pismo Ent. 34: 244. ♀, ♂.
- montanus** (Ashmead). Mich., Colo., Calif. Host: *Liriomyza* sp.
Adelura montana Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 19. ♀.
- myakkensis** Fischer. Fla.
Opus (Opus) myakkensis Fischer, 1964. Polskie Pismo Ent. 34: 404. ♂.
- nanus** Provancher. Calif.
Opus nanus Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 382. ♀, ♂.
- nigritellae** Fischer. Calif.
Opus (Opus) nigritellae Fischer, 1964. Polskie Pismo Ent. 34: 342. ♀.
- nigrocastaneus** Viereck. N. Y., Iowa, Kans.
Opus nigrocastaneus Viereck, 1905. Kans. Acad. Sci., Trans. 19: 272. ♂.
Opus (Opus) amensis Fischer, 1964. Polskie Pismo Ent. 34: 309. ♀, ♂.
- Taxonomy: Marsh, 1974. Ent. Soc. Wash., Proc. 76: 286.
- niobe** Fischer. N. Y., Md.
Opus niobe Fischer, 1970. Polskie Pismo Ent. 40: 794. ♀.
- nitidulator** (Nees). Ont., Sask., Wyo., Colo., Alta., B. C., Calif.; Europe. Host: *Pegomya hyoscyami hyoscyami* (Panz.).
Bracon nitidulator Nees, 1834. Hym. Ich. Aff. Monog., v. 1, p. 56. ♂.
Opus vittatus Ruschka, 1915. Ztschr. Angew. Ent. 2: 395. ♀, ♂.
- nominguensis** Fischer. Que.
Opus (Opus) nominguensis Fischer, 1965. Polskie Pismo Ent. 35: 50. ♀.
- northcarolinensis** Fischer. N. Y., Md., N. C., Ont., Mich., Tex.
Opus (Opus) northcarolinensis Fischer, 1964. Polskie Pismo Ent. 34: 513. ♀, ♂.
- notaulicus** Fischer. Que., Mass., R. I.
Opus (Opus) notaulicus Fischer, 1964. Polskie Pismo Ent. 34: 217. ♀, ♂.

oralis Fischer. Kans.

Opius (Opius) oralis Fischer, 1965. Polskie Pismo Ent. 35: 52. ♀.

ordinarius Fischer. Wash., Oreg., Calif. Host: *Agromyza* sp., *Liriomyza* sp.

Opius (Opius) ordinarius Fischer, 1964. Polskie Pismo Ent. 34: 450. ♀, ♂.

ornatigaster Fischer. Calif. Host: *Agromyza* sp.

Opius (Opius) ornatigaster Fischer, 1964. Polskie Pismo Ent. 34: 515. ♀.

ornatus Fischer. N. Y. s. to S. C.; Mich., Minn.

Opius (Opius) ornatus Fischer, 1964. Polskie Pismo Ent. 34: 262. ♀, ♂.

oscinidis (Ashmead). N. Y. s. to Ga.; Ind., Kans. Host: *Chlorops* sp., *Phytomyza plantaginis* R. D.

Rhyssalus oscinidis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 630. ♂.

Opius (Opius) pusilloides Fischer, 1964. Polskie Pismo Ent. 34: 433. ♀, ♂.

Taxonomy: Marsh, 1974. Ent. Soc. Wash., Proc. 76: 286.

otiosus Gahan. Tex. Host: *Agromyza parvicornis* Loew.

Opius otiosus Gahan, 1917. U. S. Natl. Mus., Proc. 53: 202. ♀, ♂.

pallas Fischer. S. C.

Opius pallas Fischer, 1970. Polskie Pismo Ent. 40: 797. ♀.

pallidipalpalis Fischer. Md., N. C., S. C.

Opius (Opius) pallidipalpalis Fischer, 1964. Polskie Pismo Ent. 34: 482. ♀, ♂.

Opius (Opius) paratakomanus Fischer, 1964. Polskie Pismo Ent. 34: 484. ♀.

Taxonomy: Marsh, 1974. Ent. Soc. Wash., Proc. 76: 287.

pallipes Wesmael. Alta., Wash., Oreg., Calif.

Opius pallipes Wesmael, 1835. Nouv. Mem. Acad. Sci. Bruxelles 9: 118. ♀, ♂.

Opius pallidipes Marshall, 1891. Ent. Soc. London, Trans. 1891: 27. Emend.

pandora Fischer. S. C.

Opius pandora Fischer, 1970. Polskie Pismo Ent. 40: 799. ♀.

paradisiacus Fischer. Fla.

Opius (Opius) paradisiacus Fischer, 1964. Polskie Pismo Ent. 34: 456. ♀.

paralleliformis Fischer. N. Y.

Opius (Opius) paralleliformis Fischer, 1964. Polskie Pismo Ent. 34: 452. ♂.

parawattacooanus Fischer. S. C., B. C.

Opius (Opius) parawattacooanus Fischer, 1964. Polskie Pismo Ent. 34: 517. ♀.

parkeranus Fischer. Ariz.

Opius (Opius) parkeranus Fischer, 1964. Polskie Pismo Ent. 34: 458. ♀.

parkercreekensis Fischer. S. C., Ariz., Calif.

Opius (Opius) parkercreekensis Fischer, 1964. Polskie Pismo Ent. 34: 486. ♀.

parvifossa Fischer. Que., N. B., N. S., Vt., N. Y., Ont., Mich., Tenn., Wis., Minn., Kans.

Opius (Opius) parvifossa Fischer, 1964. Polskie Pismo Ent. 34: 294. ♀, ♂.

paulior Fischer. Que.

Opius (Opius) paulior Fischer, 1965. Polskie Pismo Ent. 35: 107. ♀.

paulus Fischer. Calif. Host: *Agromyza* sp., *Phytobia (Calycomyza) jucunda* (Wulp).

Opius (Opius) paulus Fischer, 1965. Polskie Pismo Ent. 35: 109. ♂.

pauper Fischer. Wash., Oreg., Calif. Host: *Agromyza* sp.

Opius (Opius) pauper Fischer, 1964. Polskie Pismo Ent. 34: 519. ♀, ♂.

pechumani Fischer. Ariz.

Opius pechumani Fischer, 1970. Math.-Naturw. Kl. Osterr. Akad. Wiss., Anz. 1970, no. 1, p. 11. ♀, ♂.

peleus Fischer. S. C.

Opius peleus Fischer, 1970. Polskie Pismo Ent. 40: 802. ♂.

Opius telephosi Fischer, 1970. Polskie Pismo Ent. 40: 812. ♀.

Taxonomy: Marsh, 1974. Ent. Soc. Wash., Proc. 76: 287.

pendulus Haliday. Que., Maine, N. Y., Ont.; Europe.

Opius pendulus Haliday, 1837. Ent. Mag. 4: 205. ♀, ♂.

pequodorum Viereck. Conn., S. C., Fla.

Opius (Hypolabis) pequodorum Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 183. ♀.

Opius (Opius) testaceifactus Fischer, 1964. Polskie Pismo Ent. 34: 220. ♀, ♂.

Taxonomy: Marsh, 1974. Ent. Soc. Wash., Proc. 76: 287.

perminutus Fischer. Calif. Host: *Phytomyza* sp.

Opius (Opius) perminutus Fischer, 1964. Polskie Pismo Ent. 34: 332. ♀, ♂.

perpygmaeus Fischer. Md., S. C.

Opius (Opius) perpygmaeus Fischer, 1964. Polskie Pismo Ent. 34: 521. ♀, ♂.

petiolaris Fischer. Fla.

Opius (Opius) petiolaris Fischer, 1965. Polskie Pismo Ent. 35: 56. ♂.

phoenicensis Fischer. Idaho, Ariz., Calif. Host: *Liriomyza* sp.

Opius (Opius) phoenicensis Fischer, 1965. Polskie Pismo Ent. 35: 71. ♀, ♂.

piceus Thomson. Que., Wash.; Europe.

Opius piceus Thomson, 1895. Opusc. Ent., fasc. 20, p. 2198. ♀.

pickensanus Fischer. N. Y., Pa., N. C., S. C., Minn.

Opius (Opius) pickensanus Fischer, 1965. Polskie Pismo Ent. 35: 88. ♀, ♂.

pilosinotum Fischer. N. Y.

Opius (Opius) pilosinotum Fischer, 1964. Polskie Pismo Ent. 34: 522. ♀.

pilosus Fischer. Calif.

Opius (Opius) pilosus Fischer, 1964. Polskie Pismo Ent. 34: 333. ♀.

pisgahensis Fischer. N. Y., N. C.

Opius (Opius) pisgahensis Fischer, 1964. Polskie Pismo Ent. 34: 323. ♂.

polyzonius Wesmael. N. Y., Md., Ont., Wis., Minn., N. Dak., Sask., B. C.; Europe.

Opius polyzonius Wesmael, 1835. Nouv. Mem. Acad. Sci. Bruxelles 9: 136. ♀, ♂.

porteri Fischer. Fla.

Opius (Opius) porteri Fischer, 1964. Polskie Pismo Ent. 34: 431. ♀.

prolongatus Fischer. S. C.

Opius (Opius) prolongatus Fischer, 1964. Polskie Pismo Ent. 34: 459. ♀.

provancheri Dalla Torre. N. Y. s. to Ga., w. to Ont. and Iowa; Kans., Colo., Ariz.

Opius ruficeps Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 124. ♀. Preocc. by Wesmael, 1835.

Opius provancheri Dalla Torre, 1898. Cat. Hym., v. 4, p. 64. N. name for *ruficeps* Provancher.

Opius demodokos Fischer, 1970. Polskie Pismo Ent. 40: 785. ♀, ♂.

Taxonomy: Marsh, 1974. Ent. Soc. Wash., Proc. 76: 287.

pseudocolumbiacus Fischer. N. C.

Opius (Opius) pseudocolumbiacus Fischer, 1964. Polskie Pismo Ent. 34: 489. ♂.

pseudoromensis Fischer. N. Y.

Opius (Opius) pseudoromensis Fischer, 1965. Polskie Pismo Ent. 35: 58. ♀.

punctipes Fischer. S. C., Fla.

Opius (Opius) punctipes Fischer, 1964. Polskie Pismo Ent. 34: 405. ♀.

Opius (Opius) cellulosus Fischer, 1965. Polskie Pismo Ent. 35: 29. ♀, ♂.

Taxonomy: Marsh, 1974. Ent. Soc. Wash., Proc. 76: 287.

rainierensis Fischer. Wash.

Opius (Opius) rainierensis Fischer, 1964. Polskie Pismo Ent. 34: 344. ♀.

relativus Fischer. S. C.

Opius (Opius) relativus Fischer, 1964. Polskie Pismo Ent. 34: 435. ♀, ♂.

restrictus Fischer. Md., S. C.

Opius (Opius) restrictus Fischer, 1964. Polskie Pismo Ent. 34: 407. ♀, ♂.

resupinus Fischer. Calif.

Opius (Opius) resupinus Fischer, 1964. Polskie Pismo Ent. 34: 409. ♀.

- rheasilviae** Fischer. N. Y.
Opius rheasilviae Fischer, 1970. Polskie Pismo Ent. 40: 804. ♀.
- richardsi** Fischer. Calif.
Opius (Opius) richardsi Fischer, 1965. Polskie Pismo Ent. 35: 111. ♀.
- richmondi** Gahan. Maine, Minn. Host: *Rhagoletis pomonella* (Walsh).
Opius richmondi Gahan, 1919. Ent. Soc. Wash., Proc. 21: 165. ♀, ♂.
- robsonensis** Fischer. B. C., Wash.
Opius (Opius) robsonensis Fischer, 1964. Polskie Pismo Ent. 34: 300. ♀, ♂.
- romensis** Fischer. N. Y.
Opius (Opius) romensis Fischer, 1965. Polskie Pismo Ent. 35: 59. ♀.
- romenosoides** Fischer. Que.
Opius (Opius) romenosoides Fischer, 1965. Polskie Pismo Ent. 35: 61. ♂.
- rosicola** Muesebeck. Wis., Ill., Minn., Sask., Wash., Oreg., Calif. Host: *Rhagoletis basiola* (O. S.), *R. cingulata indifferens* Curran.
Opius roscicola Muesebeck, 1950 (1949). Canad. Ent. 81: 254. ♀, ♂.
- Biology: Balduf, 1959. Ill. Biol. Monog. 26: 32-40.
- rudiformis** Fischer. Ont.; Europe.
Opius (Opius) rudiformis Fischer, 1958. Beitr. z. Ent. 8: 201. ♀.
- rudis** Wesmael. Maine, N. Y., N. J., Ont., Minn., N. Dak., Sask., Idaho, Utah, Calif.; Europe.
 Host: *Agromyza* sp.
Opius rudis Wesmael, 1835. Nouv. Mem. Acad. Sci. Bruxelles 9: 141. ♀, ♂.
Neopius carinaticeps Gahan, 1917. U. S. Natl. Mus., Proc. 53: 204. ♀, ♂.
- ruficolor** Fischer. Fla.
Opius (Opius) ruficolor Fischer, 1964. Polskie Pismo Ent. 34: 492. ♀.
- rufipleurum** Fischer. N. Y., S. C.
Opius (Opius) rufipleurum Fischer, 1964. Polskie Pismo Ent. 34: 264. ♀, ♂.
- rufocinctus** Gahan. Md., N. C., S. C., Ill., Mo., Kans.
Opius rufocinctus Gahan, 1915. U. S. Natl. Mus., Proc. 49: 84. ♀.
- sabroskyi** Fischer. Va.
Opius (Opius) sabroskyi Fischer, 1964. Polskie Pismo Ent. 34: 396. ♀, ♂.
- salmonensis** Fischer. N. Y., Minn., B. C.
Opius (Opius) salmonensis Fischer, 1964. Polskie Pismo Ent. 34: 438. ♀.
- severini** Fischer. Que., N. Y., Mich., Iowa, S. Dak., Colo., Utah, Alta.
Opius (Opius) severini Fischer, 1964. Polskie Pismo Ent. 34: 223. ♀, ♂.
- shuleri** Fischer. S. C.
Opius (Opius) shuleri Fischer, 1964. Polskie Pismo Ent. 34: 524. ♂.
- sierraanchaensis** Fischer. Ariz.
Opius (Opius) sierraanchaensis Fischer, 1964. Polskie Pismo Ent. 34: 346. ♂.
- similaris** Fischer. N. Y., N. C., Minn., Wash. Host: *Phytomyza delphiniae* Frost.
Opius (Opius) similaris Fischer, 1964. Polskie Pismo Ent. 34: 267. ♀, ♂.
- smithi** Fischer. D. C., Va., S. C.
Opius (Opius) smithi Fischer, 1964. Polskie Pismo Ent. 34: 410. ♀, ♂.
- southcarolinensis** Fischer. S. C.
Opius (Opius) southcarolinensis Fischer, 1964. Polskie Pismo Ent. 34: 526. ♂.
- stenopectus** Fischer. S. C.
Opius (Opius) stenopectus Fischer, 1964. Polskie Pismo Ent. 34: 461. ♂.
- striativentris** Gahan. N. Y. s. to Ga. and Ala.; Ohio, Mich., Kans. Host: *Phytomyza ilicicola* Loew, *P. ilicis* Curtis.
Opius striativentris Gahan, 1915. U. S. Natl. Mus., Proc. 49: 89. ♀, ♂.
- succineus** Gahan. Ont. and N. Y. s. to N. C., w. to Alta. Host: *Agromyza parvicornis* Loew, *Liriomyza* sp.
Opius succineus Gahan, 1913. Canad. Ent. 45: 149. ♀, ♂.

suturalis Gahan. Tex., Ariz., Nev., Calif. Host: *Haplomyza* sp., *Liriomyza* sp., *L. munda* Frick, *L. pictella* (Thomson), *L. propepusilla* Frost.

Opius suturalis Gahan, 1913. Canad. Ent. 45: 146. ♂.

sybille Fischer. D. C.

Opius sybille Fischer, 1970. Polskie Pismo Ent. 40: 807. ♀.

tabellariae Fischer. N. Y., Minn. Host: *Rhagoletis tabellaria* (Fitch).

Opius (Opius) tabellariae Fischer, 1964. Polskie Pismo Ent. 34: 305. ♀, ♂.

tablerockensis Fischer. S. C.

Opius (Opius) tablerockensis Fischer, 1964. Polskie Pismo Ent. 34: 250. ♀, ♂.

takomaanus Fischer. N. Y., Md., S. C.

Opius (Opius) takomaanus Fischer, 1965. Polskie Pismo Ent. 35: 20. ♂.

tangens Fischer. Fla.

Opius (Opius) tangens Fischer, 1964. Polskie Pismo Ent. 34: 442. ♀.

telamonis Fischer. S. C.

Opius telamonis Fischer, 1970. Polskie Pismo Ent. 40: 810. ♀.

telramundi Fischer. S. C.

Opius telramundi Fischer, 1970. Polskie Pismo Ent. 40: 815. ♀.

thalis Fischer. S. C.

Opius thalis Fischer, 1970. Polskie Pismo Ent. 40: 817. ♀.

tibialis (Ashmead). Mass. s. to Ga.; Minn. Host: *Liriomyza melanopyga* (Loew).

Adelura tibialis Ashmead, 1893. Canad. Ent. 25: 79. ♂.

Opius (Opius) extiratus Fischer, 1964. Polskie Pismo Ent. 34: 473. ♂.

Taxonomy: Marsh, 1974. Ent. Soc. Wash., Proc. 76: 287.

townesi Fischer. Md., Va.

Opius (Opius) townesi Fischer, 1965. Polskie Pismo Ent. 35: 22. ♀, ♂.

troyensis Fischer. N. Y.

Opius (Opius) troyensis Fischer, 1964. Polskie Pismo Ent. 34: 325. ♀.

turneri Gahan. N. Y., Va., S. C., Fla., Ont., Mich., Wis., Miss., Minn., Alta., B. C.

Opius turneri Gahan, 1919. Ent. Soc. Wash., Proc. 21: 163. ♀, ♂.

utahensis Gahan. Que., Mass., Del., Va., Fla., Ohio, Tenn., Minn., Iowa, S. Dak., Utah. Host:

Agromyza parvicornis Loew.

Opius utahensis Gahan, 1913. Canad. Ent. 45: 145. ♀, ♂.

virentis Fischer. Del., Va., Ohio, Mo., Kans. Host: *Melanagromyza virens* (Loew).

Opius (Opius) virentis Fischer, 1965. Polskie Pismo Ent. 35: 113. ♀, ♂.

walleyi Fischer. Fla.

Opius (Opius) walleyi Fischer, 1964. Polskie Pismo Ent. 34: 444. ♂.

wattacooanus Fischer. S. C.

Opius (Opius) wattacooanus Fischer, 1965. Polskie Pismo Ent. 35: 63. ♂.

weemsi Fischer. N. Y., N. C.

Opius (Opius) weemsi Fischer, 1964. Polskie Pismo Ent. 34: 446. ♀, ♂.

UNPLACED TAXON OF OPIINAE

Trigonospilus hopkinsi Ashmead, 1901. U. S. Natl. Mus., Proc. 23: 134. Type lost, exact generic placement uncertain.

SUBFAMILY ALYSIINAE

This subfamily, sometimes called the "exodont braconids," is characterized by widely spaced mandibles with teeth that curve outward and do not touch when closed. The hosts are dipterous larvae with pupation taking place within the host puparium. Most North American genera and species are unstudied.

Taxonomy: Griffiths, 1964. Beitr. z. Ent. 14: 830-832. —Shenefelt, 1974. Hym. Cat., part 11, p. 937-1113 (cat. World spp.).

TRIBE DACNUSINI

Griffiths (see references below) has studied the European species but also made extensive revisions of the World genera. Most of the described North American species are placed in the genera below according to his concepts

Hosts are restricted to the dipterous family Agromyzidae.

Taxonomy: Griffiths, 1964. Beitr. z. Ent. 14: 823-913 (includes diagnoses and key to World genera). —Griffiths, 1966. Beitr. z. Ent. 16: 551-605, 775-951. —Griffiths, 1967. Beitr. z. Ent. 17: 654-696. —Griffiths, 1968. Beitr. z. Ent. 18: 5-152.

Biology: Griffiths, 1964. Beitr. z. Ent. 14: 823-913. —Griffiths, 1966. Beitr. z. Ent. 16: 551-605, 775-951. —Griffiths, 1967. Beitr. z. Ent. 17: 654-696. —Griffiths, 1968. Beitr. z. Ent. 18: 5-152.

Genus CHAENUSA Haliday

Alysia subg. *Chaenusa* Haliday, 1839. Hym. Brit., fasc. 2, p. 19.

Type-species: *Bracon conjugens* Nees. Monotypic.

Chorebidea Viereck, 1914. U. S. Natl. Mus., Bul. 83: 32.

Type-species: *Alysia (Chorebus) nereidum* Haliday. Orig. desig.

Chorebidea Nixon, 1943. Ent. Monthly Mag. 79: 28. Preocc. by Viereck, 1914.

Type-species: *Alysia (Chorebus) naiadum* Haliday. Orig. desig.

Chorebidella Riegel, 1950. Ent. News 61: 125.

Type-species: *Chorebidella bergi* Riegel. Orig. desig.

Taxonomy: Griffiths, 1964. Beitr. z. Ent. 14: 847-848, 859 (generic syn. and diag.).

—Shenefelt, 1974. Hym. Cat., part 11, p. 1030-1033 (cat. World spp.).

bergi (Riegel). Conn., N. Y., Mich., Minn., Kans. Host: *Hydrellia ascita* Cress., *H. cruralis* Coq.

Chorebidella bergi Riegel, 1950. Ent. News 61: 128. ♀, ♂.

quadriceps (Ashmead). N. Y.

Brachystropha quadriceps Ashmead, 1901. N. Y. State Mus., Bul. 47: 587. ♂.

Genus CHOREBUS Haliday

Chorebus Haliday, 1833. Ent. Mag. 1: 264.

Type-species: *Bassus affinis* Nees. Desig. by Viereck, 1914. The type-species is in the sense of Haliday 1833, not 1839.

Ametria Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 274.

Type-species: *Alysia (Dacnusa) uliginosa* Haliday. Orig. desig.

Gyrocampa Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 276.

Type-species: *Bassus affinis* Nees. Orig. desig.

Stiphrocera Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 276.

Type-species: *Stiphrocera nigricornis* Foerster. Orig. desig.

Phaenolexis Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 276.

Type-species: *Alysia petiolata* Nees. Orig. desig.

Etriptes Nixon, 1943. Ent. Monthly Mag. 79: 30.

Type-species: *Alysia (Dacnusa) talaris* Haliday. Orig. desig.

Paragyrocampa Tobias, 1962. Akad. Nauk. U. S. S. R. Trudy Zool. Inst. 31: 119.

Type-species: *Paragyrocampa ophthalmica* Tobias. Orig. desig.

Taxonomy: Griffiths, 1964. Beitr. z. Ent. 14: 848-852, 859-860 (generic syn., diag.). —Griffiths, 1968. Beitr. z. Ent. 18: 113-136 (key to some Eur. spp.). —Shenefelt, 1974. Hym. Cat., part 11, p. 1033-1070 (cat. World spp.).

agromyzae (Gahan). Del., Ind. Host: *Phytobia (Poemyza) angulata* (Loew).

Dacnusa agromyzae Gahan, 1913. Canad. Ent. 45: 153. ♀, ♂.

alaskensis (Ashmead). Alaska.

Gyrocampa alaskensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 242. ♀.

aquaticus Muesebeck. Minn., Calif. Host: *Hydrellia griseola* (Fallen).

Chorebus aquaticus Muesebeck, 1950. Ent. Soc. Wash., Proc. 52: 77. ♀, ♂.

- astigmus** (Ashmead). N. Y.
Rhizarcha astigma Ashmead, 1901. N. Y. State Mus., Bul. 47: 587. ♀, ♂.
- confusus** (Ashmead). Mich.
Dacnusa confusa Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 650. ♂.
- crassitelus** (Provancher). Ont., Mich., Iowa.
Dacnusa crassitelus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 148. ♀.
- flavocinctus** (Ashmead). D. C., Tenn.
Dacnusa flavocincta Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 651. ♂.
- gracilis** (Nees). Ont., B. C.; Europe. Introduced from England. Host: *Psila (Chamaepsila) rosae* (F.).
Alysia gracilis Nees, 1834. Hym. Ichn. Aff. Monog., v. 1, p. 257. ♀, ♂.
- harringtoni** (Ashmead). Alaska.
Rhizarcha harringtoni Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 242. ♂.
- iridiculus** (Gahan). Pa., Fla. Host: *Phytobia (Dizygomyza) thompsoni* Frick. The host was misident. as *laterella* Zett.
Dacnusa iridicola Gahan, 1919. U. S. Natl. Mus., Proc. 55: 115. ♀.
- laeviceps** (Cresson). Tex.
Dacnusa laeviceps Cresson, 1872. Amer. Ent. Soc., Trans. 4: 191. ♀.
- minimus** (Cresson). Tex.
Dacnusa minima Cresson, 1872. Amer. Ent. Soc., Trans. 4: 191. ♂.
- parvus** (Provancher). Que.
Rhitigaster parvus Provancher, 1883. Nat. Canad. 14: 18. ♀.
- rondanii** (Giard). Mass.; Europe. Host: *Ophiomyia simplex* (Loew).
Dacnusa rondanii Giard, 1904. Soc. Ent. de France, Bul. 87: 181.
Dacnusa galba Nixon, 1944. Ent. Monthly Mag. 80: 90, 93. ♂.
- Taxonomy: Griffiths, 1967. Beitr. z. Ent. 17: 669-671.
- sachemellus** (Viereck). Conn.
Dacnusa sachelmella Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 213. ♀.
- spatulatus** (Provancher). Ont.
Dacnusa spatulata Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 149. ♂.

Genus COELINIDEA Viereck

- Coelinidea* Viereck, 1913. U. S. Natl. Mus., Proc. 44: 555.
 Type-species: *Stephanus niger* Nees. Orig. desig.
- Eriocoelinus* Viereck, 1913. U. S. Natl. Mus., Proc. 44: 555.
 Type-species: *Coelinus longulus* Ashmead. Orig. desig.
- Taxonomy: Griffiths, 1964. Beitr. z. Ent. 14: 844-847, 857-858 (generic syn., diag., considered as subgenus of *Coelinus* Nees). —Shenefelt, 1974. Hym. Cat., part 11, p. 1070-1074 (cat. World spp.).
- ferruginea** Gahan. Ont. s. to Mo., w. to Alta., Oreg., and Ariz. Host: *Meromyza americana* Fitch.
Coelinidea ferruginea Gahan, 1913. U. S. Natl. Mus., Proc. 46: 434. ♀, ♂.
- hopkinsii** (Ashmead). N. S. and Que. s. to Va., w. to Man., Colo., and Tex.
Coelinus Hopkinsii Ashmead, 1893. Canad. Ent. 25: 79. ♀.
- linearis** (Provancher). Que.
Microctonus linearis Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 127. ♀.
- longula** (Ashmead). Colo.
Coelinus longulus Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 651. ♂.
- meromyzae** (Forbes). Maine s. to Md., w. to Oreg. and Calif. Host: *Meromyza americana* Fitch.
Coelinus meromyzae Forbes, 1884 (1883). Noxious Ins. Ill., Rpt. 13: 26. ♀, ♂.
Coelinus nigripes Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 19. ♂. N. syn.

occom Viereck. Conn.

Coelinidea ocom Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 212. ♂.

Genus DACNUSA Haliday

Alysia subg. *Dacnusa* Haliday, 1833. Ent. Mag. 1: 264.

Type-species: *Bracon areolaris* Nees. Desig. by Muesebeck and Walkley, 1951.

Aphanta Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 273.

Type-species: *Aphanta hospita* Foerster. Orig. desig.

Agonia Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 274.

Type-species: *Alysia (Dacnusa) abdita* Haliday. Orig. desig.

Pachysema Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 274.

Type-species: *Alysia (Dacnusa) macrospila* Haliday. Orig. desig.

Brachystropha Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 274.

Type-species: *Brachystropha monticola* Foerster. Orig. desig.

Tanystropha Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 275.

Type-species: *Tanystropha haemarrhoa* Foerster. Orig. desig.

Rhizarcha Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 275.

Type-species: *Bracon areolaris* Nees. Orig. desig.

Liposcia Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 276.

Type-species: *Liposcia discolor* Foerster. Orig. desig.

Radiolaria Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 154.

Type-species: *Radiolaria clavata* Provancher. Monotypic.

Taxonomy: Griffiths, 1964. Beitr. z. Ent. 14: 853-854, 860-861 (generic syn., diag.). —Griffiths, 1966. Beitr. z. Ent. 16: 892-899 (key to Eur. spp.). —Shenefelt, 1974. Hym. Cat., part 11, p. 1081-1100 (cat. World spp.).

clavata (Provancher). Que.

Radiolaria clavata Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 155. ♀.

dubiosa (Ashmead). Alaska.

Liposcia dubiosa Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 243. ♂.

oscinidis Ashmead. Mo. Ecology: Found with *Oscinis* sp. on honeysuckle.

Dacnusa oscinidis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 650. ♀.

scaptomyzae Gahan. N. Y., Md., D. C. Host: *Scaptomyza flaveola* (Meig.).

Dacnusa scaptomyzae Gahan, 1913. Canad. Ent. 45: 150. ♀, ♂.

NOMINA NUDA IN DACNUSA HALIDAY

Pachysema americana Ashmead, 1905. In Nason, Ent. News 16: 293.

Tanystropha americana Ashmead, 1899. In Smith, Ins. of N. J., p. 586.

Dacnusa illinoisensis Ashmead, 1905. In Nason, Ent. News 16: 293.

Rhizarcha nigripes Ashmead, 1902. In Slosson, Ent. News 13: 321.

Rhizarcha rubricincta Ashmead, 1905. In Nason, Ent. News 16: 293.

Dacnusa smithii Ashmead, 1899. In Smith, Ins. of N. J., p. 586.

Genus EXOTELA Foerster

Exotela Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 274.

Type-species: *Exotela cyclogaster* Foerster. Orig. desig.

Mesora Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 275.

Type-species: *Alysia (Dacnusa) glivipes* Haliday. Orig. desig.

Toxela Nixon, 1943. Ent. Monthly Mag. 79: 29.

Type-species: *Alysia (Dacnusa) glivipes* Haliday. Orig. desig.

Antrusa Nixon, 1943. Ent. Monthly Mag. 79: 30.

Type-species: *Dacnusa melanocera* Thompson. Orig. desig.

One undescribed species occurs in North America.

Taxonomy: Griffiths, 1964. Beitr. z. Ent. 14: 854-855, 862 (generic syn., diag.). —Griffiths, 1966. Beitr. z. Ent. 16: 588-589, 876-878 (key to Eur. spp.). —Shenefelt, 1974. Hym. Cat., part 11, p. 1101-1105 (cat. World spp.).

Genus SYMPHYA Foerster

Aenone Haliday, 1838. Ent. Mag. 5: 214. Preocc. by Lamarck, 1818.

Type-species: *Sigalphus mandibularis* Nees. Desig. by Westwood, 1839.

Oenone Haliday, 1839. Hym. Brit. 2: 3. Emend. Preocc. by Lamarck, 1818.

Symphya Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 273.

Type-species: *Sigalphus mandibularis* Nees. Orig. desig.

Taxonomy: Rohwer, 1914. Ent. News 25: 168-172 (No. Amer. spp.). —Griffiths, 1964. Beitr. z.

Ent. 14: 858-859 (generic syn., diag.). —Shenefelt, 1974. Hym. Cat., part 11, p. 1109-1111 (cat. World spp.).

agromyzae Rohwer. Conn., N. Y., D. C. Host: *Phytobia pruinosa* (Coq.).

Symphya(!) *agromyzae* Rohwer, 1914. Ent. News 25: 171. ♀.

belfragei (Ashmead). Tex.

Oenone belfragei Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 649. ♀, ♂.

lucida Rohwer. Wash.

Symphya(!) *lucida* Rohwer, 1914. Ent. News 25: 169. ♂.

nigricornis Rohwer. Colo.

Symphya(!) *nigricornis* Rohwer, 1914. Ent. News 25: 170. ♀.

portlandica Rohwer. Minn., Oreg.

Symphya(!) *portlandica* Rohwer, 1914. Ent. News 25: 170. ♂.

sericea (Provancher). Ont., W. Va., Mich.

Oenone sericea Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 394. ♀.

TRIBE ALYSIINI

Taxonomy: Fischer, 1971. Polskie Pismo Ent. 41: 22-25 (key to World genera).

Genus ALYSIA Latreille

Alysia Latreille, 1804. Nouv. Dict. Hist. Nat., v. 24, p. 173.

Type-species: *Ichneumon manducator* Panzer. Monotypic.

Cechenus Illiger, 1807. In Rossi, Fauna Etrusca, v. 2, p. 54.

Type-species: *Ichneumon manducator* Panzer. Monotypic.

Bassus Nees, 1814 (1812). Mag. Gesell. Naturf. Freunde Berlin 6: 201.

Type-species: *Ichneumon manducator* Panzer. Desig. by Muesebeck and Walkley, 1951.

Epiclista Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 264.

Type-species: *Epiclista erythrogaster* Foerster. Orig. desig.

Goniarcha Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 265.

Type-species: *Alysia lucicola* Haliday. Orig. desig.

Anarcha Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 265.

Type-species: *Anarcha notabilis* Foerster. Orig. desig.

Strophaea Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 265.

Type-species: *Alysia rufidens* Nees. Orig. desig.

Revision: Fischer, 1971. Polskie Pismo Ent. 41: 25-59 (some Eur. spp.).

Taxonomy: Fischer, 1971. Polskie Pismo Ent. 41: 25 (generic syn.). —Shenefelt, 1974. Hym.

Cat., part 11, p. 939-955 (cat. World spp.).

alticola (Ashmead). Que., Colo., B. C., Oreg., Calif.

Pentapleura alticola Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 18. ♀.

amabilis Dalla Torre. "North America."

Alysia fuscipennis Brulle, 1846. In Lepeletier, Hist. Nat. Ins., Hym., v. 4, p. 516. ♂.

Preocc. by Haliday, 1838.

Alysia amabilis Dalla Torre, 1898. Cat. Hym., v. 4, p. 44. N. name for *fuscipennis* Brulle.

cariosa Marsh. Tex., Ariz. Ecology: Found with carrion-infesting flies.

Alysia cariosa Marsh, 1968. Ent. Soc. Wash., Proc. 70: 209. ♀, ♂.

- Biology: Lindquist, 1932. Jour. Econ. Ent. 25: 414-415 (as *Alysia ridibunda* Say). — Roberts, 1935. Jour. Agr. Res. 50: 481-484 (as *Alysia ridibunda* Say). — Lindquist, 1940. Ent. Soc. Amer., Ann. 33: 104-112 (as *Alysia ridibunda* Say).
- coxalis* (Ashmead). Alaska.
Anarcha coxalis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 241. ♂.
- fossulata* Provancher. Alaska, Calif. Host: Blow flies.
Alysia fossulata Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 391. ♀.
- Biology: Roberts, 1935. Jour. Agr. Res. 50: 484.
- lucens* Provancher. Canada.
Alysia lucens Provancher, 1881. Nat. Canad. 12: 202. ♀.
- manducator* (Panzer). Europe; Greenland.
Ichneumon manducator Panzer, 1799. Faune Ins. German., heft 72, no. 4. ♀.
- micans* (Viereck). N. Mex.
Anarcha micans Viereck, 1903. Amer. Ent. Soc., Trans. 29: 93. ♀.
- ridibunda* Say. Ont. s. to Fla., w. to Kans. and Tex. Host: *Oxysarcodexia ventricosa* (Wulp); dung-feeding flies. All references to *Alysia ridibunda* Say as a parasite of carrion-feeding flies refer to *Alysia cariosa* Marsh.
Alysia ridibunda Say, 1828. Contrib. Maclur. Lyc. Phila. 1: 77. ♂.
Opius macrocephalus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 123. ♀.
- Taxonomy: Burgess and Wingo, 1968. Ent. Soc. Wash., Proc. 70: 207. — Marsh, 1968. Ent. Soc. Wash., Proc. 70: 208-209.
- Biology: Burgess and Wingo, 1968. Ent. Soc. Wash., Proc. 70: 204-208 (host indicated as *Ravinia assidua* (Wlkr.) which is a misident. of *Oxysarcodexia ventricosa* (Wulp)).

Genus APHAERETA Foerster

- Aphaereta* Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 264.
 Type-species: *Alysia cephalotes* Haliday. Orig. desig.
- Trichesia* Provancher, 1881. Nat. Canad. 12: 203.
 Type-species: *Trichesia auripes* Provancher. Monotypic.
- Trinaria* Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 149.
 Type-species: *Trinaria pilicornis* Provancher. Monotypic.
- Aphaerete* Dalla Torre, 1898. Cat. Hym., v. 4, p. 41. Emend.
- Revision: Fischer, 1966. Reichenbachia 6: 155-173 (No. Amer. spp.).
- Taxonomy: Shenefelt, 1974. Hym. Cat., part 11, p. 956-964 (cat. World spp.).
- colei* Marsh. Mass., Conn., Pa. Host: *Aulacigaster leucopeza* (Meig.).
Aphaereta colei Marsh, 1969. Ent. Soc. Wash., Proc. 71: 418. ♀, ♂.
- dipterica* Fischer. Newfoundland, Md. Ecology: Found with "Diptera in shell of snail."
Aphaereta dipterica Fischer, 1966. Reichenbachia 6: 156. ♀, ♂.
- excavata* McComb. Ga. Host: *Sarcophaga* sp.
Aphaereta excavata McComb, 1960. Ent. News 71: 176. ♀, ♂.
- genevensis* Fischer. N. Y. Host: Dryomyzidae?
Aphaereta genevensis Fischer, 1966. Reichenbachia 6: 161. ♀, ♂.
- ithacensis* Fischer. N. Y.
Aphaereta ithacensis Fischer, 1966. Reichenbachia 6: 162. ♀, ♂.
- juddi* Fischer. Ont., Mich., Ohio. Ecology: In "puparium in snail."
Aphaereta juddi Fischer, 1966. Reichenbachia 6: 164. ♀, ♂.
- masoni* McComb. Ont., Utah, Idaho. Host: *Cordilura* sp.
Aphaereta masoni McComb, 1960. Ent. News 71: 177. ♀, ♂.
- muesebecki* Marsh. Va., Ky., S. C., Ga., Fla., Miss., Ark. Host: *Fannia canalicularis* (L.), *Musca domestica* L.
Aphaereta muesebecki Marsh, 1969. Ent. Soc. Wash., Proc. 71: 417. ♀, ♂.
Aphaereta soronastes Mason, 1971. Ent. Soc. Wash., Proc. 73: 139. ♀, ♂.

pallipes (Say). North America; Hawaii. Host: *Atrichomelina pubera* (Loew), *Blaesoxipha kellyi* (Aldr.), *Calycomyza jucunda* (Wulp), *Haematobia irritans* (L.), *Helicobia rapax* (Wlkr.), *Hylemya antiqua* (Meig.), *H. brassicae* (Bouche), *H. platyura* (Meig.), *Lucilia* sp., *Musca autumnalis* DeG., *M. domestica* L., *Muscina assimilis* (Fallen), *Orthiellia caesarion* (Meig.), *Orysarcodexia ventricosa* (Wulp), *Ravinia derelicta* (Wlkr.), *R. latisetosa* Parker, *R. lherminieri* (Rob.-Desv.), *R. querula* (Wlkr.), *Sarcophaga aldrichi* Parker, *S. houghi* Aldr., *Tritoxa flexa* (Wied.).

Alysia pallipes Say, 1828. Contrib. Maclur. Lye. Phila. 1: 77.

Trichesia auripes Provancher, 1881. Nat. Canad. 12: 203. ♀, ♂.

Tinaria pilicornis Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 149. ♀.

Aphaereta muscae Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 646. ♀, ♂.

Aphaereta californica Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 647. ♀.

Aphaereta oscinidis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 647. ♀.

Aphaereta pallidipes Dalla Torre, 1898. Cat. Hym., v. 4, p. 42. Emend.

Aphaereta delosa Viereck, 1905. Kans. Acad. Sci., Trans. 19: 283. ♀, ♂.

Aphaereta subtricarinata Viereck, 1905. Kans. Acad. Sci., Trans. 19: 283. ♀.

Aphaereta pegomyiae Brues, 1907. Extr. MS. Rpt. Minn. State Ent., p. 4. ♀, ♂.

Aphaereta sarcophagae Gahan, 1914. U. S. Natl. Mus., Proc. 48: 158. ♀, ♂.

Taxonomy: McComb, 1958. Ent. Soc. Wash., Proc. 60: 223-224.

Biology: Salkeld, 1959. Canad. Ent. 91: 93-97. — Hauser and Wingo, 1967. Jour. Econ. Ent. 60: 731-733. — Thomas and Wingo, 1968. Jour. Econ. Ent. 61: 148-152.

Morphology: Salkeld, 1959. Canad. Ent. 91: 93-97 (larvae).

scirpi Fischer. Mich. Host: Diptera, unknown species in *Scirpus occidentalis* Chase.

Aphaereta scirpi Fischer, 1966. Reichenbachia 6: 170. ♀, ♂.

varipedis Fischer. N. Y., Va., W. Va. Host: *Cordilura varipes* (Wlkr.).

Aphaereta varipedis Fischer, 1966. Reichenbachia 6: 171. ♀, ♂.

Genus ASOBARA Foerster

Asobara Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 267.

Type-species: *Alysia tabida* Nees. Orig. desig.

Spanista Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 267.

Type-species: *Spanista rufescens* Foerster. Orig. desig.

Taxonomy: Fischer, 1971. Polskie Pismo Ent. 41: 68. — Shenefelt, 1974. Hym. Cat., part 11, p. 964-966 (cat. World spp.).

fungicola (Ashmead). Conn., Ohio, Ill.

Phaenocarpa (*Spanista*) *fungicola* Ashmead, 1894. Cincinnati Soc. Nat. Hist., Jour. 17: 49. ♂.

Asobara lineata Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 213. ♀.

tabida (Nees). Conn., Pa.; Europe. Host: *Drosophila melanogaster* Meig.

Alysia tabida Nees, 1834. Hym. Ich. Aff. Monog., v. 1, p. 252. ♀.

Spanista rufescens Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 267.

Alysia anomala Thomson, 1895. Opusc. Ent., fasc. 20, p. 2290. ♀.

Genus SPILOTA Foerster

Aspilota Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 268.

Type-species: *Alysia ruficornis* Nees. Orig. desig.

Dinotrema Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 268.

Type-species: *Dinotrema erythroga* Foerster. Orig. desig.

Spanomeris Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 268.

Type-species: *Spanomeris pullo* Foerster. Orig. desig.

Dipiesta Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 268.

Type-species: *Alysia compressa* Haliday. Orig. desig.

Panerema Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 263.

Type-species: *Panerema inops* Foerster. Orig. desig.

Scotoneurus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 152, 156.

Type-species: *Scotoneurus stenostigma* Provancher. Desig. by Gahan, 1913.

Revision: Fischer, 1969. Acta Ent. Mus. Natl. Pragae 38: 91-114. — Fischer, 1969. Ent. Soc. Wash., Proc. 71: 361-368. — Fischer, 1969. Portici Lab. Ent. Agr., Bol. 27: 55-78. — Fischer, 1969. Osterr. Akad. Wiss. Math.-Nat. Kl., Sitzber. 178: 243-259. — Fischer, 1969. Redia 51: 187-209. — Fischer, 1970. Naturhist. Mus. Wien, Ann. 74: 91-127. All above references are to No. Amer. spp.

Taxonomy: Fischer, 1969. Acta Ent. Mus. Natl. Pragae 38: 91 (generic syn.). — Shenefelt, 1974. Hym. Cat., part 11, p. 966-982 (cat. World spp.).

acutistigma Fischer. Alaska.

Aspilota acutistigma Fischer, 1969. Redia 51: 191. ♂.

alexanderi Fischer. Newfoundland.

Aspilota alexanderi Fischer, 1969. Acta Ent. Mus. Natl. Pragae 38: 100. ♂.

angusticornis Fischer. Newfoundland, Md., Colo.

Aspilota angusticornis Fischer, 1969. Acta Ent. Mus. Natl. Pragae 38: 102. ♀, ♂.

armillariae Fischer. D. C., Va. Ecology: Bred from the fungi *Armillaria mellea* (Vahl ex Fr.) Kumm. and *Clitocybe* (probably *Clitocybe*).

Aspilota armillariae Fischer, 1969. Redia 51: 194. ♀.

astigma (Provancher). Que., Pa., Md., Mich., Colo.

Alysia astigma Provancher, 1883. Nat. Canad. 14: 18. ♀.

Aspilota astigma Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 393. ♀.

astoriensis Fischer. Ore.

Aspilota astoriensis Fischer, 1969. Redia 51: 196. ♀.

bakeri Fischer. Mass.

Aspilota bakeri Fischer, 1969. Redia 51: 199. ♀.

brachybasis Fischer. Md.

Aspilota brachybasis Fischer, 1969. Portici Lab. Ent. Agr., Bol. 27: 60. ♀.

bucculatricis Fischer. Newfoundland, Maine.

Aspilota bucculatricis Fischer, 1969. Portici Lab. Ent. Agr., Bol. 27: 60. ♀.

capitata Fischer. Md.

Aspilota capitata Fischer, 1969. Osterr. Akad. Wiss. Math.-Nat. Kl., Sitzber. 178: 245. ♀.

caudatula Fischer. Md., Ga., Mich., Wis., Ill., Kans., Colo.

Aspilota caudatula Fischer, 1969. Osterr. Akad. Wiss. Math.-Nat. Kl., Sitzber. 178: 247. ♀, ♂.

claricornis Fischer. Fla., Colo.

Aspilota claricornis Fischer, 1969. Osterr. Akad. Wiss. Math.-Nat. Kl., Sitzber. 178: 249. ♀.

clayensis Fischer. Fla.

Aspilota clayensis Fischer, 1969. Acta Ent. Mus. Natl. Pragae 38: 103. ♀.

columbiana Viereck. Kans.

Aspilota columbiana Viereck, 1905. Kans. Acad. Sci., Trans. 19: 282. ♀.

communis Fischer. Maine, Mass., Ill.

Aspilota communis Fischer, 1969. Osterr. Akad. Wiss. Math.-Nat. Kl., Sitzber. 178: 250. ♀, ♂.

compressigaster Fischer. Md.

Aspilota compressigaster Fischer, 1969. Ent. Soc. Wash., Proc. 71: 363. ♀.

convexula Fischer. Colo.

Aspilota convexula Fischer, 1970. Naturhist. Mus. Wien, Ann. 74: 109. ♂.

cultrata Fischer. Md.

Aspilota cultrata Fischer, 1970. Naturhist. Mus. Wien, Ann. 74: 111. ♀.

curtibasis Fischer. Md.

Aspilota curtibasis Fischer, 1970. Naturhist. Mus. Wien, Ann. 74: 113. ♀.

disstriae Fischer. Vt.

Aspilota disstriae Fischer, 1969. Acta Ent. Mus. Natl. Pragae 38: 105. ♀.

- divergens** Fischer. W. Va., Mich.
Aspilota divergens Fischer, 1970. Naturhist. Mus. Wien, Ann. 74: 95. ♀.
- dreisbachi** Fischer. Mich., Ill.
Aspilota dreisbachi Fischer, 1969. Acta Ent. Mus. Natl. Pragae 38: 107. ♀.
- ephemera** Viereck. Conn.
Aspilota ephemera Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 213. ♂.
- fasciatae** Fischer. N. J., Md., Colo. Host: *Phalacrotophora epeirae* (Brues). Original description states host as *Phora fasciata* which is a misidentification of *Phalacrotophora epeirae*.
Aspilota fasciatae Fischer, 1970. Naturhist. Mus. Wien, Ann. 74: 99. ♀, ♂.
- floridensis** Shenefelt. Fla.
Aspilota cubiceps Fischer, 1969. Acta Ent. Mus. Natl. Pragae 38: 92. ♀. Preocc. by Bischoff, 1932.
Aspilota floridensis Shenefelt, 1974. Hym. Cat., part 11, p. 972. N. name for *cubiceps* Fischer.
- foliformis** Fischer. Ala.
Aspilota foliformis Fischer, 1969. Acta Ent. Mus. Natl. Pragae 38: 108. ♀.
- foutsii** Fischer. Md.
Aspilota foutsii Fischer, 1970. Naturhist. Mus. Wien, Ann. 74: 115. ♀.
- girlanda** Fischer. N. Y.
Aspilota girlanda Fischer, 1970. Naturhist. Mus. Wien, Ann. 74: 118. ♂.
- insularis** Fischer. B. C.
Aspilota insularis Fischer, 1969. Ent. Soc. Wash., Proc. 71: 365. ♀.
- krombeini** Fischer. Md.
Aspilota krombeini Fischer, 1970. Naturhist. Mus. Wien, Ann. 74: 120. ♀.
- latitergum** Fischer. Md.
Aspilota latitergum Fischer, 1969. Osterr. Akad. Wiss. Math.-Nat. Kl., Sitzber. 178: 252. ♀.
- lobidens** Fischer. Fla.
Aspilota lobidens Fischer, 1970. Naturhist. Mus. Wien, Ann. 74: 97. ♀.
- longibasis** Fischer. Md.
Aspilota longibasis Fischer, 1969. Redia 51: 201. ♂.
- melabasis** Fischer. Colo.
Aspilota melabasis Fischer, 1969. Portici Lab. Ent. Agr., Bol. 27: 65. ♀.
- miraculosa** Fischer. Md.
Aspilota miraculosa Fischer, 1969. Ent. Soc. Wash., Proc. 71: 366. ♂.
- ordinaria** Fischer. Md., Va., Colo.
Aspilota ordinaria Fischer, 1970. Naturhist. Mus. Wien, Ann. 74: 122. ♀, ♂.
- parallela** Fischer. Md.
Aspilota parallela Fischer, 1970. Naturhist. Mus. Wien, Ann. 74: 101. ♂.
- parvistigma** Fischer. Md.
Aspilota parvistigma Fischer, 1970. Naturhist. Mus. Wien, Ann. 74: 103. ♂.
- paupera** Fischer. Md., D. C., Va., Colo.
Aspilota paupera Fischer, 1969. Acta Ent. Mus. Natl. Pragae 38: 110. ♀, ♂.
- petiolata** (Provancher). Que., N. Y., Wis.
Rhopalophorus petiolatus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 128. ♀.
Ischnocarpa atricornis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 648. ♀, ♂.
- phyllotomae** Fischer. Maine, Mich.
Aspilota phyllotomae Fischer, 1970. Naturhist. Mus. Wien, Ann. 74: 124. ♀, ♂.
- saileri** Fischer. Conn., Md.
Aspilota saileri Fischer, 1969. Redia 51: 203. ♀.
- shannoni** Fischer. Md.
Aspilota shannoni Fischer, 1969. Portici Lab. Ent. Agr., Bol. 27: 69. ♀.

signifrons (Viereck). Ind., Wis., Kans.

Dinotrema signifrons Viereck, 1906. Amer. Ent. Soc., Trans. 32: 177. ♂.

sinibasis Fischer. Colo.

Aspilota sinibasis Fischer, 1969. Portici Lab. Ent. Agr., Bol. 27: 72. ♀.

sitkensis (Ashmead). Alaska.

Delocarpa sitkensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 242. ♀.

smithi Fischer. N. J.

Aspilota smithi Fischer, 1969. Redia 51: 206. ♀, ♂.

stenostigma (Provancher). Mass., Md., Ont., Wis.

Scotoneurus stenostigma Provancher, 1886. Addit. Corr. Faune. Ent. Canada Hym., p. 157. ♀.

subcompressa (Ashmead). Calif.

Adelura subcompressa Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 647. ♀.

subcubicus Fischer. Md.

Aspilota subcubicus Fischer, 1969. Acta Ent. Mus. Natl. Pragae 38: 112. ♀, ♂.

supramedia Fischer. Va.

Aspilota supramedia Fischer, 1969. Portici Lab. Ent. Agr., Bol. 27: 76. ♀.

sylvaticae Fischer. Iowa. Ecology: "Reared from larva in rotting *Collybia radicata*."

Aspilota sylvaticae Fischer, 1969. Osterr. Akad. Wiss. Math.-Nat. Kl., Sitzber. 178: 256. ♀, ♂.

Genus DAPSILARTHRA Foerster

Dapsilarthra Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 267.

Type-species: *Alysia apii* Curtis. Orig. desig.

Adelura Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 267. Preocc. by Bonapart, 1854.

Type-species: *Alysia florimela* Haliday. Orig. desig.

Opisendea Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 266.

Type-species: *Opisendea tenuicornis* Foerster. Orig. desig.

Grammospila Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 269.

Type-species: *Alysia isabella* Haliday. Orig. desig.

Adelurolo Strand, 1928 (1926). Arch. Naturgesch. 92 (A) (8): 51. N. name for *Adelura* Foerster.

Neocarpa Fischer, 1966. Naturh. Mus. Wien, Ann. 69: 185.

Type-species: *Neocarpa amplidens* Fischer. Orig. desig.

Taxonomy: Fischer, 1971. Polskie Pismo Ent. 41: 76.

americana (Brues). Wis.

Orthostigma americana Brues, 1907. Wis. Nat. Hist. Soc., Bul. 5: 59. ♀.

Taxonomy: Fischer, 1973. Naturh. Mus. Wien, Ann. 77: 256-258 (redescr.).

barthii (Brues). Wis. Host: *Temnostoma bombylans* (F.).

Asobara barthii Brues, 1907. Wis. Nat. Hist. Soc., Bul. 5: 57. ♀, ♂.

Taxonomy: Fischer, 1973. Naturh. Mus. Wien, Ann. 77: 258-260 (redescr.).

rufiventris (Nees). Calif.

Bassus rufiventris Nees, 1814 (1812). Mag. Gesell. Naturf. Freunde Berlin 6: 213. ♀.

Alysia (Alysia) flaviventris Haliday, 1838. Ent. Mag. 5: 240. ♀.

Alysia (Phaenocarpa) gracilicornis Thomson, 1895. Opusc. Ent., fasc. 20, p. 2283. ♀, ♂.

Genus DINOSTIGMA Fischer

Dinostigma Fischer, 1966. Naturhist. Mus. Wien, Ann. 69: 182.

Type-species: *Dinostigma mueesebecki* Fischer. Orig. desig.

muesebecki Fischer. Pa.

Dinostigma mueesebecki Fischer, 1969. Naturhist. Mus. Wien, Ann. 69: 183. ♀.

Genus GLYPHOGASTER Muesebeck and Walkley

Glyphogaster Muesebeck and Walkley, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2, p. 148.

Type-species: *Acrobela tachinae* Ashmead. Orig. desig.

tachinae (Ashmead). Maine, N. H., Conn.

Acrobela tachinae Ashmead, 1898 (1897). Ent. Soc. Wash., Proc. 4: 170. ♀.

Genus HOPLITALYSIA Ashmead

Hoplitalysia Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 105.

Type-species: *Hoplitalysia slossonae* Ashmead. Orig. desig.

slossonae Ashmead. W. Va., Fla., Tex.

Hoplitalysia slossonae Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 105.

Genus IDIASTA Foerster

Idiasta Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 265.

Type-species: *Alysia maritima* Haliday. Orig. desig.

Rhacalysia Cameron, 1910. Wien. Ent. Ztg. 29: 9.

Type-species: *Rhacalysia rufobalteata* Cameron. Monotypic.

Taxonomy: Konigsmann, 1960. Beitr. z. Ent. 10: 624-654. —Shenefelt, 1974. Hym. Cat., part 11, p. 993-995 (cat. World spp.).

longicornis (Provancher). Ont.

Rhopalophorus longicornis Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 129. ♀.

Alysia completa Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 147. ♀.

macrocera Ashmead. N. H., Ont., Mich., Colo., B. C.

Idiasta macrocera Ashmead, 1891. Canad. Ent. 23: 5. ♂.

provancheri (Dalla Torre). Que.

Alysia nigriceps Provancher, 1881. Nat. Canad. 12: 203. ♀. Preocc. by Cresson, 1865.

Alysia provancheri Dalla Torre, 1898. Cat. Hym., v. 4, p. 48. N. name for *nigriceps* Provancher.

Genus OENONOGASTRA Ashmead

Oenonogastra Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 105.

Type-species: *Mesocrina microrhopalae* Ashmead. Orig. desig.

microrhopalae (Ashmead). N. Y. s. to Fla., w. to Iowa and Tex. Host: *Calycomyza ipomaeae* (Frost). The record of *Microrhopala xerene* (Newn.) (Coleoptera) as a host is undoubtedly an error.

Mesocrina microrhopalae Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 217. ♂.

Taxonomy: Fischer, 1967. Naturhist. Mus. Wien, Ann. 70: 128-130 (redescr.).

Genus ORTHOSTIGMA Ratzeburg

Orthostigma Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 53.

Type-species: *Aphidius flavipes* Ratzeburg. Monotypic.

Ischnocarpa Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 268.

Type-species: *Alysia pumila* Nees. Orig. desig.

Delocarpa Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 268.

Type-species: *Delocarpa praedo* Foerster. Orig. desig.

Revision: Fischer, 1969. Acta Ent. Mus. Natl. Pragae 38: 82-90 (No. Amer. spp.).

Taxonomy: Shenefelt, 1974. Hym. Cat., part 11, p. 997-1001 (cat. World spp.).

crassinervis (Fischer), n. comb. Mo.

Aspilota crassinervis Fischer, 1969. Acta Ent. Mus. Natl. Pragae 38: 94. ♂.

dyari Fischer. B. C.

Orthostigma dyari Fischer, 1969. Acta Ent. Mus. Natl. Pragae 38: 83. ♀.

monotonum Fischer. Md.*Orthostigma monotonum* Fischer, 1969. Acta Ent. Mus. Natl. Pragae 38: 85. ♀.**ovalis** (Provancher). Que.*Rhitigaster ovalis* Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 146. ♀.**prebbliei** Fischer. N. S.*Orthostigma prebbliei* Fischer, 1969. Acta Ent. Mus. Natl. Pragae 38: 87. ♀.**sculleni** Fischer. Oreg.*Orthostigma sculleni* Fischer, 1969. Acta Ent. Mus. Natl. Pragae 38: 88. ♀.**sheldoni** (Fischer), n. comb. N. Y., N. J., Md., Colo.*Aspilota sheldoni* Fischer, 1969. Acta Ent. Mus. Natl. Pragae 38: 95. ♀, ♂.**terryvillensis** (Fischer), n. comb. Conn.*Aspilota terryvillensis* Fischer, 1969. Acta Ent. Mus. Natl. Pragae 38: 97. ♀.**Genus PENTAPLEURA Foerster***Pentapleura* Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 264.Type-species: *Bassus pumilo* Nees. Orig. desig.*Gnathospila* Fischer, 1966. Naturhist. Mus. Wien, Ann. 69: 210.Type-species: *Gnathospila quadridens* Fischer. Orig. desig.

Taxonomy: Fischer, 1971. Polskie Pismo Ent. 41: 126-130 (Eur. spp.). —Shenefelt, 1974. Hym. Cat., part 11, p. 1001-1003 (cat. World spp.).

foveolata Viereck. Conn.*Pentapleura foveolata* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 213. ♂.**quadridens** (Fischer). Colo.*Gnathospila quadridens* Fischer, 1966. Naturhist. Mus. Wien, Ann. 69: 210. ♀.**triticaphis** (Fitch). N. Y., Colo., Calif.*Toxares triticaphis* Fitch, 1861 (1860). N. Y. State Agr. Soc., Trans. 20: 840.**Genus PHAENOCARPA Foerster***Phaenocarpa* Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 267.Type-species: *Alysia picinervis* Haliday. Orig. desig.*Homophyla* Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 266.Type-species: *Alysia pullata* Haliday. Orig. desig.*Mesothesis* Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 266.Type-species: *Mesothesis bicolor* Foerster. Orig. desig.*Asynaphes* Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 150.Type-species: *Asynaphes aciculata* Provancher. Desig. by Viereck, 1914.*Kahlia* Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 107.Type-species: *Kahlia flavipes* Ashmead. Orig. desig.*Holcalysia* Cameron, 1905 (not 1910). Entomologist 38: 268.Type-species: *Holcalysia testaceipes* Cameron. Monotypic.*Stiralysia* Cameron, 1910. Wien. Ent. Ztg. 29: 7.Type-species: *Stiralysia testaceiventris* Cameron. Monotypic.

Revision: Papp, 1966. Acta Zool. Acad. Sci. Hung. 12: 133-144 (Afr. spp.). —Papp, 1967. Reichenbachia 8: 139-157 (Orient. spp.). —Papp, 1968. Beitr. z. Ent. 18: 569-603 (some Eur. spp.). —Papp, 1969. Acta Zool. Acad. Sci. Hung. 15: 379-389 (Neotr. spp.). —Fischer, 1970. Ztschr. f. Angew. Ent. 57: 409-498 (Eur. spp.). —Fischer, 1974. Polskie Pismo Ent. 44: 103-230 (some No. Amer. spp.). —Fischer, 1975. Polskie Pismo Ent. 45: 279-356 (remainder of No. Amer. spp.).

Taxonomy: Shenefelt, 1974. Hym. Cat., part 11, p. 1003-1017 (cat. World spp.).

aciculata (Provancher). Ont.*Asynaphes aciculata* Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 150. ♀.**acutinotum** Fischer. Md.*Phaenocarpa acutinotum* Fischer, 1974. Polskie Pismo Ent. 44: 109. ♀.

- amara** Fischer. N. Y., Md., D. C., N. C., S. C., Calif., Alaska.
Phaenocarpa amara Fischer, 1975. Polskie Pismo Ent. 45: 283. ♀, ♂.
- angustifossa** Fischer. Labrador, Mich.
Phaenocarpa angustifossa Fischer, 1975. Polskie Pismo Ent. 45: 286. ♀, ♂.
- antichaetae** Fischer. N. Y. Host: *Antichaeta melanosoma* Melander.
Phaenocarpa antichaetae Fischer, 1974. Polskie Pismo Ent. 44: 112. ♀, ♂.
- aristarchi** Fischer. Md.
Phaenocarpa aristarchi Fischer, 1974. Polskie Pismo Ent. 44: 114. ♂.
- astigmatica** Fischer. N. C., Wash.
Phaenocarpa astigmatica Fischer, 1974. Polskie Pismo Ent. 44: 119. ♀.
- basirufa** Fischer. N. C.
Phaenocarpa basirufa Fischer, 1974. Polskie Pismo Ent. 44: 122. ♀, ♂.
- bellatrix** Fischer. N. Mex., Alaska.
Phaenocarpa bellatrix Fischer, 1975. Polskie Pismo Ent. 45: 288. ♀, ♂.
- benjaminica** Fischer. N. C.
Phaenocarpa benjaminica Fischer, 1974. Polskie Pismo Ent. 44: 125. ♀.
- brachyptera** Fischer. Ill., Calif.
Phaenocarpa brachyptera Fischer, 1974. Polskie Pismo Ent. 44: 127. ♀, ♂.
- brevicauda** (Provancher). Que., Va., Mich., Iowa, N. Dak., S. Dak., Colo. Host: *Ravinia* (*Chaetoravinia*) *assidua* (Wlkr.).
Asynaphes brevicuda Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 150. ♀.
- bruesi** Marsh. Minn. Host: *Hylemya brassicae* (Bouche).
Mesocrina pegomyiae Brues, 1907. Extr. MS. Rpt. Minn. State Ent., p. 3. Preocc. by Marshall, 1898.
Phaenocarpa bruesi Marsh, 1974. In Shenefelt, Hym. Cat., part 11, p. 1005. N. name for *pegomyiae* Brues.
- Taxonomy: Fischer, 1973. Naturh. Mus. Wien, Ann. 77: 252 (redescr.).
- brunnicornis** Fischer. Mich.
Phaenocarpa brunnicornis Fischer, 1974. Polskie Pismo Ent. 44: 132. ♀.
- californica** Fischer. Calif., Alaska.
Phaenocarpa californica Fischer, 1974. Polskie Pismo Ent. 44: 134. ♀, ♂.
- caudata** (Provancher). Ont.
Alysia caudata Provancher, 1881. Nat. Canad. 12: 202. ♀.
- cellularis** Fischer. N. Y. s. to N. C., w. to Mich.
Phaenocarpa cellularis Fischer, 1974. Polskie Pismo Ent. 44: 137. ♀, ♂.
- cephalotes** Fischer. Ont.
Phaenocarpa cephalotes Fischer, 1975. Polskie Pismo Ent. 45: 291. ♂.
- collorufa** Fischer. N. H.
Idiolexis collaris Ashmead, 1902. In Slosson, Ent. News 13: 321. Nom. nud.
Phaenocarpa collarufa Fischer, 1974. Polskie Pismo Ent. 44: 140. ♀.
- compressigaster** Fischer. Oreg.
Phaenocarpa compressigaster Fischer, 1974. Polskie Pismo Ent. 44: 142. ♀.
- conjuncta** Fischer. Wash.
Phaenocarpa conjuncta Fischer, 1974. Polskie Pismo Ent. 44: 145. ♂.
- convergens** Fischer. Alaska.
Phaenocarpa convergens Fischer, 1974. Polskie Pismo Ent. 44: 147. ♀.
- convexinotum** Fischer. Alaska.
Phaenocarpa convexinotum Fischer, 1975. Polskie Pismo Ent. 45: 293. ♂.
- costata** Fischer. Va., N. C.
Phaenocarpa costata Fischer, 1974. Polskie Pismo Ent. 44: 150. ♀, ♂.
- costulata** Fischer. Mich., Oreg., Alaska.
Phaenocarpa costulata Fischer, 1974. Polskie Pismo Ent. 44: 152. ♀, ♂.
- curvata** Fischer. Mich.
Phaenocarpa curvata Fischer, 1974. Polskie Pismo Ent. 44: 155. ♂.

curvirens Fischer. Alaska.*Phaenocarpa curvirens* Fischer, 1975. Polskie Pismo Ent. 45: 295. ♂.**differentiata** Fischer. Alaska.*Phaenocarpa differentiata* Fischer, 1975. Polskie Pismo Ent. 45: 298. ♀, ♂.**disjuncta** Fischer. Pa., Md., Va., Mich.*Phaenocarpa disjuncta* Fischer, 1974. Polskie Pismo Ent. 44: 157. ♀, ♂.**distinguenda** Fischer. Colo.*Phaenocarpa distinguenda* Fischer, 1974. Polskie Pismo Ent. 44: 160. ♂.**distributa** Fischer. Que., N. Y., Pa., Mich.*Phaenocarpa distributa* Fischer, 1974. Polskie Pismo Ent. 44: 162. ♀, ♂.**divergens** Fischer. N. Y., Va., Ky., B. C., Calif.*Phaenocarpa divergens* Fischer, 1975. Polskie Pismo Ent. 45: 301. ♀, ♂.**divisa** Fischer. Md.*Phaenocarpa divisa* Fischer, 1974. Polskie Pismo Ent. 44: 166. ♀.**drosophilae** Fischer. Alaska. Host: *Drosophila melanogaster* Meig.*Phaenocarpa drosophilae* Fischer, 1975. Polskie Pismo Ent. 45: 303. ♀, ♂.**excisa** Fischer. S. C.*Phaenocarpa excisa* Fischer, 1974. Polskie Pismo Ent. 44: 168. ♂.**fervida** Fischer. Wash., Oreg., Calif.*Phaenocarpa fervida* Fischer, 1975. Polskie Pismo Ent. 45: 306. ♀, ♂.**flammea** Fischer. Colo.*Phaenocarpa flammea* Fischer, 1975. Polskie Pismo Ent. 45: 309. ♂.**gaspeensis** Fischer. Que.*Phaenocarpa gaspeensis* Fischer, 1974. Polskie Pismo Ent. 44: 171. ♂.**hicoriae** Fischer. Pa.*Phaenocarpa hicoriae* Fischer, 1974. Polskie Pismo Ent. 44: 173. ♀.**horribilis** Fischer. Colo.*Phaenocarpa horribilis* Fischer, 1974. Polskie Pismo Ent. 44: 176. ♂.**huronensis** Fischer. Mich.*Phaenocarpa huronensis* Fischer, 1975. Polskie Pismo Ent. 45: 311. ♀.**idolica** Fischer. N. C.*Phaenocarpa idolica* Fischer, 1975. Polskie Pismo Ent. 45: 314. ♀, ♂.**incerta** Fischer. N. Y., S. C., Calif., Alaska.*Phaenocarpa incerta* Fischer, 1975. Polskie Pismo Ent. 45: 317. ♀, ♂.**indistincta** Fischer. Que., Mich., Alaska.*Phaenocarpa indistincta* Fischer, 1974. Polskie Pismo Ent. 44: 178. ♀, ♂.**josephi** Fischer. Alaska.*Phaenocarpa josephi* Fischer, 1975. Polskie Pismo Ent. 45: 320. ♀.**kansensis** Shenefelt. Kans.*Kahlia flavipes* Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 107. Preocc. by Haliday, 1838.*Phaenocarpa kansensis* Shenefelt, 1974. Hym. Cat., part, 11, p. 1009. N. name for *flavipes* Ashmead.*Phaenocarpa ashmeadi* Fischer, 1974. Polskie Pismo Ent. 44: 117. N. name for *flavipes* Ashmead.

Taxonomy: Fischer, 1973. Naturh. Mus. Wien, Ann. 77: 245 (redescr.).

kinleyensis Fischer. Alaska.*Phaenocarpa kinleyensis* Fischer, 1974. Polskie Pismo Ent. 44: 181. ♀.**laevisulcata** Fischer. Alaska.*Phaenocarpa laevisulcata* Fischer, 1974. Polskie Pismo Ent. 44: 183. ♀.**leopoldi** Fischer. N. C., Alaska.*Phaenocarpa leopoldi* Fischer, 1974. Polskie Pismo Ent. 44: 186. ♀, ♂.**leptura** Fischer. N. Y., Md., W. Va., Alta.*Phaenocarpa leptura* Fischer, 1975. Polskie Pismo Ent. 45: 322. ♀, ♂.

- lyra* Fischer. Alaska.
Phaenocarpa lyra Fischer, 1975. Polskie Pismo Ent. 45: 325. ♀.
- mallochi* Fischer. Md., Va.
Phaenocarpa mallochi Fischer, 1974. Polskie Pismo Ent. 44: 189. ♀, ♂.
- mediolobata* Fischer. Alaska.
Phaenocarpa mediolobata Fischer, 1975. Polskie Pismo Ent. 45: 327. ♀.
- naubinwayensis* Fischer. Mich.
Phaenocarpa naubinwayensis Fischer, 1974. Polskie Pismo Ent. 44: 191. ♂.
- nigrata* Fischer. Colo., Ariz., Calif., Alaska.
Phaenocarpa nigrata Fischer, 1975. Polskie Pismo Ent. 45: 330. ♂.
- notaulica* Fischer. Colo., Alaska.
Phaenocarpa notaulica Fischer, 1975. Polskie Pismo Ent. 45: 333. ♀, ♂.
- novomexicana* Fischer. N. Mex.
Phaenocarpa novomexicana Fischer, 1975. Polskie Pismo Ent. 45: 335. ♀, ♂.
- orion* Fischer. N. H., Mich., Minn., Alaska.
Phaenocarpa orion Fischer, 1975. Polskie Pismo Ent. 45: 338. ♀, ♂.
- pentagona* Fischer. Md., Oreg., Alaska.
Phaenocarpa pentagona Fischer, 1974. Polskie Pismo Ent. 44: 196. ♂.
- periculosa* Fischer. Mich., Alaska.
Phaenocarpa periculosa Fischer, 1974. Polskie Pismo Ent. 44: 199. ♀.
- picinervis* (Haliday). N. Y., Md., D. C., S. C., Mich., Iowa, Kans., Colo., Idaho, Ariz., Oreg., Calif., Alaska; Europe.
Alysia (Alysia) picinervis Haliday, 1838. Ent. Mag. 5: 233. ♀.
Phaenocarpa americana Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 648. ♀.
- pilioculata* Fischer. Alaska.
Phaenocarpa pilioculata Fischer, 1974. Polskie Pismo Ent. 44: 204. ♀.
- puberae* Fischer. Sask. Host: *Cordilura pubera* L.
Phaenocarpa puberae Fischer, 1974. Polskie Pismo Ent. 44: 207. ♀.
- raptatrix* Fischer. Oreg.
Phaenocarpa raptatrix Fischer, 1974. Polskie Pismo Ent. 44: 210. ♀.
- reticulata* Fischer. Colo.
Phaenocarpa reticulata Fischer, 1974. Polskie Pismo Ent. 44: 212. ♀.
- rossata* Fischer. Mass.
Phaenocarpa rossata Fischer, 1974. Polskie Pismo Ent. 44: 215. ♀.
- rubriceps* (Provancher). Que., Calif.
Alysia rubriceps Provancher, 1883. Nat. Canad. 14: 18. ♂.
Phaenocarpa rubriceps(!) Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 392. ♀.
- rugipars* Fischer. N. Y.
Phaenocarpa rugipars Fischer, 1975. Polskie Pismo Ent. 45: 343. ♀.
- sculptata* Fischer. Colo.
Phaenocarpa sculptata Fischer, 1975. Polskie Pismo Ent. 45: 345. ♂.
- signicauda* Fischer. Alaska.
Phaenocarpa signicauda Fischer, 1975. Polskie Pismo Ent. 45: 348. ♀.
- sinefovea* Fischer. S. C.
Phaenocarpa sinefovea Fischer, 1975. Polskie Pismo Ent. 45: 350. ♀, ♂.
- studiata* Fischer. Alaska.
Phaenocarpa studiata Fischer, 1975. Polskie Pismo Ent. 45: 353. ♀.
- supramedia* Fischer. Newfoundland, Fla.
Phaenocarpa supramedia Fischer, 1974. Polskie Pismo Ent. 44: 217. ♂.
- tenebrosa* Fischer. Colo., N. Mex., Ariz., Oreg.
Phaenocarpa tenebrosa Fischer, 1974. Polskie Pismo Ent. 44: 220. ♀, ♂.
- umbrinervis* Fischer. Alaska.
Phaenocarpa umbrinervis Fischer, 1974. Polskie Pismo Ent. 44: 223. ♀.

varipedis Fischer. W. Va. Host: *Cordilura (Achaetella) varipes* (Wlkr.).
Phaenocarpa varipedis Fischer, 1974. Polskie Pismo Ent. 44: 225. ♀, ♂.

Genus PNEUMOSEMA Fischer

Pneumosema Fischer, 1966. Naturhist. Mus. Wien, Ann. 69: 207.

Type-species: *Pneumosema stigmaticum* Fischer. Orig. desig.

stigmaticum Fischer. N. Y., W. Va.

Pneumosema stigmaticum Fischer, 1966. Naturhist. Mus. Wien, Ann. 69: 208. ♀, ♂.

Genus SYNALDIS Foerster

Synaldis Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 273.

Type-species: *Bassus concolor* Nees. Orig. desig.

Revision: Fischer, 1967. Polskie Pismo Ent. 37: 431-478 (No. Amer. spp.).

Taxonomy: Shenefelt, 1974. Hym. Cat., part 11, p. 1020-1024 (cat. World spp.).

acutidens Fischer. Mich.

Synaldis acutidens Fischer, 1967. Polskie Pismo Ent. 37: 434. ♀.

alfalfae Fischer. Newfoundland, Calif.

Synaldis alfalfae Fischer, 1967. Polskie Pismo Ent. 37: 450. ♀, ♂.

altera Fischer. Md.

Synaldis altera Fischer, 1967. Polskie Pismo Ent. 37: 452. ♂.

blantoni Fischer. N. Y.

Synaldis blantoni Fischer, 1967. Polskie Pismo Ent. 37: 436. ♂.

cabinica Fischer. Md.

Synaldis cabinica Fischer, 1967. Polskie Pismo Ent. 37: 467. ♀, ♂.

difficilis Fischer. Md.

Synaldis difficilis Fischer, 1967. Polskie Pismo Ent. 37: 455. ♂.

exitiosae Fischer. Md., Va., Tex. Recorded as a parasite of *Sanninoidea exitiosa* (Say) which is not correct. However, this lepidopteran is reported to be parasitized by *Helicobia rapax* (Wlkr.) (Diptera: Sarcophagidae) and it is possible that *Synaldis exitiosae* is associated with this fly.

Synaldis exitiosae Fischer, 1967. Polskie Pismo Ent. 37: 440. ♀, ♂.

glabrifovea Fischer. Mich., Ala.

Synaldis glabrifovea Fischer, 1967. Polskie Pismo Ent. 37: 442. ♀.

incisa Gahan. Conn., Ill., Kans.

Synaldis incisa Gahan, 1912. Ent. Soc. Wash., Proc. 14: 4. ♀.

liliputana Fischer. Md.

Synaldis liliputana Fischer, 1967. Polskie Pismo Ent. 37: 444. ♂.

megaseliae Fischer. Md.

Synaldis megaseliae Fischer, 1967. Polskie Pismo Ent. 37: 459. ♀, ♂.

numerosa Fischer. N. Mex.

Synaldis numerosa Fischer, 1967. Polskie Pismo Ent. 37: 462. ♀, ♂.

painteri Fischer. Ind.

Synaldis painteri Fischer, 1967. Polskie Pismo Ent. 37: 469. ♀, ♂.

paraclypealis Fischer. Md.

Synaldis paraclypealis Fischer, 1967. Polskie Pismo Ent. 37: 472. ♂.

pygmaea Viereck. Conn.

Synaldis pygmaea Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 215. ♂.

quinnipiacorum Viereck. Conn.

Synaldis quinnipiacorum Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 215. ♀.

rotundidens Fischer. Md., Mich.

Synaldis rotundidens Fischer, 1967. Polskie Pismo Ent. 37: 437. ♂.

segmentata Fischer. Md.

Synaldis segmentata Fischer, 1967. Polskie Pismo Ent. 37: 464. ♀.

sensillosa Fischer. Md.

Synaldis sensillosa Fischer, 1967. Polskie Pismo Ent. 37: 448. ♀.

spiraculosa Fischer. Md.

Synaldis spiraculosa Fischer, 1967. Polskie Pismo Ent. 37: 448. ♀.

trematosa Fischer. Mich.

Synaldis trematosa Fischer, 1967. Polskie Pismo Ent. 37: 474. ♀.

ulmicola Ashmead. Ohio, Mo., Kans.

Synaldis ulmicola Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 651. ♀.

UNPLACED TAXA OF ALYSIINI

Dinotrema soror Brues, 1907. Wis. Nat. Hist. Soc., Bul. 5: 59. Type lost.

NOMINA NUDA IN ALYSIINI

Mesothesis abdominalis Ashmead, 1905. In Nason, Ent. News 16: 293.

Colobona americana Ashmead, 1905. In Nason, Ent. News 16: 293.

Aspilota davisii Ashmead, 1905. In Nason, Ent. News 16: 293.

Orthostigma delicata Ashmead, 1902. In Slosson, Ent. News 13: 321.

Delocarpa dimidiata Ashmead, 1905. In Nason, Ent. News 16: 293.

Aphaereta dolosa Viereck, 1928. N. Y. State Mus., Bul. 74: 179.

Cratospila ferrugineus Ashmead, 1905. In Nason, Ent. News 16: 293.

Mesocrina flaviventris Ashmead, 1897. In Slosson, Ent. News 8: 237.

Phaenocarpa slossonae Ashmead, 1902. In Slosson, Ent. News 13: 5.

Panerema thoracica Ashmead, 1899. In Smith, Ins. of N. J., p. 585.

SUBFAMILY SIGALPHINAE

This is a small group of genera that have been previously included in the subfamily Cheloninae because of the first three abdominal terga which form a solid carapace. However, the articulation between the first two abdominal terga is movable in the Sigalphinae. The biology is not known in detail but hosts are apparently lepidopterous larvae.

Taxonomy: De Saeger, 1948. Explor. Parc Natl. Albert, Mission G. F. de Witte, fasc. 53, p. 63-64 (key to genera). — Tobias, 1967. Ent. Obozr. 46: 659. — Shenefelt, 1973. Hym. Cat., part 10, p. 931-935 (cat. World spp.).

Genus SIGALPHUS Latreille

Sigalphus Latreille, 1802. Hist. Nat. Crust. Ins., v. 3, p. 327.

Type-species: *Ichneumon irrorator* Fabricius. Desig. by Viereck, 1914.

Sphaeropyx Illiger, 1807. Mag. Insektenk. 6: 192.

Type-species: *Ichneumon irrorator* Fabricius. Monotypic.

Rhytigaster(!) Wesmael, 1835. Nouv. Mem. Acad. Sci. Bruxelles 9: 206.

Rhitigaster Wesmael, 1835. Nouv. Mem. Acad. Sci. Bruxelles 9: 247.

Type-species: *Ichneumon irrorator* Fabricius. Desig. by Westwood, 1839.

Rhytidogaster Agassiz, 1846. Nomencl. Zool. Index Univ., p. 327. Emend.

bicolor (Cresson). Que. s. to Fla., w. to Man., Okla., and Miss. Host: *Acronicta* sp., *A. clarescens* Gn.

Rhytigaster bicolor Cresson, 1880. Amer. Ent. Soc., Trans. 8: Proc. p. xvii. ♀, ♂.

Biology: Cushman, 1913. Ent. Soc. Wash., Proc. 15: 157-160.

SUBFAMILY CHELONINAE

This is a distinctive group of braconids characterized by the rigid abdominal carapace formed by the fusion of the first three terga. The Triaspidinae have been associated with the Cheloninae on the basis of their similar abdominal structure, but their biologies, larval morphology and wing venation are all very different.

Species of the Cheloninae are typical egg-larval parasites of Lepidoptera, the adult ovipositing in the host egg but the parasite larva completing its development in the host larva.

Taxonomy: Tobias, 1967. Ent. Obozr. 46: 657. —Capek, 1970. Canad. Ent. 102: 859.
—Shenefelt, 1973. Hym. Cat., part 10, p. 813-931 (cat. World spp.).

Genus ASCOGASTER Wesmael

Ascogaster Wesmael, 1835. Nouv. Mem. Acad. Sci. Bruxelles 9: 226.

Type-species: *Ascogaster instabilis* Wesmael. Desig. by Foerster, 1862.

Cascogaster Baker, 1926. Phil. Jour. Sci. 31: 482.

Type-species: *Cascogaster fullawayi* Baker. Orig. desig.

Taxonomy: Shenefelt, 1973. Hym. Cat., part 10, p. 814-838 (cat. World spp.).

argentifrons (Provancher). Que., Pa., N. J., Ill. Host: *Depressaria pastinacella* (Dup.).

Chelonus argentifrons Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 145. ♂.

flaviceps Ashmead. Que., N. Y., Mich., Ill., Tex.

Ascogaster flaviceps Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 636. ♀.

mimetica Viereck. N. Y., Ill., Iowa, Kans.

Ascogaster mimeticus Viereck, 1905. Kans. Acad. Sci., Trans. 19: 277. ♀.

olethreuti Viereck. Colo., Wash. Host: *Endothenia rubipunctana* (Kearf.).

Ascogaster olethreuti Viereck, 1912. U. S. Natl. Mus., Proc. 42: 617. ♀, ♂.

provancheri Dalla Torre. Que., Conn., N. Y., N. J., Md., Ohio, Mich. Host: *Taniva albolineana* (Kearf.).

Ascogaster rufipes Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 146. ♀.

Preocc. by Latreille, 1809.

Ascogaster provancheri Dalla Torre, 1898. Cat. Hym., v. 4, p. 196. N. name for *rufipes* Provancher.

provancheri var. **vierecki** Shenefelt. N. H., Conn., N. Y., N. J., Ont., Mich., Wisc., Minn. Host: *Proteoteras moffattiana* Fern.

Ascogaster provancheri var. *pallidicornis* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 231. Preocc. by Curtis, 1837.

Ascogaster provancheri var. *vierecki* Shenefelt, 1973. Hym. Cat., part 10, p. 828. N. name for *pallidicornis* Viereck.

quadridentata Wesmael. N. S. s. to S. C., w. to B. C. and Calif.; Europe, Asia. Host: *Desmia funeralis* (Hbn.), *Gelechia* sp., *Grapholitha molesta* (Busck), *G. prunivora* (Walsh), *Laspeyresia nigricana* (Steph.), *L. pomonella* (L.), *Paralobesia viteana* (Clem.), *Spilonota ocellana* (D. and S.).

Ascogaster quadridentatus Wesmael, 1835. Nouv. Mem. Acad. Sci. Bruxelles 9: 237. ♀, ♂.

Chelonus impressus Herrich-Schaeffer, 1838. Faunae Ins. Germ., p. 154.

Chelonus carpocapsae Viereck, 1909. Ent. Soc. Wash., Proc. 11: 43.

Biology: Rosenberg, 1934. Bul. Ent. Res. 25: 232-241. —Boyce, 1936. Canad. Ent. 68: 241-246.

—Allen, 1962. U. S. Dept. Agr., Tech. Bul. 1265, p. 37-40.

Morphology: Rosenberg, 1934. Bul. Ent. Res. 25: 232-341.

rufa Muesebeck and Walkley. Md., S. C., Ga., Fla., Iowa, Kans., Colo., Ariz.

Ascogaster erythrorhox Viereck, 1916. Biol. Soc. Wash., Proc. 29: 166. ♀. Preocc. by Marshall, 1897.

Ascogaster rufa Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 143. N. name for *erythrorhox* Viereck.

NOMINA NUDA IN ASCOGASTER WESMAEL

Ascogaster intermedius Ashmead, 1895. In Slosson, Ent. News 6: 317.

Ascogaster nigripes Ashmead, 1898. In Slosson, Ent. News 9: 253.

Ascogaster pallidicornis Ashmead, 1895. In Slosson, Ent. News 6: 317.

Ascogaster pilosifrons Ashmead, 1905. In Nason, Ent. News 16: 295.

Ascogaster proximus Ashmead, 1905. In Nason, Ent. News 16: 295.

Genus CHELONUS Panzer

Genus CHELONUS Subgenus CHELONUS Panzer

Chelonus Panzer, 1806. Krit. Revis. Insektenf. Deutschlands, v. 2, p. 99.

Type-species: *Ichneumon oculator* Fabricius. Desig. by Curtis, 1837.

Trachionus Haliday, 1833. Ent. Mag. 1: 265.

Type-species: *Chelonus mandibularis* Haliday. Monotypic.

Davisania La Munyon, 1877. Nebr. Assoc. Adv. Sci., Proc. No page number.

Type-species: *Davisania aughei* La Munyon. Desig. by Viereck, 1914.

Arichelonus Viereck, 1913. U. S. Natl. Mus., Proc. 44: 641.

Type-species: *Chelonus aculeatus* Ashmead. Orig. desig.

Megachelonus Baker, 1926. Philipp. Jour. Sci. 31: 457.

Type-species: *Megachelonus bidentatus* Baker. Orig. desig.

The biological distinctness of the various subgenera proposed within the genus *Chelonus* is not clear, and a critical review of the entire group is needed.

Taxonomy: Shenefelt, 1973. Hym. Cat., part 10, p. 838-872 (cat. World spp.).

aculeatus Ashmead. N. Dak., Wyo., Colo.

Chelonus aculeatus Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 17. ♀.

altitudinus Viereck. Ill., Mo., S. Dak., Kans., Tex., Colo., N. Mex., Idaho; Mexico. Host:

Homoeosoma electellum (Hulst).

Chelonus altitudinis Viereck, 1905. Kans. Acad. Sci., Trans. 19: 278. ♀.

annulipes Wesmael. Mass., Conn., N. Y., N. J., Del.; Europe. Introduced from Italy. Host: *Ostrinia nubilalis* (Hbn.). Other locality and host records for No. Amer. need to be confirmed.

Chelonus annulipes Wesmael, 1835. Nouv. Mem. Acad. Sci. Bruxelles 9: 221. ♀.

Biology: Vance, 1932. U. S. Dept. Agr., Tech. Bul. 294, 48 p. —Bradley and Arbutnot, 1938.

Ent. Soc. Amer., Ann. 31: 259-269. —Harris, 1950. Iowa Yearbook of Agr. for 1949, p. 143-159. —Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, p. 90.

Morphology: Vance, 1932. U. S. Dept. Agr., Tech. Bul. 294, 48 p.

aughei (La Munyon). Nebr.

Davisania aughei La Munyon, 1877. Nebr. Assoc. Adv. Sci., Proc. No page number.

australis Viereck. N. Mex.

Chelonus australis Viereck, 1903. Amer. Ent. Soc., Trans. 29: 95. ♂.

basicinctus Provancher. Canada, N. H., Conn., Pa., Md., Mich., N. Dak.

Chelonus basicinctus Provancher, 1881. Nat. Canad. 12: 198. ♀.

basilaris (Say). Conn., Pa.

Sigalphus basilaris Say, 1824. In Keating, Narr. Long's 2nd Exped., v. 2, p. 322.

connectens Cresson. Iowa, La., Tex.

Chelonus connectens Cresson, 1872. Amer. Ent. Soc., Trans. 4: 180. ♀.

electus Cresson. Tex., Colo., Calif. Host: *Melitaria* sp., *Ozamia* sp.

Chelonus electus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 180. ♀, ♂.

inanimus (Linnaeus). Calif.; Europe, Asia. Liberated in Calif. but apparently not established.

Introduced from France. Host: *Etiella zinckenella* (Treit.).

Cynips inanimus Linnaeus, 1767. Syst. Nat., 12th Ed., p. 919.

Biology: Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, p. 91-92. —Stone, 1965. U. S. Dept.

Agr., Tech. Bul. 1321, p. 26. —Rechav and Orion, 1975. Ent. Soc. Amer., Ann. 68: 457-462.

insularis Cresson. No. Amer., Cent. Amer., So. Amer., W. Indies. Host: *Ephestia elutella*

(Hbn.), *Feltia subterranea* (F.), *Heliothis zea* (Boddie), *Loxostege sticticalis* (L.), *Peridroma saucia* (Hbn.), *Spodoptera eridania* (Cram.), *S. exigua* (Hbn.), *S. frugiperda* (Smith), *S. ornithogalli* (Guen.), *S. praefica* (Grote), *Trichoplusia ni* (Hbn.). Other records need confirmation.

Chelonus insularis Cresson, 1865. Ent. Soc. Phila., Proc. 4: 61. ♀.

Chelonus texanus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 179. ♀.

Chelonus texanoides Viereck, 1905. Kans. Acad. Sci., Trans. 19: 286. ♀.

- Chelonus erogyrus* Viereck, 1905. Kans. Acad. Sci., Trans. 19: 287. ♀.
Chelonus bipustulatus Viereck, 1911. U. S. Natl. Mus., Proc. 40: 476. ♀.
- Biology: Pierce and Holloway, 1912. Jour. Econ. Ent. 5: 425-428 (as *texanus*). — Ulyett, 1949. Canad. Ent. 81: 25-44 (as *texanus*). — Vinson, 1975. Amer. Ent. Soc., Ann. 68: 381-384 (as *texanus*).
- iridescens** Cresson. Colo., Alaska. Other locality records need confirmation.
Chelonus iridescens Cresson, 1865. Ent. Soc. Phila., Proc. 4: 294. ♂.
- knabi** Viereck. N. J., Va., Ohio. Host: *Chilo plejadellus* Zinck.
Chelonus knabi Viereck, 1911. U. S. Natl. Mus., Proc. 40: 178. ♀, ♂.
- konkaputus** Viereck. Conn., N. Y., Md., D. C.
Chelonus (Chelonus) konkaputus Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22, p. 233. ♀.
- laticinctus** Cresson. Tex., Colo.
Chelonus laticinctus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 180. ♀.
- lunatus** Haldeman. Pa.
Chelonus lunatus Haldeman, 1849. Acad. Nat. Sci. Phila., Proc. 4: 203.
- muesebecki** McComb. S. Dak., Wyo., Colo., N. Mex., Utah, Ariz., Nev., Wash., Oreg., Calif., Yukon, Alaska.
Chelonus (Chelonus) muesebecki McComb, 1962. Ent. Soc. Wash., Proc. 64: 19. ♀, ♂.
- mysticorum** Viereck. Conn.
Chelonus mysticorum Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22, p. 233. ♂.
- narayani** Subba Rao. Tex.?, India. Liberated in Texas but not established. Introduced from India. Host: *Pectinophora gossypiella* (Saund.).
Chelonus narayani Subba Rao, 1955. Indian Jour. Ent. 17: 63. ♀, ♂.
- nebraskensis** (La Munyon). Nebr.
Davisania nebraskensis La Munyon, 1877. Nebr. Assoc. Adv. Sci., Proc. No page number.
- parvus** Say. Ind.
Chelonus parvus Say, 1836. Boston Jour. Nat. Hist. 1: 265.
- phaloniae** Mason. Man. Host: *Phalonia hospes* (Wlsm.).
Chelonus phaloniae Mason, 1959. Canad. Ent. 91: 49. ♀, ♂.
- pygmaeus** Viereck. B. C.
Chelonus pygmaeus Viereck, 1925. Canad. Ent. 57: 72. ♂.
- rufiventris** Cresson. N. Dak., S. Dak., Colo. Host: *Agrotis orthogonia* Morr.
Chelonus rufiventris Cresson, 1865. Ent. Soc. Phila., Proc. 4: 293. ♂.
- sassacus** Viereck. Conn.
Chelonus (Chelonus) sassacus Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22, p. 233. ♀.
- secundus** (Viereck). B. C.
Archelonus secundus Viereck, 1926. Canad. Ent. 58: 55. ♀.
- sericeus** (Say). No. Amer. Host: *Feltia ducens* (Wlkr.) ?.
Sigalphus sericeus Say, 1824. In Keating, Narr. Long's 2nd Exped., v. 2, p. 321. ♀.
Chelonus filicornis Cameron, 1887. Manchester Lit. and Phil. Soc., Mem. and Proc. 26: 135.
- sobrinus** Haldeman. Pa.
Chelonus sobrinus Haldeman, 1849. Acad. Nat. Sci. Phila., Proc. 4: 203.

Genus CHELONUS Subgenus MICROCHELONUS Szepligeti

Microchelonus Szepligeti, 1908. Mus. Nat. Hung., Ann. 6: 403.

Type-species: *Microchelonus hungaricus* Szepligeti. Monotypic.

Chelonella Szepligeti, 1908. Mus. Nat. Hung., Ann. 6: 403. Preocc. by Beneden and Hesse, 1863.

Type-species: *Ascogaster basalis* Curtis. Desig. by Viereck, 1914.

Neochelonella Hincks, 1943. Entomologist 76: 98. N. name for *Chelonella* Szepligeti.

Revision: McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, 148 pp. (No. Amer. spp.).

- Taxonomy: Shenefelt, 1973. Hym. Cat., part 10, p. 873-907 (cat. World spp.).
- abnormalis** McComb. Tex.
Chelonus (Microchelonus) abnormalis McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 16. ♀, ♂.
- absonus** McComb. Tex.
Chelonus (Microchelonus) absonus McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 17. ♀.
- aciculatus** McComb. Que. s. to N. C., w. to Minn.
Chelonus (Microchelonus) aciculatus McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 18. ♂.
- acutigaster** McComb. Nebr., Idaho, Calif. Host: *Zelleria haimbachii* Busck.
Chelonus (Microchelonus) acutigaster McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 19. ♀, ♂.
- alius** McComb. N. Y., Ont., Wis., Minn.
Chelonus (Microchelonus) alius McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 20. ♀, ♂.
- alpinus** McComb. Calif.
Chelonus (Microchelonus) alpinus McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 21. ♂.
- anthracinus** McComb. Que.
Chelonus (Microchelonus) anthracinus McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 22. ♀.
- argutus** McComb. Yukon.
Chelonus (Microchelonus) argutus McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 23. ♀.
- ashmeadii** Dalla Torre. Colo.
Chelonus atripes Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 16. ♀. Preocc. by Thomson, 1874.
Chelonus Ashmeadii Dalla Torre, 1898. Cat. Hym., v. 4, p. 199. N. name for *atripes* Ashmead.
- auricornis** McComb. Md., Va.
Chelonus (Microchelonus) auricornis McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 25. ♀.
- batrachedrae** McComb. Mich. Host: *Batrachedra praeangusta* (Haw.).
Chelonus (Microchelonus) batrachedrae McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 26. ♀, ♂.
- bickleyi** McComb. Ariz.
Chelonus (Microchelonus) bickleyi McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 27. ♀, ♂.
- blackburni** Cameron. Tex.?; Hawaii, Australia. Liberated in Texas but not established.
 Introduced from Hawaii. Host: *Pectinophora gossypiella* (Saund.).
Chelonus carinatus Cameron, 1881. Ent. Soc. London, Trans., p. 559. ♀. Preocc. by Provancher, 1881.
Chelonus blackburni Cameron, 1886. Manchester Lit. Phil. Soc., Mem. (ser. 3) 10: 242. N. name for *carinatus* Cameron.
Chelonus Cameronii Dalla Torre, 1898. Cat. Hym., v. 4, p. 200. N. name for *carinatus* Cameron.
- brevicornis** McComb. Fla.
Chelonus (Microchelonus) brevicornis McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 30. ♀, ♂.
- brevifemur** McComb. Calif.
Chelonus (Microchelonus) brevifemur McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 31. ♀, ♂.
- bucculentus** McComb. Mich., S. Dak., Utah.
Chelonus (Microchelonus) bucculentus McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 32. ♀, ♂.

burksi McComb. Tex.

Chelonus (Microchelonus) burksi McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 33. ♀, ♂.

carinatus Provancher. Que. s. to Fla.; Mich., Ont., S. Dak.

Chelonus carinatus Provancher, 1881. Nat. Canad. 12: 199. ♀.

Chelonus Provancheri Dalla Torre, 1898. Cat. Hym., v. 4, p. 206. Unnecessarily proposed as new name for *carinatus* Provancher.

caulicola McComb. N. Y., Ohio, Ind., S. Dak., Kans. Host: *Aristotelia absconditella* (Wlkr.), *Mompha eloisella* Clem., *Ostrinia obumbratalis* (Led.).

Chelonus (Microchelonus) caulicola McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 35. ♀, ♂.

cautus Cresson. La., Tex., Ariz.; Baja Calif., Mex., Cent. Amer.

Chelonus cautus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 180. "♀" = ♂.

Chelonus albobasilaris Ashmead, 1894. Calif. Acad. Sci., Proc. (2) 4: 123. ♂.

Chelonus nucleolus Viereck, 1905. Kans. Acad. Sci., Trans. 19: 287. ♀.

ceanothi McComb. Ont. Host: *Bucculatrix ceanothiella* Braun.

Chelonus (Microchelonus) ceanothi McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 38. ♀, ♂.

cephelanthi McComb. Tex. Host: *Phalonia cephalanthana* Heinr.

Chelonus (Microchelonus) cephelanthi McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 39. ♀.

chrysogaster McComb. Iowa.

Chelonus (Microchelonus) chrysogaster McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 39. ♂.

clypealis McComb. Ill., Iowa.

Chelonus (Microchelonus) clypealis McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 40. ♂.

cnephasiae McComb. Wash., Oreg. Host: *Cnephasia* sp.

Chelonus (Microchelonus) cnephasiae McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 42. ♀, ♂.

conformis McComb. Wis.

Chelonus (Microchelonus) conformis McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 43. ♀, ♂.

confusus McComb. S. Dak., Tex.

Chelonus (Microchelonus) confusus McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 44. ♀, ♂.

convexus McComb. Calif.

Chelonus (Microchelonus) convexus McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 45. ♀, ♂.

cosmopteridis McComb. Md. Host: *Cosmopterix* sp.

Chelonus (Microchelonus) cosmopteridis McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 46. ♀.

crassus McComb. Fla.

Chelonus (Microchelonus) crassus McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 46. ♀, ♂.

cushmani McComb. Va., Mo.

Chelonus (Microchelonus) cushmani McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 47. ♀, ♂.

cylindricus McComb. Wyo., Colo., Idaho, B. C., Wash.

Chelonus (Microchelonus) cylindricus McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 48. ♀, ♂.

declivus McComb. Que.

Chelonus (Microchelonus) declivus McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 49. ♀.

disjunctus McComb. Md.

Chelonus (Microchelonus) disjunctus McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 50. ♂.

disparilis McComb. Colo., Utah, Nev., B. C., Oreg., Calif.

Chelonus (Microchelonus) disparilis McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 52. ♀, ♂.

dolicocephalus McComb. S. Dak., Mont., N. Mex., Ariz., Nev., Oreg., Calif.

Chelonus (Microchelonus) dolicocephalus McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 53. ♀, ♂.

dreisbachi McComb. Mass., N. Y., Pa., N. J., Md., Va., N. C., Mich., Ill.

Chelonus (Microchelonus) dreisbachi McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 54. ♀, ♂.

egregicolor Viereck. N. H. s. to D. C., w. to S. Dak. and Kans. Host: *Laspeyresia pomonella* (L.), *Pyrausta nubilalis* (Led.).

Chelonus egregicolor Viereck, 1905. Kans. Acad. Sci., Trans. 19: 278. ♂.

Biology: Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767, p. 64.

elasmopalpi McComb. Ga.; Jamaica. Host: *Elasmopalpus lignosellus* (Zell.).

Chelonus (Microchelonus) elasmopalpi McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 56. ♀, ♂.

empherus McComb. Fla.

Chelonus (Microchelonus) empherus McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 57. ♀, ♂.

eucosmae McComb. N. Y., N. J., Ont., Mich., Wis. Host: *Eucosma derelicta* Heinr.

Chelonus (Microchelonus) eucosmae McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 58. ♀, ♂.

euphorbiae McComb. Ariz., Calif.

Chelonus (Microchelonus) euphorbiae McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 60. ♀.

eximius McComb. Que. s. to Md. and Ohio. Host: *Coleotechnites piceaella* (Kearf.), *Phalonia rutilana* Hbn.

Chelonus (Microchelonus) eximius McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 60. ♀, ♂.

fissus Provancher. Que., Ont., Conn.

Chelonus fissus Provancher, 1880. Nat. Canad. 12: 199. ♂.

flavomarginalis McComb. Fla.

Chelonus (Microchelonus) flavomarginalis McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 62. ♂.

fulgidus McComb. Conn., Ill.

Chelonus (Microchelonus) fulgidus McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 62. ♀.

fumidus McComb. Calif.

Chelonus (Microchelonus) fumidus McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 63. ♀.

fuscipennis McComb. N. S., Maine, Mass., N. Y., Md., Ont., Mich., Wis., N. Dak., Colo.

Chelonus (Microchelonus) fuscipennis McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 64. ♀, ♂.

gossypicola McComb. Tex. Host: *Pectinophora gossypiella* (Saund.).

Chelonus (Microchelonus) gossypicola McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 65. ♀, ♂.

gracilariae McComb. B. C. Host: *Caloptilia murtfeldtella* (Busck).

Chelonus (Microchelonus) gracilariae McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 67. ♀, ♂.

gracilis McComb. Alta., Oreg., Calif.

Chelonus (Microchelonus) gracilis McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 68. ♀, ♂.

- grapholithae** McComb. Tex. Host: *Grapholitha packardii* (Zell.).
Chelonus (Microchelonus) grapholithae McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 69. ♀, ♂.
- hadrogaster** McComb. N. Dak., Idaho.
Chelonus (Microchelonus) hadrogaster McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 70. ♀, ♂.
- heliopae** Gupta. La.?, Tex.?, India. Liberated in La. and Tex. but not established. Introduced from India. Host: *Pectinophora gossypiella* (Saund.).
Chelonus heliopae Gupta, 1955. Agra Univ. Jour. Res. 4: 209. ♀, ♂.
- hoppingi** (Viereck). B. C.
Chelonella hoppingi Viereck, 1925. Canad. Ent. 57: 71. ♀, ♂.
- hurdi** McComb. Calif.
Chelonus (Microchelonus) hurdi McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 73. ♀.
- hyalinus** McComb. Tex.
Chelonus (Microchelonus) hyalinus McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 74. ♀, ♂.
- improcerus** McComb. Calif.
Chelonus (Microchelonus) improcerus McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 75. ♀.
- insolitus** McComb. Man. Host: *Carposina niponensis ottawana* Kearf.
Chelonus (Microchelonus) insolitus McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 76. ♀, ♂.
- insuetus** McComb. Que., Ont.
Chelonus (Microchelonus) insuetus McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 77. ♀, ♂.
- isolatus** McComb. P. E. I., Wis.
Chelonus (Microchelonus) isolatus McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 78. ♀, ♂.
- keiferiae** McComb. Va. Host: *Keiferia inconspicua* (Murtf.).
Chelonus (Microchelonus) keiferiae McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 79. ♀, ♂.
- krombeini** McComb. Mass., Pa., Md., Ont.
Chelonus (Microchelonus) krombeini McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 80. ♀.
- laevifrons** Cresson. Colo.
Chelonus laevifrons Cresson, 1865. Ent. Soc. Phila., Proc. 4: 294. "♂" = ♀.
- lavernae** Ashmead. N. J., Ont., Ohio, Ill., Mo., Ala. Host: *Mompha eloisella* Clem.
Chelonus lavernae Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 635. ♂.
- leptogaster** McComb. Wyo., Calif.
Chelonus (Microchelonus) leptogaster McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 83. ♀.
- longipalpis** McComb. Ind., Ill.
Chelonus (Microchelonus) longipalpis McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 84. ♀, ♂.
- marshi** McComb. Calif.
Chelonus (Microchelonus) marshi McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 85. ♀, ♂.
- masoni** McComb. Calif.
Chelonus (Microchelonus) masoni McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 86. ♀, ♂.
- mccombi** Marsh. Tex.
Chelonus (Microchelonus) aberrans McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 15. ♀, ♂. Preocc. by Tobias, 1964.

- Chelonus (Microchelonus) mcombi* Marsh, 1974. Ent. Soc. Wash., Proc. 76: 285. N. name for *aberrans* McComb.
- medicaginis** McComb. Alta., S. Dak., Colo.
Chelonus (Microchelonus) medicaginis McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 87. ♀.
- minimus** Cresson. Tex.
Chelonus minimus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 181. ♀.
- montanus** McComb. Calif.
Chelonus (Microchelonus) montanus McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 89. ♀, ♂.
- nanus** Provancher. Canada.
Chelonus nanus Provancher, 1881. Nat. Canad. 12: 200. ♀, ♂.
- niger** McComb. Pa.
Chelonus (Microchelonus) niger McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 90. ♀, ♂.
- nigripennis** Ashmead. D. C.
Chelonus nigripennis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 635. ♂.
- pallidus** Ashmead. Md.
Chelonus pallidus Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 635. "♀" = ♂.
- paradoxus** McComb. Wis.
Chelonus (Microchelonus) paradoxus McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 91. ♀.
- paululus** McComb. Fla.
Chelonus (Microchelonus) paululus McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 92. ♀, ♂.
- pecki** McComb. Sask.
Chelonus (Microchelonus) pecki McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 93. ♂.
- pectinophorae** Cushman. Tex.?, Korea, China, Japan, Formosa. Liberated in Tex. but not established. Introduced from Japan. Host: *Pectinophora gossypiella* (Saund.).
Chelonus (Chelonella) pectinophorae Cushman, 1931. U. S. Natl. Mus., Proc. 79 (14): 11. ♀, ♂.
Chelonella nitobei Sonan, 1932. Nat. Hist. Soc. Formosa, Trans. 22: 74. ♀, ♂.
- periplocae** McComb. Calif. Host: *Periploca nigra* Hodges.
Chelonus (Microchelonus) periplocae McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 96. ♀.
- Biology: Koehler and Tauber, 1964. Jour. Econ. Ent. 57: 566.
- petrovae** McComb. S. Dak., Nebr., Idaho, Calif. Host: *Eucosma recissoriana* Heinr., *Rhyacionia bushnellii* (Busck).
Chelonus (Microchelonus) petrovae McComb, 1965. Ent. News 76: 179. ♀, ♂.
- phthorimaeae** Gahan. N. J., Va., La., Tex., Colo., Idaho, Oreg., Calif.; Mex., Bermuda. Host: *Keiferia inconspicuell* (Murtf.), *Phthorimaea operculella* (Zell.), *Tildenia gudmannella* (Wlsm.).
Chelonus phthorimaeae Gahan, 1917. U. S. Natl. Mus., Proc. 53: 199. ♀, ♂.
- Biology: Graf, 1917. U. S. Dept. Agr., Bul. 427, p. 40-41 (as *shoshoneanorum* Viereck).
- plesius** (Viereck). B. C.
Chelonella plesius Viereck, 1925. Canad. Ent. 57: 72. ♂.
- ponderosae** McComb. Ariz.
Chelonus (Microchelonus) ponderosae McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 99. ♀, ♂.
- procericornis** McComb. Calif.
Chelonus (Microchelonus) procericornis McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 100. ♀.

prolaticornis McComb. P. E. I.

Chelonus (Microchelonus) prolaticornis McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 101. ♀.

proteus Gahan. Md. Host: *Periploca gleditschiae* (Chamb.).

Chelonus (Chelonella) proteus Gahan, 1919. U. S. Natl. Mus., Proc. 55: 116. ♀, ♂.

prunicola McComb. Calif. Host: *Leucoptera* sp., *Paraleucoptera heinrichi* Jones.

Chelonus (Microchelonus) prunicola McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 103. ♀, ♂.

punctatus McComb. Calif.

Chelonus (Microchelonus) punctatus McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 104. ♀, ♂.

punctipennis McComb. Ont.

Chelonus (Microchelonus) punctipennis McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 106. ♀, ♂.

quadriceps McComb. Minn., S. Dak., Colo., Alaska.

Chelonus (Microchelonus) quadriceps McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 107. ♀, ♂.

recurvariae McComb. N. H., Pa., Ohio, Ont., Mich., Wis. Host: *Exoteleia dodecella* (L.), *E. pinifoliella* (Chamb.), *Petrova albicapitana* (Busck), *Recurvaria* sp.

Chelonus (Microchelonus) recurvariae McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 108. ♀, ♂.

rubiginis McComb. La.

Chelonus (Microchelonus) rubiginis McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 109. ♀, ♂.

rufiscapus Provancher. Que., P. E. I., N. S., Mass., N. Y., Va., N. C., Ont., Mich., Ind., Wis., Ill., S. Dak., B. C.

Chelonus rufiscapus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 144. ♀.

saileri McComb. Yukon, Alaska.

Chelonus (Microchelonus) saileri McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 111. ♀, ♂.

salicis McComb. Calif. Host: *Batrachedra salicipomonella* Clem.

Chelonus (Microchelonus) salicis McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 112. ♀, ♂.

sculleni McComb. Oreg.

Chelonus (Microchelonus) sculleni McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 113. ♀.

severini McComb. S. Dak.

Chelonus (Microchelonus) severini McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 114. ♀, ♂.

shenefelti McComb. Wis.

Chelonus (Microchelonus) shenefelti McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 116. ♀, ♂.

shoshoneanorum Viereck. Colo.

Chelonus shoshoneanorum Viereck, 1911. U. S. Natl. Mus., Proc. 39: 402. ♀.

similis McComb. Calif.

Chelonus (Microchelonus) similis McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 117. ♀, ♂.

spinosus McComb. N. J., Ohio.

Chelonus (Microchelonus) spinosus McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 118. ♀, ♂.

subtuberculatus McComb. Sask., Colo., Yukon.

Chelonus (Microchelonus) subtuberculatus McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 119. ♀, ♂.

suturalis McComb. Colo.

Chelonus (Microchelonus) suturalis McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 120. ♀, ♂.

tenuicornis McComb. Md., Va.

Chelonus (Microchelonus) tenuicornis McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 121. ♀.

teretiventris McComb. N. Dak., Colo.

Chelonus (Microchelonus) teretiventris McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 122. ♀, ♂.

tuberculatus McComb. N. Mex.

Chelonus (Microchelonus) tuberculatus McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 123. ♀.

vulgaris McComb. S. Dak.

Chelonus (Microchelonus) vulgaris McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 124. ♀.

walkleyae McComb. S. Dak.

Chelonus (Microchelonus) walkleyae McComb, 1968 (1967). Md. Agr. Expt. Sta., Bul. A-149, p. 124. ♀, ♂.

NOMINA NUDA IN CHELONUS PANZER

Chelonus biannularis Ashmead, 1900 (1899). In Smith, Ins. of N. J., p. 591.

Chelonus corrugatus Harris, 1862. In Cresson, Ent. Soc. Phila., Proc. 1: 211.

Chelonus dislocatus Harris, 1862. In Cresson, Ent. Soc. Phila., Proc. 1: 211.

Genus PHANEROTOMA Wesmael

Phanerotoma Wesmael, 1838. Nouv. Mem. Acad. Sci. Bruxelles 11: 165.

Type-species: *Chelonus dentatus* Panzer. Desig. by Westwood, 1839.

Phanerogaster Wesmael, 1838. Nouv. Mem. Acad. Sci. Bruxelles 11: 165. Emend.

Phaenotoma Ashmead, 1894. Linn. Soc. London, Jour., Zool. 25: 123. Misspelling.

Sulydus du Buysson, 1897. Soc. Ent. France, Ann. 66: 354.

Type-species: *Sulydus marshalli* du Buysson. Monotypic.

Neophanerotoma Szepligeti, 1908. Notes Leyden Mus. 29: 227.

Type-species: *Phanerotoma orientalis* Szepligeti. Desig. by Viereck, 1914.

Phanerotomina Shestakov, 1930. Ent. Obozr. 24: 100.

Type-species: *Phanerotomina gussakovskii* Shestakov. Orig. desig.

Taxonomy: Shenefelt, 1973. Hym. Cat., part 10, p. 909-928 (cat. World spp.).

erythrocephala Rohwer. Ga., Wis., Mont., Colo., N. Mex., Calif. Host: *Hedulia injectiva* Heinr.,

Laspeyresia piperana (Kearf.), *L. toreuta* (Grote).

Phanerotoma erythrocephala Rohwer, 1917. U. S. Natl. Mus., Proc. 53: 166. ♀, ♂.

fasciata Provancher. Newfoundland, Ont. s. to Fla. and Tex., w. to N. W. T., B. C. and Oreg.

Host: *Acrobasis caryae* Grote, *Grapholitha interstinctana* (Clem.), *G. molesta* (Busck), *G. packardi* (Zell.), *Laspeyresia anaranjada* Miller, *L. caryana* (Fitch), *L. ingens* Heinr., *L. nigricana* (Steph.), *L. pomonella* (L.), *Melissopus latiferreanus* (Wlsm.). Prior to 1951, this species was frequently misidentified as *tibialis* (Haldeman).

Phanerotoma fasciata Provancher, 1881. Nat. Canad. 12: 200. ♀.

Biology: Allen, 1962. U. S. Dept. Agr., Tech. Bul. 1265, p. 40-41.

flavitestacea Fischer. Calif.; Israel, Yugoslavia, North Africa, Spain. Introduced from Israel.

Host: *Ectomyelois ceratoniae* (Zell.), *Paramyelois transitella* (Wlkr.).

Phanerotoma flavitestacea Fischer, 1959. Acta Mus. Maced. Sci. Nat. 6: 18. ♀, ♂.

Biology: Biliotti and Daumal, 1971. Zool. Ecol. Anim., Ann. 1: 379-394.

franklini Gahan. N. S. and Que. s. to Fla., w. to Ill. and Tex.; Calif. Host: *Acrobasis vaccinii* Riley.

Phanerotoma franklini Gahan, 1917. U. S. Natl. Mus., Proc. 53: 200. ♀, ♂.

- grapholithae** Muesebeck. Conn., N. Y., N. J., Md., Va.; Japan, Korea, China. Introduced from Japan. Host: *Grapholitha molesta* (Busck), *G. prunivora* (Walsh), *Laspeyresia pomonella* (L.).
Phanerotoma grapholithae Muesebeck, 1933. Ent. Soc. Wash., Proc. 35: 50. ♀, ♂.
- inopinata** Caltagirone. Calif.; Mexico, Baja Calif. Host: *Paramyelois transitella* (Wlkr.).
Phanerotoma inopinata Caltagirone, 1965. Pan-Pacific Ent. 41: 17. ♀, ♂.
- laspeyresiae** Rohwer. Mich., Mont., Idaho., B. C., Oreg., Calif. Host: *Hedulia injectiva* Heinr., *Laspeyresia miscitata* Heinr., *L. piperana* (Kearf.), *L. toreuta* (Grote).
Phanerotoma laspeyresiae (!) Rohwer, 1915. U. S. Natl. Mus., Proc. 49: 230. ♂.
- longicauda** Walley. N. S. and Que. s. to Fla., w. to Alta. and Tex.; Ariz., Calif.; Baja Calif. Host: *Carposina* sp.
Phanerotoma longicauda Walley, 1951. Canad. Ent. 83: 306. ♀, ♂.
- planifrons** (Nees). Calif.; Europe, North Africa, West and Central Asia, Siberia, Korea, Japan. Introduced from Hungary. Host: *Etiella zinckenella* (Treit.), *Grapholitha molesta* (Busck).
Sigalphus planifrons Nees, 1816 (1813). Gesell. Naturf. Freunde Berlin, Mag. 7: 259.
Taxonomy: Watanabe, 1940. Insecta Matsumurana 14: 88-89.
Biology: Parker, 1951. U. S. Dept. Agr., Tech. Bul. 1036, p. 12-16. — Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, p. 121.
- recurvariae** Cushman. Conn., Pa., Fla., Ont., Mich., Wis. Host: *Recurvaria nanella* (Hbn.), *Spilonota ocellana* (D. and S.).
Phanerotoma recurvariae Cushman, 1914. Ent. Soc. Wash., Proc. 16: 78. ♀, ♂.
- Biology: Sadava and Miller, 1967. Canad. Ent. 99: 436-442.
- rhyacioniae** Cushman. Md., Va., Ark., La., Miss. Host: *Rhyacionia frustrana* (Comst.).
Phanerotoma rhyacioniae Cushman, 1927. Jour. Agr. Res. 34: 740. ♀, ♂.
- thapsina** Walley. Fla., Tex., Ariz., Calif.; Mexico, Baja Calif.
Phanerotoma thapsina Walley, 1951. Canad. Ent. 83: 305. ♀, ♂.
- tibialis** (Haldeman). Que., Maine, Conn., Pa., Del., Fla., Ont., Mich., Tenn., Ala., Wis., Ill., Minn., Ark., Kans., Tex.; Antigua. Host: *Acrobasis betulella* Hulst, *A. caryae* Grote, *A. caryivorella* Rag., *A. rubrifasciella* Pack., *A. sylviella* Ely, *Tetralopha asperatella* (Clem.).
Sigalphus tibialis Haldeman, 1849. Acad. Nat. Sci. Phila., Proc. 4: 203. ♀.
Phanerotoma noctivaga Marshall, 1885. Roy. Ent. Soc. London, Trans. 1885: 112. ♀, ♂.
- Biology: Balduf, 1968. Ent. Soc. Amer., Ann. 61: 466-467.
- toreutae** Caltagirone. Mich., Wis. Host: *Laspeyresia toreuta* (Grote).
Phanerotoma toreutae Caltagirone, 1967. Pan-Pacific Ent. 43: 126. ♀, ♂.
- Biology: Harbo and Kraft, 1969. Ent. Soc. Amer., Ann. 62: 214-220.

SUBFAMILY ADELIINAE

Genus ADELIUS Haliday

Adelius Haliday, 1833. Ent. Mag. 1: 262.

Type-species: *Adelius subfasciatus* Haliday. Monotypic.

Acaelius Haliday, 1834. Ent. Mag. 2: 231. Emend.

Acoelius Haliday, 1834. Ent. Mag. 2: 539. Emend.

Pleiomerus Wesmael. 1837. Nouv. Mem. Acad. Sci. Bruxelles 10: 67.

Type-species: *Adelius subfasciatus* Haliday. Monotypic.

Anomopteris Rohwer, 1914. Psyche 21: 80.

Type-species: *Anomopteris fasciipennis* Rohwer. Orig. desig.

Myriola Shestakov, 1932. Zool. Anz. 99: 259.

Type-species: *Myriola gussakovskii* Shestakov. Monotypic.

This group, which is distinctive both morphologically and biologically, has been included in the Microgasterinae in the past. Recent workers (Capek, 1965; Nixon, 1965; Tobias, 1967) have

proposed a separate subfamily for *Adelius*, and a few related genera, which has affinities with the Cheloninae as well as the Microgastrinae. Hosts are larvae of leaf mining microlepidoptera.

Revision: Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 12-14 (No. Amer. spp.). —Telenga, 1955. Fauna U. S. S. R., v. 5, n. 4, p. 15-19 (some Eur. spp.).

Taxonomy: Capek, 1965. 12th Internatl. Cong. Ent., London, Proc. 1964, p. 98. —Nixon, 1965. Brit. Mus. (Nat. Hist.) Ent., Bul., Sup. 2, p. 8-10. —Tobias, 1967. Ent. Obozr. 46: 658. —Shenefelt, 1973. Hym. Cat., part 7, p. 670-675 (cat. World spp.).

coloradensis Muesebeck. Ill., La., Colo.

Adelius coloradensis Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 14. ♂.

fasciipennis (Rohwer). Va., Wis. Host: *Ectoedemia phleophaga* Busck.

Anomopteris fasciipennis Rohwer, 1914. Psyche 21: 80. ♀, ♂.

nigripectus Muesebeck. Ind. Host: Leaf miner in poplar.

Adelius nigripectus Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 13. ♂.

SUBFAMILY MICROGASTRINAE

All species of this, the largest subfamily of the Braconidae, are internal parasites of lepidopterous larvae. Some of the most important species in biological control belong to this group.

Revision: Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 6-76 (No. Amer. spp.).

Taxonomy: Nixon, 1965. Brit. Mus. (Nat. Hist.) Ent., Bul., Sup. 2, p. 1-13. —Tobias, 1967. Ent. Obozr. 46: 657. —Capek, 1970. Canad. Ent. 102: 856-858.

TRIBE MICROGASTRINI

Revision: Nixon, 1965. Brit. Mus. (Nat. Hist.) Ent., Bul., Sup. 2, p. 6-284 (key World genera).

Genus APANTELES Foerster

Apanteles Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 245.

Type-species: *Microgaster obscura* Nees. Orig. desig.

Cotesia Cameron, 1891. Manchester Lit. and Phil. Soc., Mem. and Proc. (4) 4: 185.

Type-species: *Cotesia flavipes* Cameron. Monotypic.

Pseudapanteles Ashmead, 1898 (1897). Ent. Soc. Wash., Proc. 4: 166.

Type-species: *Pseudapanteles annulicornis* Ashmead. Desig. by Viereck, 1911.

Protapanteles Ashmead, 1898 (1897). Ent. Soc. Wash., Proc. 4: 166.

Type-species: *Protapanteles ephyrae* Ashmead. Desig. by Viereck, 1914.

Urogaster Ashmead, 1898 (1897). Ent. Soc. Wash., Proc. 4: 166.

Type-species: *Urogaster vulgaris* Ashmead. Desig. by Viereck, 1914.

Parapanteles Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 131.

Type-species: *Apanteles aletiae* Riley. Orig. desig.

Glyptapanteles Ashmead, 1904. U. S. Natl. Mus., Proc. 28: 147.

Type-species: *Glyptapanteles manilae* Ashmead. Monotypic.

Cryptapanteles Viereck, 1910. Ent. Soc. Wash., Proc. 11: 209.

Type-species: *Cryptapanteles rileyanus* Viereck. Orig. desig.

Xestapanteles Cameron, 1910 (1909). Ztschr. f. Naturw. 81: 447.

Type-species: *Xestapanteles latianulatus* Cameron. Monotypic.

Apanteles subg. *Dolichogenidea* Viereck, 1911. U. S. Natl. Mus., Proc. 40: 173.

Type-species: *Apanteles (Dolichogenidea) banksi* Viereck. Orig. desig.

Stenopleura Viereck, 1911. U. S. Natl. Mus., Proc. 40: 187.

Type-species: *Apanteles sesamiae* Cameron. Orig. desig.

Allapanteles Brethes, 1915. Buenos Aires Mus. Nac. de Hist. Nat., An. 27: 404.

Type-species: *Allapanteles cecidiptae* Brethes. Monotypic.

Revision: Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 483-576 (No. Amer. spp.). —Wilkinson, 1928. Bul. Ent. Res. 19: 79-146 (Indo-Austral. spp.). —Wilkinson, 1932. Roy. Ent. Soc. London, Trans. 80: 301-344 (Afr. spp.). —Telenga, 1955. Fauna U. S. S. R., v. 5, n. 4, p. 21-147 (Eur. spp.).

- Taxonomy: Nixon, 1965. Brit. Mus. (Nat. Hist.) Ent., Bul., Sup. 2, p. 17-25 (key to spp. groups). —Shenefelt, 1972. Hym. Cat., part 7, p. 429-668 (cat. World spp.).
- absonus** Muesebeck. Newfoundland, Ont., Maine, Wis., Minn., Man., Alta., Mont., Colo., N. Mex., Idaho, Utah, B. C., Wash., Oreg. Host: *Acleris varia* (Fern.), *Archippus packardianus* (Fern.), *Argyrotaenia dorsalis* (Dyar), *Choristoneura fumiferana* (Clem.), *C. occidentalis* Freeman, *Dioryctria reniculella* (Grote), *Epinotia nanana* (Treits.), *Griselda radicans* Heinr., *Taniva albolineana* (Kearf.), *Zeiraphera canadensis* M. and F., *Z. griseana* (Hbn.), *Z. fortunana* (Kearf.), *Z. improbana* (Wlkr.).
- Apanteles absonus* Muesebeck, 1965. Ent. News 76: 71. ♀, ♂.
- Taxonomy: Mason, 1974. Canad. Ent. 106: 1098-1100.
- acaudus** (Provancher). Maine, Mass., R. I., Conn., N. Y., Va., Ont., Mich., Wis. Host: *Hydria prunivora* (Ferg.), *H. undulata* (L.).
- Microgaster acaudus* Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 142. ♀, ♂.
- Apanteles hydriae* Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 561. ♀, ♂.
- aciculatus** (Ashmead). Mo., Tex.; West Indies, Cent. Amer.
- Urogaster aciculatus* Ashmead, 1900. Roy. Ent. Soc. London, Trans. 1900: 289. ♂.
- Pseudapanteles sanctivincenti* Ashmead, 1900. Roy. Ent. Soc. London, Trans. 1900: 291. ♀, ♂. Preocc. by Ashmead, 1900: 279.
- Apanteles thoracicus* Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 534. N. name for *sanctivincenti* Ashmead, 1900: 291.
- acrobasisidis** Muesebeck. Md., Fla., Miss. Host: *Acrobasis caryae* Grote (?), *Gretchena bolliana* (Sling.).
- Apanteles acrobasisidis* Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 509. ♀.
- acronyctae** (Riley). N. H. s. to N. J., w. to Ont. and Mo.; Colo., Calif. Host: *Acronicta dactylina* (Grote), *A. leporina* (L.) (?), *A. lepusculina* Gn., *A. obliqua* (Smith), *Merolonche lupini* (Grote), *Orgyia leucostigma* (Smith) (?).
- Microgaster acronyctae* Riley, 1870. Ins. Mo., Ann. Rpt. 2: 120.
- Apanteles acronyctae* Riley, 1881. Acad. Sci. St. Louis, Trans. 4: 312. ♂.
- Apanteles orgyiae* Ashmead, 1893. Ohio Expt. Sta., Bul. 1: 159. ♀.
- agricola** Viereck. Conn., N. C.
- Apanteles (Protapanteles) agricola* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 192. ♀.
- alaskensis** (Ashmead). Mich., B. C., Calif., Alaska. Host: *Gabriola dyari* Tay., *Oporinia autumnata* (Gn.).
- Protapanteles alaskensis* Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 247. ♀, ♂.
- aletiae** Riley. Fla., Ala.; West Indies. Host: *Alabama argillacea* (Hbn.), *Gonodonta nutrix* (Cram.).
- Apanteles aletiae* Riley, 1881. Acad. Sci. St. Louis, Trans. 4: 296, 298, 306. ♀, ♂.
- algonquiorum** Viereck. Conn.
- Apanteles (Protapanteles) algonquiorum* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 196.
- alticola** (Ashmead). N. B., Maine, N. H., Colo., Utah, Idaho, Oreg., Calif., Alaska. Host: *Amathes collaris* (G. and R.), *Diarsia rosaria* (Grote), *Euzoa ochrogaster* (Gn.).
- Protapanteles alticola* Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 248. ♂.
- alypiae** Muesebeck. Conn., N. Y. Host: *Alypia octomaculata* (F.).
- Apanteles alypiae* Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 18. ♀, ♂.
- americanus** (Lepeletier). Fla., Miss., Okla., Tex., Ariz. Host: *Erinnyis ello* (L.), *Manduca* sp.
- Microgaster americanus* Lepeletier, 1825. Encycl. Meth. Ins. 10: 42. ♀, ♂.
- Microgaster flaviventris* Cresson, 1865. Ent. Soc. Phila., Proc. 4: 66. ♀.
- Apanteles mexicanus* Ashmead, 1895. Calif. Acad. Sci., Proc. 5: 545. ♀, ♂.
- ammalonis** Muesebeck. N. J. Host: *Cynia tenera* Hbn.
- Apanteles ammalonis* Muesebeck, 1926. U. S. Natl. Mus., Proc. 69 (7): 8. ♀, ♂.
- angaleti** Muesebeck. La. (?), Tex. (?); India, Sumatra. Liberated in La. and Tex. but not established. Introduced from India. Host: *Pectinophora gossypiella* (Saund.).
- Apanteles angaleti* Muesebeck, 1954. Lab. Zool. Gen. Agr. Portici, Bol. 33: 61. ♀, ♂.

- anisotae** Muesebeck. N. B. s. to Md.; Ont. Host: *Anisota senatoria* (Smith), *A. stigma* (F.), *A. s. fuscata* Ferg., *Dryocampa rubicunda* (F.).
Apanteles anisotae Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 555. ♀.
- argynnidis** Riley. Mass., N. Y., N. J., D. C., W. Va., Ky., Ill., Tex. Host: *Epargyreus clarus* (Cram.), *Erynnis tristis tatus* (Edw.), *E. zarucco funeralis* (S. and B.), *Speyeria cybele* (F.).
Apanteles argynnidis Riley, 1889. In Scudder, Butterflies East. U. S., p. 1904. ♀.
- aristoteliae** Viereck. N. B. s. to Pa., w. to Ont., Wash., and Calif.; La., Ariz. Host: *Ancylis comptana fragaria* (W. and R.), *Argyrotaenia citrana* (Fern.), *Aristotelia fungiorella* (Chamb.), *Aroga trialbamaculella* (Chamb.), *Choristoneura fumiferana* (Clem.), *Dioryctria reniculella* (Grote), *Filatima persicaeella* (Murtf.), *Gelechia* sp.
Apanteles (Apanteles) aristoteliae Viereck, 1912. U. S. Natl. Mus., Proc. 42: 613. ♂.
Apanteles (Apanteles) gelechia Viereck, 1912. U. S. Natl. Mus., Proc. 42: 615. ♀.
- Biology: Basinger, 1938. Hilgardia 11: 661-663.
- atalantae** (Packard). Mass., Pa., N. J., W. Va., Ont., Mich., Wis., Iowa, Mo., Minn., N. Dak., Sask., Alta., Colo., Tex. Host: *Nymphalis antiopa* (L.), *N. milberti* (Godt.), *Polygonia* sp., *Vanessa atalanta* (L.).
Microgaster atalantae Packard, 1881 (1880). Boston Soc. Nat. Hist., Proc. 21: 28. ♀, ♂.
- autographae** Muesebeck. Newfoundland, Que., Md., Va., S. C., Ga., Fla., Mich., La., S. Dak., Tex., Colo., Oreg. Host: *Autographa* sp., *Autoplusia egea* (Gn.), *Pseudaletia unipuncta* (Haw.), *Pseudoplusia includens* (Wlkr.), *Rachiplusia ou* (Gn.), *Spodoptera frugiperda* (Sm.), *Trichoplusia ni* (Hbn.).
Apanteles autographae Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 547. ♀.
- baldufi** Muesebeck. N. Y., N. C., Ont., Mich., Minn. Host: *Acrobasis betulella* Hulst, *A. rubrifasciella* Pack., *A. secundella* Ely.
Apanteles baldufi Muesebeck, 1968. In Balduf, Ent. Soc. Amer., Ann. 61: 463. ♀, ♂.
- Biology: Balduf, 1968. Ent. Soc. Amer., Ann. 61: 464-465.
- banksi** Viereck. N. Y., Pa., Md., D. C., Va., Mich., Minn.
Apanteles (Dolichogenidea) banksi Viereck, 1911. U. S. Natl. Mus., Proc. 40: 173. ♀.
- bedelliae** Viereck. Conn. s. to Va., w. to Ont., Kans., and La.; Utah, Ariz., Oreg., Calif. Host: *Anomis erosa* Hbn., *Bedellia minor* Busck, *B. somnulentella* (Zell.), *Coleotechnites thujaeella* Kearf., *Cosmopterix* sp., *Lithocolletis tremuloidiella* Braun, *Paraleucoptera albella* (Chamb.).
Apanteles (Protapanteles) bedelliae, Viereck, 1911. U. S. Natl. Mus., Proc. 40: 174. ♀, ♂.
- betheli** Viereck. Colo. Host: *Argyresthia* sp.(?).
Apanteles (Apanteles) betheli Viereck, 1910. U. S. Natl. Mus., Proc. 39: 402. ♀, ♂.
- bucculatricis** Muesebeck. Calif. Host: *Bucculatrix albertiella* Busck, *B. thurberiella* (Busck).
Apanteles bucculatricis Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 502. ♀, ♂.
- bushnelli** Muesebeck. N. C., Fla., Iowa, S. Dak., Nebr., Mont., Calif. Host: *Dioryctria abietella* (D. and S.), *D. clarioralis* (Wlkr.), *D. disculsa* Heinr., *Rhyacionia bushnelli* (Busck), *R. pasadenana* (Kearf.).
Apanteles bushnelli Muesebeck, 1933. Ent. Soc. Wash., Proc. 35: 196. ♀, ♂.
- caberatae** Muesebeck. Oreg., Calif. Host: *Sabulodes caberata* (Gn.).
Apanteles caberatae Muesebeck, 1956. Pan-Pacific Ent. 32: 26. ♀, ♂.
- cacoeiae** Riley. U. S., Ont., Que. Host: *Acrobasis caryae* Grote, *Archips argyrospilus* (Wlkr.), *A. cerasivoranus* (Fitch), *A. semiferanus* (Wlkr.), *Epiblemma scudderianum* (Clem.), *Epinotia* sp., *Exartema valdanum* McD., *Gnorimoschema gallaesolidaginis* (Riley), *Grapholitha molesta* (Busck), *Sciaphila duplex* (Wlsm.).
Apanteles cacoeiae Riley, 1881. Acad. Sci. St. Louis, Trans. 4: 305. ♀, ♂.
Pseudapanteles gallaediploppi Ashmead, 1899. In Smith, Ins. of N. J., p. 593. Nom. nud.
- caffreyi** Muesebeck. Tex., Ariz.; Mexico, West Indies, Cent. Amer., Colombia.
Apanteles caffreyi Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 540. ♀, ♂.
- californicus** Muesebeck. Que., Ont., Alta., B. C., Idaho, Oreg., Calif. Host: *Coleotechnites* sp., *C. gibsonella* Kearf., *C. milleri* (Busck), *Epinotia meritana* Heinr., *Eucosma bobana* Kearf.
Apanteles californicus Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 511. ♀, ♂.

- Biology: Telford, 1961. Jour. Econ. Ent. 54: 347-355. — Stark, 1961. Canad. Jour. Zool. 39: 894.
- canarsiae** Ashmead. Conn. s. to Ga., w. to Ont. and Kans.; Calif. Host: *Acrobasis betulella* Hulst, *Ancylis comptana* (Froel.), *Argyrotaenia velutinana* (Wlkr.), *Desmia funeralis* (Hbn.), *Dioryctria reniculella* (Grote), *Psorosina hammondi* (Riley).
- Apanteles canarsiae* Ashmead, 1898. Ent. Soc. Wash., Proc. 4: 127. ♀, ♂.
- Apanteles (Apanteles) housatannuckorum* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 189, 198.
- Apanteles (Apanteles) maquinnai* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 190, 199. ♀.
- carduicola** (Packard). Mass. Host: *Cynthia cardui* (L.).
- Microgaster carduicola* Packard, 1881 (1880). Boston Soc. Nat. Hist., Proc. 21: 27. ♀, ♂.
- carpatius** (Say). Cosmopolitan. Host: *Nititinea fuscipunctella* (Haw.), *Phercoeca utrella* (Wlsm.), *Tinea despecta* Meyr., *T. pelliionella* (L.), *Tineola biselliella* (Hum.), *Trichophaga tapetzella* (L.).
- Microgaster carpata* Say, 1836. Boston Jour. Nat. Hist. 1: 263. ♀.
- Protapanteles hawaiiensis* Ashmead, 1901. Fauna Hawaii. 1: 362. ♀.
- Urogaster solitarius* Ashmead, 1901. Ent. Soc. London, Trans. 1900, p. 287. ♀. Preocc. by Ratzeburg, 1844.
- Apanteles piceoventris* Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 515. N. name for *solitarius* Ashmead.
- Apanteles igae* Watanabe, 1932. Insecta Matsumurana 7: 97. ♀.
- Biology: Fallis, 1942. Canad. Jour. Res., Sect. D, Zool. Sci. 20: 13-19. — Key and Common, 1959. Austral. Jour. Zool. 7: 64.
- cassianus** Riley. Ill., Tex., Colo. Host: *Colias eurytheme* Bdlv., *Eurema nicippe* (Cram.).
- Apanteles cassianus* Riley, 1881. Acad. Sci. St. Louis, Trans. 4: 307. ♀, ♂.
- cerurae** Muesebeck. Conn., N. J. Host: *Cerura* sp., *C. scitiseripta* Wlkr.
- Apanteles cerurae* Muesebeck, 1926. U. S. Natl. Mus., Proc. 69 (7): 15. ♀, ♂.
- charadrae** Muesebeck. D. C. Host: *Charadra deridens* (Guen.).
- Apanteles charadrae* Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 567. ♀, ♂.
- choreuti** Viereck. N. J., Va., N. C., S. C., Fla., Iowa, Tex. Host: *Choreutis carduiella* Kearf., *Desmia funeralis* (Hbn.), *Dichomeris* sp., *Hellula undalis* (F.).
- Apanteles (Pseudapanteles) choreuti* Viereck, 1912. U. S. Natl. Mus., Proc. 42: 627. ♀, ♂.
- cinctiformis** Viereck. N. Y. s. to Va., w. to Ont. and N. Dak.
- Apanteles (Protapanteles) cinctiformis* Viereck, 1911. U. S. Natl. Mus., Proc. 40: 176. ♀.
- cingiliae** Muesebeck. N. S., Que., Mass., Ont. Host: *Cingilia catenaria* (Drury), *Enypia griseata* Grossb., *E. venata* (Grote), *Eupithecia gibsonata* Tay., *Nepytia canosaria* (Wlkr.).
- Apanteles cingiliae* Muesebeck, 1931. U. S. Natl. Mus., Proc. 79 (16): 6. ♀, ♂.
- clavatus** (Provancher). Canada; Maine s. to S. C., w. to Wis. and Ark.; Oreg., Calif. Host: *Archips argyrosipilus* (Wlkr.), *Epinotia subviridis* Heinr., *Etiella zinckenella* (Treit.), *Grapholitha molesta* (Busck).
- Microgaster clavatus* Provancher, 1881. Nat. Canad. 12: 196. ♀, ♂.
- clisiocampae** Ashmead. N. H., Conn., N. Y., N. J. Host: *Malacosoma americanum* (F.).
- Apanteles clisiocampae* Ashmead, 1903. In Fiske, N. H. Col. Agr. Expt. Sta., Tech. Bul. 6: 229. ♀.
- Biology: Fiske, 1903. N. H. Col. Agr. Expt. Sta., Tech. Bul. 6: 214-216.
- cockerelli** Muesebeck. Mich., Iowa, Mo., S. Dak., Nebr., Tex., N. Mex., Idaho, Oreg., Calif. Host: *Isophrictus* sp.
- Apanteles cockerelli* Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 524. ♀.
- compressiventris** Muesebeck. Baffin Isl., Que., N. H., N. W. T.; Europe. Host: *Phragmatobia fuliginosa* (L.).
- Apanteles compressiventris* Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 535. ♀, ♂.
- compressus** Muesebeck. N. H., R. I., Mass. Host: *Hypoprepia* sp.
- Apanteles compressus* Muesebeck, 1919. Canad. Ent. 51: 114. ♀, ♂.

- conanchetorum** Viereck. N. S. s. to S. C., w. to Ont., S. Dak., and Kans. Host: *Loxostege mancalis* (Led.), *L. raitalis* (Guen.), *Pholisora catullus* (F.).
Apanteles (*Apanteles*) **conanchetorum** Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22: 199. ♀.
- congestiformis** Viereck. Alaska.
Apanteles (*Protapanteles*) **congestiformis** Viereck, 1923. No. Amer. Fauna 46: 230. ♀, ♂.
- congregatus** (Say). No. Amer., Cent. Amer., So. Amer., West Indies. Host: *Ceratonia catalpae* (Bdvl.), *Darapsa myron* (Cram.), *D. versicolor* (Harr.), *Dolba hylaeus* (Drury), *Eumorphia achenan* (Drury), *E. pandorus* (Hbn.), *Hemaris diffinis* (Bdvl.), *Lapara bombycoides* Wlkr., *Manduca quinque-maculata* (Haw.), *M. sexta* (L.), *Paratreia plebeja* (F.), *Sphecodina abbottii* (Swains.), *Sphinx chersis* (Hbn.), *S. kalmiae* Smith, *Trichoplusia ni* (Hbn.).
Microgaster congregata Say, 1836. Boston Jour. Nat. Hist. 1: 262. ♂.
Microgaster utilis French, 1880. Canad. Ent. 12: 42. ♀, ♂.
Apanteles (*Protapanteles*) **augustus** Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22: 187, 194. ♀.
- Biology: Gilmore, 1938. Jour. Econ. Ent. 31: 712-715. —Worth, 1939. Ent. News 50: 137-141. —Fulton, 1940. Ent. Soc. Amer., Ann. 33: 240. —Lawson, 1959. Ent. Soc. Amer., Ann. 52: 743-744. —Rabb and Thurston, 1969. Ent. Soc. Amer., Ann. 62: 125-128. —Postley and Thurston, 1974. Jour. Econ. Ent. 67: 716-718. —Thurston, 1976. Environ. Ent. 5: 626-627.
- consimilis** Viereck. Que. s. to Fla., w. to Man.; Miss., Tex.
Microgaster lateralis Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 141. ♀. Preocc. by Haliday, 1834.
Apanteles (*Pseudapanteles*) **consimilis** Viereck, 1911. U. S. Natl. Mus., Proc. 40: 177. ♀.
- crambi** Weed. Md., Ohio, Ky., Tenn., Ill., Mo., Ark., S. Dak. Host: *Crambus mutabilis* Clem., *C. trisetus* (Wlkr.), *C. zeellus* Fern.
Apanteles crambi Weed, 1887. Ill. State Lab. Nat. Hist., Bul. 3, p. 8. ♀.
- crassicornis** (Provancher). Que. s. to Md., w. to Ont. and Iowa; Kans., Ariz.
Microgaster crassicornis Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 142. ♀.
- cyaniridis** Riley. Que., W. Va., Ill., Minn., Iowa, Utah. Host: *Celastrina argiolus pseudargiolus* (Bdvl. and Lec.), *Incisalia henrici* (G. and R.), *Philotes battatoides bernardino* B. and McD.
Apanteles cyaniridis Riley, 1889. In Scudder, Butterflies East. U. S., p. 1903. ♀.
- dakotae** Muesebeck. S. Dak., Idaho.
Apanteles dakotae Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 525. ♀.
- delicatus** Howard. Conn. N. Y., D. C. Host: *Orygia leucostigma* (Smith).
Apanteles delicatus Howard, 1897. U. S. Dept. Agr., Bur. Ent. Tech. Ser. 5: 24, 55. "♂" = ♀.
- depressariae** Muesebeck. N. S., Maine. Host: *Depressaria pastinacella* (Dup.).
Apanteles depressariae Muesebeck, 1931. U. S. Natl. Mus., Proc. 79 (16): 3. ♀, ♂.
- depressus** Viereck. Ind.
Apanteles (*Stenopleura*) **depressus** Viereck, 1912. U. S. Natl. Mus., Proc. 43: 582. ♀, ♂.
- diacrisiae** Gahan. Del. s. to S. C., w. to Kans. and La. Host: *Dasychira basiflava* (Pack.), *Diacrisia virginica* (F.), *Estigmene acrea* (Drury), *Hyphantria cunea* (Drury), *Orygia definita* (Pack.), *O. leucostigma* (Sm.).
Apanteles diacrisiae Gahan, 1917. U. S. Natl. Mus., Proc. 53: 198. ♀, ♂.
- diatraeae** Muesebeck. Tex., Ariz.; Mexico, Cent. and So. Amer., West Indies. Host: *Diatraea grandiosella* Dyar, *D. lineolata* (Wlkr.), *D. saccharalis* (F.).
Apanteles diatraeae Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 520. ♀, ♂.
- Biology: Davis, 1944. U. S. Dept. Agr., Tech. Bul. 871, p. 1-19.
- dignus** Muesebeck. Fla., Calif.; Mexico, West Indies, Hawaii. Host: *Keiferia lycopersicella* (Wlsm.), *Tildenia gudmannella* (Wlsm.).
Apanteles dignus Muesebeck, 1938. Ent. Soc. Wash., Proc. 40: 203. ♀, ♂.
- Biology: Cardona and Oatman, 1971. Ent. Soc. Amer., Ann. 64: 996-1007.

disputabilis (Ashmead). Kans., Tex.; West Indies, Brazil.

Urogaster disputabilis Ashmead, 1900. Ent. Soc. London, Trans. 2: 286. ♀, ♂.

diversus Muesebeck and Walkley. Conn. Host: *Acrionicta obliquata* (Smith).

Apanteles coralis Muesebeck, 1926. U. S. Natl. Mus., Proc. 69 (7): 13. ♀, ♂. Preocc. by Szepilgeti, 1911.

Apanteles diversus Muesebeck and Walkley, 1951. In Muesebeck, et al., U. S. Dept. Agr., Agr. Monog. 2, p. 127. N. name for *coralis* Muesebeck.

dolichocephalus Muesebeck. Va., Mich., Ill.

Apanteles dolichocephalus Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 503. ♀.

edwardsii Riley. Conn., Ohio, Mich., Minn., Iowa, Mo., Colo. Host: *Vanessa atalanta* (L.).

Apanteles edwardsii Riley, 1889. In Scudder, Butterflies East. U. S., p. 1901. ♀.

electrae Viereck. B. C. s. to Calif. and Tex. Host: *Agapema galbina* (Clem.), *Automeris io* (F.), *Coloradia pandora* Blake, *Dirphia* sp., *Hemileuca burnsi* Wats., *H. chinatiensis* (Tinkham), *H. eglanterina* (Bdvl.), *H. electra* Wright, *H. hera* (Harr.), *H. nevadensis* Stretch, *H. oliviae* Ckll., *H. tricolor* (Pack.).

Apanteles (Protapanteles) electrae Viereck, 1912. U. S. Natl. Mus., Proc. 42: 145. ♀, ♂.

empretiae Viereck. Mass. s. to Fla., w. to Mo. and La. Host: *Euclea delphinii* Bdvl., *Lithacodes fasciola* (H.-S.), *Parasa chloris* (H.-S.), *Sibine stimulea* (Clem.).

Apanteles (Protapanteles) empretiae Viereck, 1913. U. S. Natl. Mus., Proc. 44: 562. ♀, ♂.

Apanteles (Apanteles) sibiridis Rohwer, 1915. U. S. Natl. Mus., Proc. 49: 227. ♀, ♂.

Biology: Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 60.

ensiger (Say). Maine s. to Fla., w. to Ont. and La.; Colo. Host: *Crambus mutabilis* Clem., *C. zeellus* Fern., *Lorostege* sp.

Microgaster ensiger Say, 1836. Boston Jour. Nat. Hist. 1: 260. ♀ (♂ misdet.).

Microgaster femurnigrum Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 142. "♀" = ♂.

Apanteles trachynotus Viereck, 1912. U. S. Natl. Mus., Proc. 42: 616. ♂.

Apanteles nipmuckorum Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 200.

enypiae Mason. B. C. Host: *Enypia griseata* Grossb., *E. moillietti* Blkmr., *E. venata* (Grote).

Apanteles enypiae Mason, 1959. Canad. Ent. 91: 47. ♀, ♂.

epiblemae Muesebeck. Del., Ga., Fla., Miss., Ark., Kans., Calif. Host: *Bactra verutana* Zell., *Epiblema strenuanum* (Wlkr.), *Grapholitha molesta* (Busck).

Apanteles epiblemae Muesebeck, 1935. Wash. Acad. Sci., Jour. 25: 280. ♀, ♂.

epinotiae Viereck. Maine s. to Fla., w. to N. Dak. and Tex.; Ariz. Host: *Acrobasis caryivorella* Rag., *Episimus argutanus* (Clem.), *Grapholitha molesta* (Busck), *Gypsonoma salicicolana* (Clem.), *Homoeosoma electellum* (Hulst), *Laspeyresia caryana* (Fitch), *Phalonia* sp., *Pterophorus periscelidactylus* Fitch, *Rhyacionia* sp., *Tetralopha robustella* Zell.

Apanteles (Apanteles) epinotiae Viereck, 1912. U. S. Natl. Mus., Proc. 42: 614. ♂.

Biology: Satterthwaite, 1948. Jour. Econ. Ent. 41: 730. —Nickels et al., 1950. U. S. Dept. Agr., Tech. Bul. 1011: 4-6. —Allen, 1962. U. S. Dept. Agr., Tech. Bul. 1256: 34-35.

etiellae Viereck. Pa., Va., Iowa, Ark., Kans., Tex., Colo., N. Mex., Wash., Calif.; Mexico. Host: *Canarsia* sp., *Etiella zinckenella* (Treit.), *Olycella junctolineella* (Hulst), *Psorosina hammondi* (Riley), *Ufa rubedinella* (Zell.).

Apanteles (Pseudapanteles) etiellae Viereck, 1911. U. S. Natl. Mus., Proc. 40: 178. ♂.

Apanteles iselyi Cushman, 1919. Ent. Soc. Wash., Proc. 21: 120. ♀, ♂.

euchaetis Ashmead. N. H., Mass., N. Y., Va., Mich., Ill., Tex. Host: *Euchaetis egle* (Drury). *Apanteles euchaetis* Ashmead, 1897. Ent. Soc. Wash., Proc. 4: 159. ♀, ♂.

euphydryidis Muesebeck. Maine, N. Y., N. J., Md. Host: *Euphydryas phaeton* (Drury).

Apanteles euphydryidis Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 564. ♀, ♂.

feltiae Viereck. Mich., Ohio, Ind., Minn., Iowa, N. Dak., S. Dak., Sask., Utah, Ariz., Idaho, Calif. Host: *Aristotelia absconditella* (Wlkr.), *Ostrinia obumbratalis* (Led.).

Apanteles (Protapanteles) feltiae Viereck, 1912. U. S. Natl. Mus., Proc. 42: 625. ♀.

- fiskei* Viereck. Mass., Wis., Mont., Wyo., Oreg. Host: *Dasychira basiflava* (Pack.), *D. plagiata* (Wlkr.).
Apanteles (*Protapanteles*) *fiskei* Viereck, 1910. U. S. Natl. Mus., Proc. 38: 379. ♀, ♂.
- flaviconchae** Riley. Maine s. to Va., w. to Minn. and Tex.; Ida., Utah, Ariz., Wash. Host: *Anthocaris midea* (Hbn.), *Autographa* sp., *Cobias eurytheme* Bdlv., *C. philodice* (Godart), *Plathypena scabra* (F.), *Pseudaletia unipuncta* (Haw.).
Apanteles limenitidis form *flaviconchae* Riley, 1881. Acad. Sci. St. Louis, Trans. 4: 308.
- Taxonomy: Muesebeck, 1947. Pan-Pacific Ent. 23: 21-22.
- Biology: Muesebeck, 1947. Pan-Pacific Ent. 23: 21-22.
- flavicornis** Riley. Mo., Tex. Host: *Erynnis juvenalis* (F.).
Apanteles flavicornis Riley, 1889. In Scudder, Butterflies East. U. S., p. 1905. ♀, ♂.
- flavipes** (Cameron). Fla.; China, Asia, Austr., So. Pac., Mauritius, Madagascar. Introduced from India. Host: *Diatraea saccharalis* (F.).
Cotesia flavipes Cameron, 1891. Manchester Lit. and Phil. Soc., Mem. and Proc. (4) 4: 185.
 "♀" = ♂.
Apanteles nonagriæ Olliff, 1893. Agr. Gaz. N. S. Wales 4: 376, 381. ♀, ♂.
Apanteles (*Stenopteleura*) *simplicis* Viereck, 1913. U. S. Natl. Mus., Proc. 44: 645. ♀, ♂.
Apanteles flavatus Ishida, 1915. Kansho Meichu Chosa Hokoku 1: 97.
- Biology: Gifford and Mann, 1967. Jour. Econ. Ent. 60: 44-47.
- flavovariatus** Muesebeck. Mich., S. Dak., Oreg. Host: *Isia isabella* (Smith).
Apanteles flavovariatus Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 528. ♀, ♂.
- floridanus** Muesebeck. Fla. Host: *Leucania latiuscula* H.-S.
Apanteles floridanus Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 537. ♀, ♂.
- forbesi** Viereck. Mass. s. to Fla., w. to N. Dak. and Kans.; Ariz., Oreg. Host: *Feltia* sp., *Lacinipolia renigera* (Steph.), *L. stricta* (Wlkr.), *Pseudaletia unipuncta* (Haw.).
Apanteles (*Apanteles*) *forbesi* Viereck, 1910. Ent. Soc. Wash., Proc. 11: 208. ♀, ♂.
- fulvipes** (Haliday). Greenland; Europe.
Microgaster fulvipes Haliday, 1834. Ent. Mag. 2: 249. ♀, ♂.
- fumiferanae** Viereck. North. U. S., south. Canada. Host: *Acleris variaria* (Fern.), *Choristoneura fumiferana* (Clem.), *C. lambertiana* (Busck), *C. occidentalis* Freem., *C. pinus* Freem., *C. viridis* Freem., *Dioryctria abietella* (D. and S.), *D. reniculella* (Grote), *Epinotia nanana* (Treit.), *Taniva albolineana* (Kearf.), *Thymelicus lineola* Ochs., *Zeiraphera canadensis* M. and F., *Z. fortunana* (Kearf.), *Zelleria haimbachi* Busck.
Apanteles (*Apanteles*) *fumiferanae* Viereck, 1912. U. S. Natl. Mus., Proc. 42: 139. ♀, ♂.
- Taxonomy: Mason, 1974. Canad. Ent. 106: 1088-1092.
- Biology: Brown, 1946. Canad. Ent. 78: 121-129. —McGugan, 1955. Canad. Ent. 87: 178-187.
 —Miller, 1959. Canad. Ent. 91: 457-477. —McGugan and Blais, 1959. Canad. Ent. 91: 774.
 —Lewis, 1960. Canad. Ent. 92: 881-891.
- galleriae** Wilkinson. Va., N. C., S. C., Ga., Fla., La., Kans.; France, Argentina, Mauritius, India.
 Host: *Galleria mellonella* (L.).
Apanteles galleriae Wilkinson, 1932. Stylops 1: 139. ♀, ♂.
- gillettei** Baker. Colo., Ariz. Host: *Archips argyropilus* (Wlkr.).
Apanteles gillettei Baker, 1895. Ent. News 6: 202. ♀, ♂.
- glacialis** (Ashmead). B. C., Alaska. Host: *Hyphantria textor* (Harr.).
Protapanteles glacialis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 248. ♂.
- glomeratus** (Linnaeus). U. S., Canada; Europe. Host: *Pieris brassicae* (L.), *P. napi oleracea* Harr., *P. protodice* Bdlv. and Lec., *P. rapae* (L.), *Trichoplusia ni* (Hbn.).
Ichneumon glomeratus Linnaeus, 1758. Syst. Nat., Ed. 10., v. 1, p. 568.
Microgaster reconditus Nees, 1834. Ichn. Aff. Monog., v. 1, p. 174. ♀, ♂.
Microgaster crataegi Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 72.
Microgaster pieridis Packard, 1881 (1880). Boston Soc. Nat. Hist., Proc. 21: 26. ♀, ♂.
 Preocc. by Bouche, 1834.
Microgaster congregatus pieridivora Riley, 1882. Amer. Nat. 16: 679. N. name for *pieridis* Packard.

Glyptapanteles nawaii Ashmead, 1906. U. S. Natl. Mus., Proc. 30: 193. ♀, ♂.

Biology: Faure, 1926. Contrib. a l'etude de la Pierdie du Chon. Univ. Lyon, p. 41-52.
—Hamilton, 1935. Ent. Monthly Mag. 71: 262-270. —Hamilton, 1936. Ent. Monthly Mag. 72: 25-27. —Johansson, 1951. Norsk. Ent. Tidsskr. B. 7 (4-5): 145-186. —Matsuzawa, 1955. Kagawa-Ken Agr. Col., Tech. Bul. 7, p. 60. —Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, p. 77. —Blunck and Wilbert, 1959. Internatl. Congr. Crop Prot., Proc. 4, v. 1, p. 1017. —Moiseeva, 1960. Leningrad. Vsesoiuzn. Inst. Rast., Trudy 14: 51. —Todd, 1962. N. Zeal. Jour. Sci. 5: 1-7 (distribution). —Parker, 1971. Jour. Econ. Ent. 64: 721-735. —Fuhrer and Keja, 1976. Ent. Exp. Appl. 19: 287-300.

Morphology: Marchal-Segault, 1974. Soc. Ent. France, Ann. 10: 987-993 (larvae).

gordii Muesebeck. Maine, Conn. Host: *Darapsa pholus* (Cram.), *Sphinx gordius* Cram.

Apanteles gordii Muesebeck, 1926. U. S. Natl. Mus., Proc. 69 (7): 9. ♀.

griffini Viereck. Que. s. to Fla., w. to S. Dak. and Tex.; Wash. Host: *Agrotis gladiaria* Morr., *Euxoa auxiliaris* (Grote), *Feltia ducens* (Wlkr.), *F. subterranea* (F.), *Spodoptera ornithogalli* (Guen.).

Apanteles (Protopanteles) griffini Viereck, 1911. U. S. Natl. Mus., Proc. 40: 177. ♀, ♂.

hadenae Muesebeck. N. J., Mich. Host: *Grapholitha* sp., *Phosphila turbulenta* Hbn.

Apanteles hadenae Muesebeck, 1926. U. S. Natl. Mus., Proc. 68 (7): 14. ♀, ♂.

halisidotae Muesebeck. Maine, Mass. Host: *Halisidota maculata* (Harr.).

Apanteles halisidotae Muesebeck, 1931. U. S. Natl. Mus., Proc. 79 (16): 5. ♀, ♂.

halli (Packard). Greenland, N. W. T.

Microgaster Halli Packard, 1877. Amer. Nat. 11: 52.

harrisinae Muesebeck. Conn., Fla., Ariz., Calif. Host: *Harrisina americana* (Guer.), *H. brillians* B. and McD.

Apanteles harrisinae Muesebeck, 1953. Ent. Soc. Wash., Proc. 55: 150. ♀, ♂.

Biology: Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767, p. 60. —Clausen, 1961. Hilgardia 31: 613-638.

harti Viereck. D. C., Mich., Ohio, Tenn., Wis., Iowa. Host: *Ostrinia obumbratalis* (Led.), *O. penitalis* (Grote).

Apanteles harti Viereck, 1910. Ent. Soc. Wash., Proc. 11: 209. ♀, ♂.

hemileuca Riley. Mass., Conn., N. Y., Fla., Minn., Mo., Kans., Oreg. Host: *Automeris io* (F.), *Hemileuca maia* (Drury).

Apanteles congregatus var. *hemileuca* Riley, 1881. Acad. Sci. St. Louis, Trans. 4: 309.

herbertii Ashmead. Fla.; West Indies. Host: *Hystalea nysius* Cram.

Apanteles herbertii Ashmead, 1900. Roy. Ent. Soc. London, Trans. 1900: 279. ♀.

hesperidivorus Viereck. Mass., Conn., Fla., Mo., La., Okla., Ariz., Calif. Host: *Atalopedes campestris* (Bdvl.), *Erynnis* sp., *E. tristis* (Bdvl.), *Hylephila phyleus* (Drury).

Apanteles (Protopanteles) hesperidivorus Viereck, 1912. U. S. Natl. Mus., Proc. 42: 626. ♀, ♂.

homoeosomae Muesebeck. S. Dak., Mo., Tex., Wash.; Cuba. Host: *Homoeosoma electellum* (Hulst).

Apanteles homoeosomae Muesebeck, 1933. Ent. Soc. Wash., Proc. 35: 193. ♀, ♂.

hyphanthiae Riley. U. S., Canada; Mexico, Europe. Host: *Homadaula anisocentra* (Meyr.), *Hyphanthia cunea* (Drury), *H. textor* (Harr.), *Orgyia leucostigma* (Smith).

Apanteles hyphanthiae Riley, 1887. U. S. Dept. Agr., Ann. Rpt. for 1886, p. 533. ♀.

Biology: Tothill, 1922. Canada Dept. Agr., Tech. Bul. (n. s.) 3, p. 76-88. —Tadic, 1958 (1956). 10th Internatl. Congr. Ent., Proc. 4: 859-861.

impunctatus Muesebeck. La. Host: *Diatraea saccharalis* (F.).

Apanteles impunctatus Muesebeck, 1933. Ent. Soc. Wash., Proc. 35: 194. ♀, ♂.

insignis Muesebeck. B. C., Calif. Host: *Playtyptilia acanthodactyla* (Hbn.), *P. pica* (Wlsm.), *P. punctidactyla* (Haw.).

Apanteles insignis Muesebeck, 1938. Ent. Soc. Wash., Proc. 40: 201. ♀, ♂.

junoniae Riley. Mo., Kans. Host: *Junonia coenia* (Hbn.).

Apanteles junoniae Riley, 1889. In Scudder, Butterflies East. U. S., p. 1907. ♂.

koebele Riley. Idaho, Calif. Host: *Euphydryas chalcedona* (D. and H.), *E. editha* (Bdvl.), *E. e. monoensis* G., *E. e. nubigena* (Behr.), *Melitaea leanira* (F. and F.), *M. neumogeni* Skin., *Nymphalis californica* (Bdvl.).

Apanteles koebele Riley, 1889. In Scudder, Butterflies East. U. S., p. 1904. ♀, ♂.

lacteicolor Viereck. New England, east. Canada; Europe. Introduced from Europe. Host: *Acronicta hasta* Guen., *Hyphantria cunea* (Drury), *Nygmia phaeorrhoea* (Donov.), *Lymantria dispar* (L.).

Apanteles (Apanteles) lacteicolor Viereck, 1911. U. S. Natl. Mus., Proc. 40: 475. ♀, ♂.

Biology: Muesebeck, 1918. Jour. Agr. Res. 12: 191-206. — Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, p. 77. — Dowden, 1962. U. S. Dept. Agr., Agr. Handb. 226, p. 48.

laeviceps Ashmead. U. S., south. Canada. Host: *Anacamptodes vellivolata* (Hulst), *Autographa* sp., *Eucirrhoedia pampina* (Gn.), *Euxoa auxiliaris* (Grote), *E. a. agrestis* (Grote), *E. ochrogaster* (Gn.), *Faronta diffusa* (Wlkr.), *Feltia ducens* Wlkr., *Lacinipolia meditata* (Grote), *Loragrotis albicosta* (Sm.), *Luperina stipata* (Morr.), *Pseudaetia unipuncta* (Haw.), *Scologramma* sp., *Spaelotis clandestina* (Harr.), *Spodoptera exigua* (Hbn.), *Trichoplusia ni* (Hbn.).

Apanteles laeviceps Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 17. ♀, ♂.

laevicoxis Muesebeck. Miss., Fla.

Apanteles laevicoxis Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 505. ♀.

langei Muesebeck. Calif. Host: *Pyrausta subsequalis* (Guen.).

Apanteles langei Muesebeck, 1938. Ent. Soc. Wash., Proc. 40: 202. ♀, ♂.

laricellae Mason. N. B., N. S., Que., Ont., Wis., Idaho. Host: *Argyresthia laricella* Kearf., *Coleophora laricella* Hbn.

Apanteles laricellae Mason, 1959. Canad. Ent. 91: 45. ♀, ♂.

Biology: Eidt and Sippell, 1961. Canad. Ent. 93: 16.

laspeyresiae Viereck. Mont., Idaho, B. C., Wash., Calif. Host: *Hedulia injectiva* Heinr., *Laspeyresia miscitata* Heinr., *L. piperana* (Kearf.), *L. toreuta* Grote.

Apanteles laspeyresiae Viereck, 1913. U. S. Natl. Mus., Proc. 44: 556. ♀, ♂.

leucostigmus (Ashmead). Fla.; West Indies. Host: *Urbanus proteus* (L.).

Urogaster leucostigmus Ashmead, 1900. Roy. Ent. Soc. London, Trans. 1900: 289. ♀, ♂.

limenitidis (Riley). Mass., Conn., Ohio, Ill., Iowa, Mo., Tex. Host: *Anthocaris midea* (Hbn.), *Limenitis archippus* (Cram.).

Microgaster limenitidis Riley, 1871. Ins. Mo., Ann. Rpt. 3: 158. ♀, ♂.

liparidis (Bouche). New England(?); Palearctic Region. Liberated in New England but not established. Introduced from Europe. Host: *Lymantria dispar* (L.).

Microgaster liparidis Bouche, 1834. Naturg. Insekt., p. 152. ♀.

Microgaster nemorum Hartig, 1838 (1837). Jber. Fortsch. Forstwiss. Forstl. Naturk. 1: 252. ♀, ♂.

Glyptapanteles (Apanteles) japonicus Ashmead, 1906. U. S. Natl. Mus., Proc. 30: 193. ♀, ♂.

Glyptapanteles politus Ashmead, 1906. U. S. Natl. Mus., Proc. 30: 192. ♀, ♂. Preocc. by Riley, 1881.

Apanteles posticae Sonan, 1927. Formosa Govt. Res. Inst., Dept. Agr., Rpt. 29: 111. ♀, ♂.

Apanteles awanomeigae Watanabe, 1942. Insecta Matsumurana 16: 148. N. name for *politus* Ashmead.

Biology: Burgess and Crossman, 1929. U. S. Dept. Agr., Tech. Bul. 86, p. 95-103.

longicornis (Provancher). Que. and N. B. s. to Va., w. to Minn. and Ill.; Alaska, Oreg. Host: *Syngrapha epigaea* (Grote).

Microgaster longicornis Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 143.

"♂" = ♀.

Apanteles radiatus Ashmead, 1898. Ent. Soc. Wash., Proc. 4: 162. ♀, ♂.

Biology: Wood and Neilson, 1960. Canad. Ent. 92: 760.

lunatus (Packard). U. S. Host: *Papilio bairdii oregonius* Edw., *P. polyxenes* F., *P. p. asterius* Stoll, *P. zelicaon* Lucas.

Microgaster lunatus Packard, 1881 (1880). Boston Soc. Nat. Hist., Proc. 21: 28. ♀.

luteipennis Muesebeck. Va. Host: *Speyeria* sp.(?).

Apanteles luteipennis Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 527. ♀.

lyciae Muesebeck. Maine. Host: *Biston cognator* (Guen.).

Apanteles lyciae Muesebeck, 1926. U. S. Natl. Mus., Proc. 69 (7): 16. ♀.

mahoniae Mason. Idaho, B. C. Host: *Coryphista meadi* Pack.

Apanteles mahoniae Mason, 1975. Canad. Ent. 107: 1133. ♀, ♂.

marginiventris (Cresson). Del. s. to Fla., w. to Ind., Kans. and Tex.; Wis., Ariz., Calif.; Mexico, West Indies, So. Amer., Hawaii. Host: *Agrotis ipsilon* (Hufn.), *Anagrapha falcifera* (Kirby), *Autographa precationis* (Gn.), *Autoplusia egea* (Guen.), *Heliothis virescens* (F.), *H. zea* (Boddie), *Hymenia perspectalis* (Hbn.), *H. recurvalis* (F.), *Leucania latinscula* H.-S., *L. multisulca* Wlkr., *Peridroma saucia* (Hbn.), *Plathypena scabra* (F.), *Pseudaletia unipuncta* (Haw.), *Pseudoplusia includens* (Wlkr.), *Scotorythra caryopsis* Meyr., *Spodoptera eridania* (Cram.), *S. exigua* (Hbn.), *S. frugiperda* (Smith), *S. ornithogalli* (Guen.), *S. praefica* (Grote), *Trichoplusia ni* (Hbn.).

Microgaster marginiventris Cresson, 1865. Ent. Soc. Phila., Proc. 4: 67. ♀, ♂.

Apanteles grenadensis Ashmead, 1900. Roy. Ent. Soc. London, Trans. 1900: 278. ♀, ♂.

Apanteles laphygmae Ashmead, 1901. In Chittenden, U. S. Dept. Agr., Bur. Ent., Bul. 29, p. 36. Nomen nudum.

Apanteles (*Protapanteles*) *harnedi* Viereck, 1912. U. S. Natl. Mus., Proc. 43: 580. ♀.

Biology: Luginbill, 1928. U. S. Dept. Agr., Tech. Bul. 34, p. 68-69. — Vickery, 1929. U. S. Dept. Agr., Tech. Bul. 138, p. 25-28. — Boling and Pitre, 1970. Kans. Ent. Soc., Jour. 43: 465-470.

medicaginis Muesebeck. N. Mex., Utah, Ariz., Nev., Calif.; Mexico. Host: *Colias eurytheme* Bdl.

Apanteles medicaginis Muesebeck, 1947. Pan-Pacific Ent. 23: 21. ♀, ♂.

Biology: Michelbacher and Smith, 1943. Hilgardia 15: 369-397 (as *Apanteles flaviconchae* Riley). — Allen, 1958. Hilgardia 27: 515-541. — Allen and Smith, 1958. Hilgardia 28: 1-42. — Stern and Bowen, 1963. Ent. Soc. Amer., Ann. 56: 358-372.

megathymi Riley. N. C., S. C., Ga., La., N. Mex., Ariz., Calif.; Mexico. Host: *Agathymus stephensi* (Skin.), *Megathymus comstocki* Harb., *M. ursus ursus* Poling, *M. yuccae martini* (S. and T.), *M. y. reinthali* Freem., *M. y. yuccae* (Bdl. and Lec.).

Apanteles megathymi Riley, 1881. Acad. Sci. St. Louis, Trans. 4: 304. ♀, ♂.

melanopus Viereck. Conn.

Apanteles (*Apanteles*) *melanopus* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 190, 198.

melanoscelus (Ratzeburg). New England, east. Canada, B. C., Wash., Oreg.; Europe, N. Africa. Introduced from Europe. Host: *Lymantria dispar* (L.), *Stilpnotia salicis* (L.).

Microgaster melanoscelus Ratzeburg, 1844. Ichn. d. Forstins. 1: 74. ♂.

Microgaster solitarius Ratzeburg, 1844. Ichn. d. Forstins. 1: 73. ♀, ♂.

Taxonomy: Nixon, 1974. Bul. Ent. Res. 64: 469 (synonymy).

Biology: Crossman, 1922. U. S. Dept. Agr., Bul. 1028, p. 1-25 (*melanoscelus*). — Muesebeck and Dohanian, 1927. U. S. Dept. Agr., Bul. 1487, p. 1-34 (*melanoscelus*). — Parker, 1935. U. S. Dept. Agr., Tech. Bul. 477, p. 1-17 (*solitarius*). — Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, p. 79-80. — Dowden, 1962. U. S. Dept. Agr., Agr. Handb. 226, p. 48-49. — Weseloh, 1973. Ent. Soc. Amer., Ann. 66: 854-855 (*melanoscelus*). — Weseloh, 1973. Jour. Ins. Physiol. 19: 2025-2033. — Van Sickle and Weseloh, 1974. N. Y. Ent. Soc., Jour. 82: 2-5. — Weseloh, 1974. Ent. Soc. Amer., Ann. 67: 583-587 (host recognition). — Weseloh and Anderson, 1975. Environ. Ent. 4: 33-36. — Weseloh, 1976. Environ. Ent. 5: 743-746, 1128-1132.

miantonomoi Viereck. Conn., Pa., Mich.

Apanteles (*Apanteles*) *miantonomoi* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 198.

Apanteles (*Apanteles*) *pequodorum* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 198.

- militaris** (Walsh). No. Amer. Host: *Epiglaea apiata* (Grote), *Euxoa auxiliaris* (Grote), *Feltia ducens* Wlkr., *Heliothis zea* (Boddie), *Leucania latiuscula* H.-S., *L. phragmatidicola* Guen., *Peridroma saucia* (Hbn.), *Pseudaletia unipuncta* (Haw.), *Spodoptera erigua* (Hbn.), *S. frugiperda* (Smith), *S. ornithogalli* (Guen.).
Microgaster militaris Walsh, 1861. Ill. State Agr. Soc., Trans. 4: 369. ♀.
- Biology: Guppy, 1967. Canad. Ent. 99: 100. — Calkins and Sutter, 1976. Environ. Ent. 5: 147-150.
- milleri** Mason. N. B., Que., Vt., Ont., Mont., B. C., N. W. T. Host: *Dioryctria reniculella* (Grote), *Parapandemis borealis* Freem.
Apanteles milleri Mason, 1974. Canad. Ent. 106: 1093. ♀, ♂.
- mimoristae** Muesebeck. Fla., Tex. Host: *Hymenia perspectalis* (Hbn.), *Mimorista flavidissimalis* (Grote), *Otycella junctolineella* (Hulst).
Apanteles mimoristae Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 19. ♀, ♂.
- monticola** Ashmead. Colo., N. Mex., Idaho, Calif.
Apanteles monticola Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 17. ♂.
- morrisi** Mason. N. B., Que., Ont., Wis., Man. Host: *Choristoneura fumiferana* (Clem.), *C. pinus* Freem.
Apanteles morrisi Mason, 1974. Canad. Ent. 106: 1092. ♀, ♂.
- murtfeldtae** Ashmead. Que. s. to N. C.; Ohio, Mo. Host: *Ennomos subsignarius* (Hbn.), *Phigalia titea* (Cram.).
Apanteles murtfeldtae Ashmead, 1897. Ent. Soc. Wash., Proc. 4: 159. ♀, ♂.
- nemoriae** Ashmead. N. S. s. to Tenn., w. to Sask. Host: *Alsophila pomataria* (Harr.), *Chlorochlamys chloroleucaria* (Guen.), *Erannis tiliaria* (Harr.), *Eupithecia filmata* Pears., *E. gibsonata* Tay., *E. miserulata* Grote, *E. palpata* Pack., *Haematopius grataria* (F.), *Haploa lecontei* (G.-M.), *Operophtera brumata* (L.), *Pleuroprucha insulsaria* (Guen.), *Semiothisa granitata* (Gn.).
Apanteles nemoriae Ashmead, 1897. Ent. Soc. Wash., Proc. 4: 160. ♀, ♂.
Apanteles (Protapanteles) winkleyi Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 192. ♀, ♂.
- neomexicanus** Muesebeck. P. E. I. w. to B. C. and Alaska; Mich., N. Dak. s. to N. Mex., w. to Wash. and Calif.
Apanteles neomexicanus Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 529. ♀.
Apanteles caudatus Muesebeck, 1922. U. S. Natl. Mus., Proc. 6 (15): 16. ♀, ♂.
- nephopteris** (Packard). N. Y., Fla., Ont., Mich., Ind., Ill., Iowa, Colo., Nev., Oreg., Calif. Host: *Anagasta kuehniella* (Zell.), *Vitula edmandsae edmandsae* (Pack.), *V. e. serratilineella* Rag.
Microgaster nephopteris Packard, 1864. Proc. Essex Inst. 4: 122. ♂.
Apanteles ephestiae Baker, 1895. Ent. News 6: 201. ♀, ♂.
- niger** Muesebeck. N. Y., D. C., Va., Mich., Minn., S. Dak., Kans., Idaho.
Apanteles niger Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 532. ♀, ♂.
- nigriceps** (Ashmead.). N. C.; West Indies.
Urogaster nigriceps Ashmead, 1900. Roy. Ent. Soc. London, Trans. 1900: 284. ♀.
- nigricornis** Muesebeck. Calif.; Mexico. Host: *Ctenucha brunnea* Stretch.
Apanteles nigricornis Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 538. ♀, ♂.
- nigrovarius** Muesebeck. Pa., Ga., Fla.
Apanteles nigrovarius Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 523. ♀.
- ninigretorum** Viereck. Conn.
Apanteles (Apanteles) ninigretorum Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 200.
- nitens** Muesebeck. Wyo., Colo., Oreg., Calif. Host: *Agrotis aeneipennis* Grote, *Pseudaletia unipuncta* (Haw.).
Apanteles nitens Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 556. ♀, ♂.
- noctuidiphagus** Muesebeck. Conn.
Apanteles noctuidiphagus Muesebeck, 1926. U. S. Natl. Mus., Proc. 69 (7): 7. ♀, ♂.

obscuricornis Viereck. Conn.

Apanteles (Protapanteles) obscuricornis Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 192. ♀.

oidaematophori Muesebeck. Wis., Idaho. Host: *Oidaematophorus lacteodactylus* form *kellicottii* (Fish).

Apanteles oideaematophori(!) Muesebeck, 1929. Ent. Soc. Wash., Proc. 31: 119. ♀.

olenidis Muesebeck. B. C. Host: *Dasychira vagans* (B. and McD.).

Apanteles olenidis Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 18. ♀, ♂.

ornigis Weed. N. S. and Que. s. to Va., w. to N. Dak. and Ark.; Utah, Oreg. Host: *Bucculatrix ainsliella* Murtl., *Caloptilia burgessiella* (Zell.), *Lithocolletis blancardella* (F.), *L. crataegella* Clem., *L. malimalifoliella* Braun, *L. mariaella* Chamb., *L. propinquella* Braun, *L. robiniella* Clem., *Parornix geminatella* (Pack.), *Tischeria malifoliella* Clem.

Apanteles ornigis Weed, 1887. Ill. State Lab. Nat. Hist., Bul. 3: 6. ♀, ♂.

Protapanteles tortricis Ashmead, 1898 (1897). Ent. Soc. Wash., Proc. 4: 163. ♀, ♂.

Apanteles (Apanteles) braunae Viereck, 1912. U. S. Natl. Mus., Proc. 42: 614. ♂.

Apanteles (Apanteles) lithocolletidis Viereck, 1912. U. S. Natl. Mus., Proc. 42: 615. ♂.

orobenae Forbes. D. C. s. to Fla., w. to Ariz. and Calif.; Ind., Ill., Conn.(?). Host: *Evergester rimosalis* (Guen.).

Apanteles orobenae Forbes, 1883 (1882). Noxious Ins. Ill., Rpt. 12: 104. ♀, ♂.

paleacritae Riley. Canada; N. H. s. to Ga., w. to Mich. and Kans. Host: *Alsophila pometaria* (Harr.), *Bomolocha deceptalis* (Wlkr.), *Cyclophora pendulinaria* (Guen.), *Ectropis crepuscularia* (D. and S.), *Enypia packardata* Tay., *E. venata* (Grote), *Erannis tiliaria* (Harr.), *Lambdaia fuscicollis* (Gn.), *Nepytia canosaria* (Wlkr.), *Nyctobia anguilinea* (G. and R.), *Operophtera brumata* (L.), *Oporinia autumnata henshawi* Swett, *Paleacrita vernata* (Peck), *Phigalia titea* (Cram.), *Semiothisa granitata* (Gn.), *S. sexmaculata* (Pack.), *Zale* sp.

Apanteles paleacritae Riley, 1881. Acad. Sci. St. Louis, Trans. 4: 313. ♀, ♂.

Protapanteles ephyrae Ashmead, 1898 (1897). Ent. Soc. Wash., Proc. 4: 163. ♂.

papaipemae Muesebeck. Mass., N. Y., Ohio, Iowa, Kans. Host: *Bellura obliqua* (Wlkr.), *Papaipema maritima* Bird, *P. nebris* (Guen.), *P. stenoscelsis* (Dyar.).

Apanteles papaipemae Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 526. ♀, ♂.

paralechiaae Muesebeck. N. B. s. to N. J., w. to Ont. and Wis.; Tenn., Utah, Calif. Host: *Argyresthia freyella* Wlsm., *A. thuella* (Pack.), *Coleotechnites thujaeella* Kearf., *Exotelia pinifoliella* (Chamb.).

Apanteles paralechiaae Muesebeck, 1931. U. S. Natl. Mus., Proc. 79 (16): 2. ♀, ♂.

paranthrenidis Muesebeck. N. Y., Pa., Ohio, D. C., Fla., Miss., Tex., Utah, Calif.; Mexico. Host: *Paranthrene asilipennis* (Bdvl.), *P. dollii* (Neum.), *P. robiniae* (Hy. Edw.), *Prionoxystus* sp.

Apanteles paranthrenidis Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 506. ♀, ♂.

parastichtidis Muesebeck. Canada; Maine, Tenn., Mich. Host: *Choristoneura conflictana* (Wlkr.)?, *Enargia decolor* (Wlkr.), *Hydriomena divisaria* (Wlkr.), *H. renunciata* (Wlkr.), *Sumra bicolorago* (Guen.).

Apanteles parastichtidis Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 541. ♀.

petrovae Walley. Newfoundland, N. B., Que., S. C., Ont., Wis., Minn., N. Dak., Alta., Mont., B. C., Calif. Host: *Barbara colfaxiana* (Kearf.), *Choristoneura fumiferana* (Clem.), *C. pinus* Freem., *Dioryctria auranticella* (Grote), *D. reniculella* (Grote), *Petrova albicapitana* (Busck), *P. pallipennis* McD., *Rhyacionia frustrana* (Comst.), *Zeiraphera canadensis* M. and F.

Apanteles petrovae Walley, 1937. Canad. Ent. 69: 189. ♀.

Taxonomy: Mason, 1974. Canad. Ent. 106: 1101-1102.

phigaliae Muesebeck. N. B., Mass., Ont. Host: *Phigalia titea* Cram.

Apanteles phigaliae Muesebeck, 1919. Canad. Ent. 51: 113. ♀, ♂.

phlyctaeniae Muesebeck. Ohio, Ill. Host: *Phlyctaenia coronata tertialis* (Guen.)(?).

Apanteles phlyctaeniae Muesebeck, 1929. Ent. Soc. Wash., Proc. 31: 118. ♀, ♂.

- phobetri** Rohwer. Newfoundland w. to Alta.; Mass., N. J., Md., Va., N. C., Ky., Ind., Ill., 1'.
Dak., Kans. Host: *Acronicta americana* Harr., *Apanteles* sp., *Halisidota caryae* (Farr.),
H. harrisii Walsh, *H. tessellaris* (Smith), *Panthea acronyctoides* (Wlkr.), *Phobetron*
pithecium (A. and S.).
Apanteles (*Protapanteles*) **phobetri** Rohwer, 1915. U. S. Natl. Mus., Proc. 49: 228. ♀.
- pholisora** Riley. Md., D. C., S. C., Ill., Mo., Kans., Tex. Host: *Pholisora catullus* (F.),
Staphylus mazans hayhursti (Edw.).
Apanteles pholisoriae Riley, 1889. In Scudder, *Butterflies East. U. S.*, p. 1909. ♀.
- phthorimaeae** Muesebeck. La. Host: *Keiferia inconspicua* (Murtf.).
Apanteles phthorimaeae Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 509. ♀.
- plathypenae** Muesebeck. Ont. s. to N. Y. and Ohio, w. to B. C. and Wash. Host: *Anagrapha*
falcifera (Kirby), *Autographa californica* (Speyer), *A. precationis* (Gn.), *Plathypena*
scabra (F.), *Rachiplusia ou* (Gn.), *Scotogramma trifolii* (Rott.).
Apanteles plathypenae Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 546. ♀, ♂.
- plesius** Viereck. N. J., Mich., Wis. Host: *Sparganothis pectinata* (Rob.).
Apanteles (*Apanteles*) **plesius** Viereck, 1912. U. S. Natl. Mus., Proc. 42: 615. ♀.
- podunkorum** Viereck. Conn., Va., W. Va., Ohio. Host: *Ostrinia obumbratalis* (Led.), *Pyrausta*
futilalis (Led.).
Apanteles (*Stenopleura*) **podunkorum** Viereck, 1912. U. S. Natl. Mus., Proc. 43: 583. ♀.
- politus** Riley. Va., Fla., Ill., Mo. Host: *Scolecocampa liburna* (Geyer).
Apanteles politus Riley, 1881. Acad. Sci. St. Louis, Trans. 4: 307. ♀, ♂.
- polychrosidis** Viereck. N. B. and Que. s. to Fla., w. to Ont., S. Dak., and Kans.; Wash., Oreg.,
Alaska. Host: *Anacampsis innocuella* (Zell.), *Archips argyrosipilus* (Wlkr.), *A.*
cerasiworanus (Fitch), *A. rosanus* (L.), *Argyrotaenia citrana* (Fern.), *A. juglandana*
(Fern.), *Bucculatrix pomifoliella* Clem., *Caloptilia superbifrontella* Clem.,
Choristoneura conflictana (Wlkr.), *C. fumiferana* (Clem.), *C. pinus* Freem., *C.*
rosaceana (Harr.), *Grapholitha molesta* (Busck), *Nephoteryx celtidella* (Hulst), *N.*
subcaesiella (Clem.), *Paralobesia liriiodendrana* Kearf., *P. viteana* (Clem.).
Apanteles (*Apanteles*) **polychrosidis** Viereck, 1912. U. S. Natl. Mus., Proc. 42: 615. ♀, ♂.
- porthetriae** Muesebeck. N. H. (?), Mass. (?); Palearctic Region. Liberated in N. H. and Mass.
but not established. Introduced from Europe. Host: *Lymantria dispar* (L.).
Apanteles porthetriae Muesebeck, 1928. Ent. Soc. Wash., Proc. 30: 8. ♀, ♂.
- Biology: Raffa, 1977. Environ. Ent. 6: 57-59 (alternative hosts).
- praesens** Muesebeck. Calif.; Hawaii (introduced). Host: *Anacamptodes fragilaria* (Grossb.).
Apanteles praesens Muesebeck, 1947. Pan-Pacific Ent. 23: 23. ♀, ♂.
- pseudoglossae** Muesebeck. Md., Mich., Minn. Host: *Epizeuxis lubricalis* Geyer.
Apanteles pseudoglossae Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 512. ♀, ♂.
- pterophori** Muesebeck. Mass. Host: *Oidaematophorus homodactylus* (Wlkr.).
Apanteles pterophori Muesebeck, 1926. U. S. Natl. Mus., Proc. 69 (7): 6. ♀, ♂.
- pyralidis** Muesebeck. Md., D. C., Va., N. C., Ohio, Tenn., Wis., Iowa, Mo., Ark., S. Dak. Host:
Loxostege rantis (Guen.), *Nomophila nearctica* Munroe, *Pyrausta futilalis* (Led.).
Apanteles pyralidis Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 551. ♀, ♂.
- pyraustae** Viereck. Conn., Va., Ont., Mo. Host: *Atteva punctella* (Cram.), *Pyrausta futilalis*
(Led.).
Apanteles (*Protapanteles*) **pyraustae** Viereck, 1912. U. S. Natl. Mus., Proc. 42: 626. ♀, ♂.
- pyrophilae** Muesebeck. Mass., R. I., Conn., Ont. Host: *Amphipyra pyramidoides* Gn.
Apanteles pyrophilae Muesebeck, 1926. U. S. Natl. Mus., Proc. 69 (7): 11. ♀, ♂.
- renaulti** Mason. N. B., N. S., Que., Ont., Wis. Host: *Coleotechnites gibsonella* (Kearf.), *C.*
piceaella (Kearf.).
Apanteles renaulti Mason, 1974. Canad. Ent. 106: 1100. ♀, ♂.
- robiniae** (Fitch). N. Y. Host: *Sinoc robinella* (Fitch).
Microgaster robiniae Fitch, 1859 (1858). N. Y. State Agr. Soc., Trans. 18: 836. ♀, ♂.

- rohweri** Muesebeck. N. B. s. to Va., w. to Ont. and Minn. Host: *Acrobasis rubrifasciella* Pack., *Argyresthia* sp., *Lithocolletis tremuloidiella* Braun, *Neurobatha strigifinitella* (Clem.).
Apanteles (*Pseudapanteles*) *nigripes* Rohwer, 1914 (1913). Ent. Soc. Wash., Proc. 15: 187.
 "♂" = ♀. Preocc. by Ratzeburg, 1844.
Apanteles rohweri Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 550. N. name for *nigripes* Rohwer.
- rubecula** Marshall. Mo., B. C., Calif.; Europe. Host: *Pieris protodice* Bdl. and Lec., *P. rapae* (L.).
Apanteles rubecula Marshall, 1885. Roy. Ent. Soc. London, Trans. 1885: 175. ♀.
- Biology: Wilkinson, 1966. Jour. Econ. Ent. 59: 1012-1013. —Parker, 1971. Jour. Econ. Ent. 64: 721-735. —Parker, 1972. Environ. Ent. 1: 153-156.
- rufocoxalis** Riley. N. S. s. to Fla.; Mo., Tenn., La., Tex. Host: *Leucania latiuscula* H.-S., *Nephelodes emmedonia* form *violans* Guen., *Pseudaletia unipuncta* (Haw.).
Apanteles congregatus var. *rufocoxalis* Riley, 1881. Acad. Sci. St. Louis, Trans. 4: 310.
- salalicus** Mason. Colo., Oreg., Calif. Host: *Caloptilia rhoifoliella* (Chamb.), *Cnephasia longana* (Haw.), *Lithocolletis gaultheriella* Wlsm.
Apanteles salalicus Mason, 1959. Canad. Ent. 91: 42. ♀.
- salicifoliellae** Mason. Ont. Host: *Lithocolletis salicifoliella* Chamb.
Apanteles salicifoliellae Mason, 1959. Canad. Ent. 91: 43. ♀, ♂.
- sarrothripae** Weed. Maine s. to Va., w. to Ont. and Mo. Host: *Ichthyura albospigma* (Fitch), *I. inclusa* Hbn., *Nycteola frigidana* (Wlkr.).
Apanteles sarrothripae Weed, 1887. Ill. State Lab. Nat. Hist., Bul. 3: 6. ♀, ♂.
- schaffneri** Muesebeck. Pa., N. J., Del., Va., Tex. Host: *Euclea delphinii* Bdl., *Parasa* sp., *Prolimacodes badia* (Hbn.).
Apanteles schaffneri Muesebeck, 1931. U. S. Natl. Mus., Proc. 79 (16): 4. ♀.
- schizurae** Ashmead. Canada; N. H. s. to Fla., w. to Wis., Mo., and Miss.; Calif. Host: *Heterocampa guttivitta* (Wlkr.), *Schizura concinna* (Smith), *S. unicornis* (Smith).
Apanteles schizurae Ashmead, 1898. Ent. Soc. Wash., Proc. 4: 162. ♀, ♂.
- scitulus** Riley. N. H. s. to Fla., w. to Ont., Nebr., and Tex. Host: *Acronicta brumosa* Guen., *A. oblineata* (Smith), *Anomogyna elimata* (Gn.), *Dasychira basiflava* (Pack.), *D. plagiata* (Wlkr.), *Diacrisia virginica* (F.), *Pseudoplusia includens* (Wlkr.), *Simyra henrici* (Grote).
Apanteles congregatus var. *scitulus* Riley, 1881. Acad. Sci. St. Louis, Trans. 4: 310.
Apanteles emarginatus Riley, 1889. In Scudder, Butterflies East. U. S., p. 1906. ♀, ♂.
 Preocc. by Nees, 1834.
Apanteles parorgyiae Ashmead, 1898. Ent. Soc. Wash., Proc. 4: 161. ♀, ♂.
Cryptapanteles rileyanus Viereck, 1910 (1909). Ent. Soc. Wash., Proc. 11: 210. N. name for *emarginatus* Riley.
- scutellaris** Muesebeck. Fla., Tex., Ariz., Calif.; Hawaii, Bulgaria. Host: *Keiferia lycopersicella* (Busck), *Phthorimaea operculella* (Zell.).
Apanteles scutellaris Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 533. ♀, ♂.
- Biology: Graf, 1917. U. S. Dept. Agr., Bul. 427, p. 43 (as *Apanteles* sp.; this is *scutellaris* rather than *dignus* as listed in first supplement of original catalog).
- sesiae** Viereck. N. J., Va., D. C., Fla., Ind., Ark., Kans., Tex. Host: *Synanthedon scitula* (Harr.).
Apanteles (*Pseudapanteles*) *sesiae* Viereck, 1912. U. S. Natl. Mus., Proc. 42: 146. ♀, ♂.
- smerinthi** Riley. Maine, N. H., Mass., N. J., D. C., Ont., Ind., Mo., Tex., Calif. Host: *Ipimorpha pleonectusa* Grote, *Paonias excaecata* (Smith), *Smerinthus cerisyi* Kirby, *S. jamaicensis* (Drury).
Apanteles smerinthi Riley, 1881. Acad. Sci. St. Louis, Trans. 4: 311. ♀, ♂.
- solenobiae** Walley. Que., Pa. Host: *Solenobia walshella* Clem.
Apanteles solenobiae Walley, 1935. Canad. Ent. 67: 59. ♀.
- sorghiellae** Muesebeck. Mo., Ark., Tex. Host: *Celama sorghiella* (Riley).
Apanteles sorghiellae Muesebeck, 1933. Ent. Soc. Wash., Proc. 35: 195. ♀, ♂.
- stagmatophorae** Gahan. Md. Host: *Periploca gleditschiaeella* (Chamb.).
Apanteles stagmatophorae Gahan, 1919. U. S. Natl. Mus., Proc. 55: 120. ♀, ♂.

- starki** Mason. Alta., Mont., Utah, Idaho, Nev., B. C. Host: *Coleotechnites milleri* (Busck), *C. starki* (Freem.), *Eucosma recissoriana* Heinr.
Apanteles starki Mason, 1960. Canad. Ent. 92: 140. ♀, ♂.
- subandinus** Blanchard. Calif.; Argentina. Host: *Phthorimaea operculella* (Zell.).
Apanteles subandinus Blanchard, 1947. Arthropoda 1: 20. ♀.
- teleae** Muesebeck. Conn., Pa., Md. Host: *Antheraea polyphemus* (Cram.), *Citheronia regalis* (F.).
Apanteles teleae Muesebeck, 1926. U. S. Natl. Mus., Proc. 67 (7): 12. ♀.
- terminalis** Gahan. N. Y. s. to Fla., w. to Iowa, Colo., and Tex. Host: *Crambus* sp., *C. mutabilis* Clem.
Apanteles (Pseudapanteles) terminalis Gahan, 1912. Ent. Soc. Wash., Proc. 14: 2. ♀, ♂.
- theclae** Riley. D. C. s. to Ga., w. to Colo. and Calif.; Idaho; Mexico. Host: *Everes comyntas* (Godt.), *Plebejus icarioides* (Bdv.), *Strymon melinus* (Hbn.), *Thecla* sp.
Apanteles theclae Riley, 1881. Acad. Sci. St. Louis, Trans. 4: 308. ♀, ♂.
- thompsoni** Lyle. East. Canada, U. S. (?); Palearctic Region. Liberated in Mass., N. Y., Ohio, Mich., and Ont. but not established. Introduced from Europe. Host: *Ostrinia nubilalis* (Hbn.).
Apanteles thompsoni Lyle, 1927. Bul. Ent. Res. 17: 415. ♀.
- thujae** Muesebeck. Maine, Ont. Host: *Argyresthia thuella* (Pack.), *Coleotechnites thujaeella* Kearf.
Apanteles thujae Muesebeck, 1935. Wash. Acad. Sci., Jour. 25: 281. ♀, ♂.
- thurberiae** Muesebeck. Tex., Ariz.; Trinidad, Colombia. Host: *Thurberiphaga diffusa* (Barnes).
Apanteles thurberiae Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 507. ♀, ♂.
- tischeriae** Viereck. Conn., Del., D. C., Ohio, Wis., Mo., Kans. Host: *Argyrotaenia velutinana* (Wlkr.), *Parornix geminatella* (Pack.), *Tischeria malifoliella* (Clem.).
Apanteles (Apanteles) tischeriae Viereck, 1912. U. S. Natl. Mus., Proc. 42: 140. ♀, ♂.
- tmetocerae** Muesebeck. N. S. Host: *Spilonota ocellana* (D. and S.).
Apanteles tmetocerae Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 560. ♀, ♂.
- unicolor** (Curtis). "Arctic regions of No. Amer."
Microgaster unicolor Curtis, 1835. Descr. Insects J. C. Ross 2nd Voyage Northwest Passage, App. p. LXII. ♂.
- victoriae** Muesebeck. B. C.
Apanteles victoriae Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 531. ♀.
- websteri** Muesebeck. N. B., Ohio (?), N. C., Ark. Host: *Protoboarmia porcelaria* (Gn.).
Apanteles websteri Muesebeck, 1921. U. S. Natl. Mus., Proc. 58: 539. ♀, ♂.
- xylinus** (Say). Que. s. to Fla., w. to Alta. and N. Mex. Host: *Amathes c-nigrum* (L.), *Peridroma saucia* (Hbn.).
Microgaster xyлина Say, 1836. Boston Jour. Nat. Hist. 1: 262. ♀.
Apanteles (Protapanteles) cushmani Viereck, 1912. U. S. Natl. Mus., Proc. 42: 144. ♂.
Apanteles (Protapanteles) oxyacanthoidis Viereck, 1912. U. S. Natl. Mus., Proc. 43: 581. ♀.
Apanteles (Protapanteles) tanificus Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 196.
- yakutatensis** Ashmead. Que., Utah, Idaho, Wash., Oreg., Calif., Alaska. Host: *Amathes c-nigrum* (L.), *Autographa californica* (Speyer), *Autoplusia egea* (Guen.).
Apanteles yakutatensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 249. ♀.
Apanteles (Protapanteles) hyslopi Viereck, 1910. U. S. Natl. Mus., Proc. 38: 379. ♀, ♂.
- zizaniae** Muesebeck. Del., D. C. Host: *Diatraea* sp.
Apanteles zizaniae Muesebeck, 1957. Ent. News 68: 22. ♀, ♂.

NOMINA NUDA IN APANTELES FOERSTER

- Apanteles alamedensis* Ashmead, 1902. In Chittenden, Bur. Ent., U. S. Dept. Agr., Bul. 33, p. 58.
Apanteles algonquinus Ashmead, 1905. In Nason, Ent. News 16: 295.
Urogaster carinaria Ashmead, 1905. In Nason, Ent. News 16: 296.
Apanteles catalpae Riley, 1906. In Burgess, Bur. Ent., U. S. Dept. Agr., Bul. 60, p. 73.
Apanteles columbianus Ashmead, 1905. In Nason, Ent. News 16: 296.

- Apanteles cramboideus* Ashmead, 1905. *In* Nason, Ent. News 16: 296.
Apanteles eupitheciae Ashmead, 1905. *In* Nason, Ent. News 16: 296.
Apanteles eupitheciae Ashmead, 1900. *In* Graenicher, Wis. Nat. Hist. Soc., Bul. 1: 80.
Apanteles nasoni Ashmead, 1905. *In* Nason, Ent. News 16: 296.
Apanteles notodontae Ashmead, 1897. *In* Slosson, Ent. News 8: 237.
Apanteles pergandei Ashmead, 1905. *In* Grossbeck, Ent. News 16: 133.
Apanteles rapae Ashmead, 1931. *In* Clausen, U. S. Dept. Agr., Cir. 168, p. 73.
Apanteles rileyanus Ashmead, 1906. *In* Sanderson, Bur. Ent., U. S. Dept. Agr., Bul. 59, p. 35.

UNPLACED TAXON OF APANTELES FOERSTER

- Microgaster oleracea* Taylor, 1860. American Agriculturist 19: 301. ♀. Host: *Pontia oleracea* Harris (= *Pieris*). The illustration which accompanies the description is not adequate in identifying this species. However, certain statements in the description and the fact that the author compares the species with *glomeratus* indicates that this species is probably the same as *Apanteles glomeratus* (L.), a parasite of *Pieris oleracea* Harr.

Genus DIRRHOPHE Foerster

Dirrhope Foerster, 1851. Naturh. Ver. Rheinlande, Verh. 8: 79.

Type-species: *Dirrhope rufa* Foerster. Monotypic.

Dirrhopa Schulz, 1906. Spolia Hym., p. 138. Emend.

The exact relationships of this genus are not clearly understood and it has been placed with the Microgastrinae by Muesebeck (1936) and Tobias (1967), and with the Adeliinae by Telenga (1955) and Capek (1970).

Taxonomy: Muesebeck, 1936 (1935). Ent. Soc. Wash., Proc. 37: 173-174. —Telenga, 1955.

Fauna U. S. S. R., v. 5, n. 4, p. 14. —Tobias, 1967. Ent. Obozr. 46: 657. —Capek, 1969. Ent. Soc. Wash., Proc. 71: 309. —Capek, 1970. Canad. Ent. 102: 870.

americana Muesebeck. Va., Mich., Tex. Host: *Ectoedemia phleophaga* Busck.

Dirrhope americana Muesebeck, 1936 (1935). Ent. Soc. Wash., Proc. 37: 174. ♀, ♂.

Genus HYPOMICROGASTER Ashmead

Hypomicrogaster Ashmead, 1898 (1897). Ent. Soc. Wash., Proc. 4: 166. No included species.

Type-species: *Microgaster zonaria* Say. Desig. by Ashmead, 1900.

Revision: Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 20-26 (No. Amer. spp. in *Microgaster*). —Nixon, 1965. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 2, p. 208-229 (World spp.).

Taxonomy: Shenefelt, 1973. Hym. Cat., part 9, p. 687-692 (cat. World spp.).

- ecdytolophae* (Muesebeck). N. S. s. to Fla., w. to Ont., Nebr., and Tex.; Cent. Amer., West Indies. Host: *Arogalea cristifasciella* (Chamb.), *Caloptilia elongella* (L.), *Coleotechnites piceaella* (Kearf.), *Ecdytolopha insiticiaria* Zell., *Grapholitha molesta* (Busck), *Laspeyresia caryana* (Fitch), *L. pomonella* (L.), *Nephotycteryx uvinella* (Rag.), *Ostrinia obumbratalis* (Led.), *Psorosina hammondi* (Riley), *Walshia amorphella* Clem.
Microgaster ecdytolophae Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 24. ♀, ♂.

Taxonomy: Marsh, 1974. Ent. Soc. Wash., Proc. 76: 285.

Biology: Brandhorst, 1962. Ent. Soc. Amer., Ann. 55: 477. —Allen, 1962. U. S. Dept. Agr., Tech. Bul. 1265, p. 36.

- schizurae* (Muesebeck), n. comb. Maine, Mass., Pa., N. J., D. C., Mich., Ohio, Minn., Ark., N. Dak., Kans., B. C. Host: *Heterocampa manteo* (Dblidy.), *Schizura concinna* (Smith), *S. leptinoides* (Grote), *S. unicornis* (Smith).

Microgaster schizurae Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 30. ♀, ♂.

- tiro* (Reinhard). Newfoundland, P. E. I.; Europe. Host: *Cnephasia virguareana* (Treit.).

Microgaster tiro Reinhard, 1880. Deut. Ent. Ztschr. 24: 357. ♀, ♂.

zonaria (Say). Mass. s. to Va., w. to Wis. and Colo.; Fla., La., Canada. Host: *Coleotechnites piceaella* (Kearf.), *C. thujaella* Kearf., *Laspeyresia pomonella* (L.), *Neoeastria caduca* (Grote), *Plathypena scabra* (F.).

Microgaster zonaria Say, 1836. Boston Jour. Nat. Hist. 1: 263. ♀.

Microgaster cinctus Provancher, 1881. Nat. Canad. 12: 196. ♀.

Protapanteles recurvariae Ashmead, 1903. N. Y. Ent. Soc., Jour. 11: 144. ♀.

Genus MICROGASTER Latreille

Microgaster Latreille, 1804. Nouv. Dict. Hist. Nat., v. 24, p. 175.

Type-species: *Ichneumon deprimator* Fabricius. Desig. by Latreille, 1810.

Liganira Walker, 1860. Ann. and Mag. Nat. Hist. (3) 5: 308.

Type-species: *Microgaster detractus* Walker. Monotypic.

Microgaster subg. *Hygroplitis* Thomson, 1895. Opusc. Ent., fasc. 20, p. 2238, 2244.

Type-species: *Microgaster russata* Haliday. Desig. by Viereck, 1914.

Diolcogaster Ashmead, 1900. In Smith, Ins. of N. J., p. 594.

Type-species: *Microgaster brevicauda* Provancher. Monotypic.

Zadiolcogaster Viereck, 1913. U. S. Natl. Mus., Proc. 46: 366.

Type-species: *Zadiolcogaster anomus* Viereck. Orig. desig.

Microgaster subg. *Lissogaster* Bengtsson, 1926. Ent. Tidskr. 47: 64.

Type-species: *Microgaster politus* Marshall. Desig. by Muesebeck and Walkley, 1951.

Revision: Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 20-43 (No. Amer. spp.). —Nixon, 1968. Brit. Mus. (Nat. Hist.) Ent., Bul. 22: 33-72 (some World spp.).

Taxonomy: Nixon, 1965. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 2, p. 7. —Shenefelt, 1973.

Hym. Cat., part 9, p. 692-737 (cat. World spp.).

brevicauda Provancher. Que.

Microgaster brevicaudus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 140. ♀.

brittoni Viereck. Mass., Conn., N. Y., Ga., Ohio, Ont., Mich., Wis., Minn., Iowa.

Microgaster (Microgaster) brittoni Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 201.

canadensis Muesebeck. N. S. w. to B. C.; Maine, Mass., N. Y., Mich., Colo., Oreg., Calif. Host:

Achatodes zeae (Harr.), *Acleris variata* (Fern.), *Agonopterix posticella* (Wlsm.), *Anacampsis innocuella* (Zell.), *Ancylys comptana fragariae* (W. and R.), *Archips argyrosipilus* (Wlkr.), *A. rosanus* (L.), *Choristoneura fumiferana* (Clem.), *Croesia albicomana* (Clem.), *Epinotia sollicitana* (Wlkr.), *Sciaphila duplex* (Wlsm.), *Sparganothis diluticostana* (Wlsm.), *Stilpnobia salicis* (L.).

Microgaster canadensis Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 38. ♀, ♂.

congregatiformis Viereck. Mass., Conn., N. Y., N. J., Ont., Mich., Minn., Mont. Host:

Endothenia hebesana (Wlkr.).

Microgaster (Microgaster) congregatiformis Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 202.

diaphaniae Muesebeck. Fla.; Cent. and So. Amer. Host: *Diaphania indica* (Saund.).

Microgaster diaphaniae Muesebeck, 1958. U. S. Natl. Mus., Proc. 107: 414. ♀, ♂.

epagoges Gahan. Vt. s. to S. C., w. to Ont. and Mo.; Colo., B. C., Oreg. Host: *Acleris chalybeana* (Fern.), *Anacampsis fragariella* Buseck, *A. rhoifrutella* (Clem.), *Archips argyrosipilus* (Wlkr.), *A. griseus* (Rob.), *A. rosanus* (L.), *A. semiferanus* (Wlkr.), *Argyrotaenia velutinana* (Wlkr.), *Choristoneura obsoletana* (Wlkr.), *Platynota flavedana* Clem., *Ostrinia penitalis* (Grote), *Rhyacionia frustrana* (Comst.), *Sparganothis pettitana* (Rob.), *S. putmanana* Freeman, *S. sulphurana* (F.), *S. tristriata* Kearf.

Microgaster epagoges Gahan, 1917. U. S. Natl. Mus., Proc. 53: 197. ♀, ♂.

Biology: Schaffner, 1949. U. S. Dept. Agr., Misc. Pub. 767, p. 62.

femoralamericanus Shenefelt. Idaho, Wash., Oreg., Calif.

Microgaster femoralis Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 39. ♀, ♂. Preocc. by Bouche, 1834.

- Microgaster femoralamericanus* Shenefelt, 1973. Hym. Cat., part 9, p. 706. N. name for *femoralis* Muesebeck.
- gelechiae* Riley. Que. s. to Va., w. to Ont., N. Dak., and Mo.; La. Host: *Gnorimoschema gallaeasterella* (Kell.), *G. gallaesolidaginis* (Riley).
- Microgaster gelechiae* Riley, 1869. Ins. Mo., Ann. Rpt. 1: 178. ♀, ♂.
- Biology: Judd, 1962. Amer. Micros. Soc., Trans. 81: 204.
- gelechiae trichotaphae* Walley. Ont. Host: *Trichotaphe levisella* Fyles.
- Microgaster gelechiae* var. *trichotaphae* Walley, 1932. Canad. Ent. 64: 186. ♂.
- harnedi* Muesebeck. Mass., Va., S. C., Mich., Ohio, Ind., Miss., Mo., Wash. Host: *Diatraea* sp., *Macrobotys pertextalis* (Led.), *Ostrinia obumbratalis* (Led.), *Pachyzancla thestealis* (Wlkr.).
- Microgaster harnedi* Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 23. ♀.
- hospes* Marshall. Maine, N. Y., N. J., Md., Va., Ont., Ohio, Iowa, Kans., Colo., Utah; Europe. Host: *Ancylys comptana* (Forel.), *A. c. fragariae* (W. and R.), *Argyresthia calliphanes* Meyr.
- Microgaster hospes* Marshall, 1885. Roy. Ent. Soc. London, Trans. 1885: 257. ♀, ♂.
- Microgaster comptanae* Viereck, 1911. U. S. Natl. Mus., Proc. 39: 403. ♀.
- leechi* Walley. Mass., Pa., Md., Fla., Ont., Mich., Ohio, Minn., B. C., Ore. Host: *Macrobotys pertextalis* (Led.).
- Microgaster leechi* Walley, 1935. Canad. Ent. 67: 57. ♀.
- melligaster* Provancher. Que. s. to N. Y.; Ont., Mich., Iowa.
- Microgaster melligaster* Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 143. ♀.
- Microgaster rubricoxus* Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 386. "♀" = ♂.
- novicius* Marshall. Conn., Minn.; Europe. Host: *Swammerdamia heroldella* Hbn.
- Microgaster novicius* Marshall, 1885. Roy. Ent. Soc. London, Trans. 1885: 252. ♀, ♂.
- Microgaster swammerdamiae* Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 37. ♀, ♂.
- pantographae* Muesebeck. Maine, Mass., N. Y., Va., Ont., Mich., Ohio, Ill., Iowa, Mo. Host: *Argyrotaenia velutinana* (Wlkr.), *Fascista cercerisella* (Chamb.), *Pantographa limata* (G. and R.).
- Microgaster pantographae* Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 34. ♀.
- peroneae* Walley. Canada; Maine, D. C., Ohio, Wash., Alaska. Host: *Acleris gloverana* (Wlsm.), *A. logiana* (L.), *A. variana* (Fern.), *Archips argyropilus* (Wlkr.), *Sparganothis pettitana* (Rob.).
- Microgaster peroneae* Walley, 1935. Canad. Ent. 67: 56. ♀, ♂.
- phthorimaeae* Muesebeck. Wash., Ore., Calif. Host: *Amorbia essigana* Busck, *Anacampsis fragariella* Busck, *Aristotelia rhoisella* Busck, *Ephesiodes gilvescentella* Rag., *Phthorimaea operculella* (Zell.), *Platynota stultana* (Wlsm.), *Udea rubigalis* (Gn.).
- Microgaster phthorimaeae* Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 40. ♀, ♂.
- Biology: Graf, 1917. U. S. Dept. Agr., Bul. 427, p. 44-45 (as *Microgaster* sp.).
- scopelosomae* Muesebeck. Mass. Host: *Eupsilia devia* (Grote).
- Microgaster scopelosomae* Muesebeck, 1926. U. S. Natl. Mus., Proc. 69 (7): 17. ♀, ♂.
- tibialis* Nees. East. Canada, U. S. (?); Europe. Liberated in Mass., N. Y., Ohio, Mich., and Ont. but not established. Introduced from Europe. Host: *Ostrinia nubilalis* (Hbn.).
- Microgaster tibialis* Nees, 1834. Hym. Ichn. Affin. Monog., v. 1, p. 168. ♀, ♂.
- Microgaster luctuosus* Haliday, 1834. Ent. Mag. 2: 239. ♂.
- Microgaster messorius* Haliday, 1834. Ent. Mag. 2: 239. ♀, ♂.
- Microgaster pluto* Morley, 1936. Entomologist 69: 211. ♀.

NOMEN NUDUM IN MICROGASTER LATREILLE

Microgaster xylinoides Ashmead, 1895. In Webster, Canad. Ent. 27: 68.

Genus MICROPLITIS Foerster

Microplitis Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 245.

Type-species: *Microgaster sordipes* Nees. Orig. desig.

Dapsilotoma Cameron, 1906. Bombay Nat. Hist. Soc., Jour. 17: 101.

Type-species: *Dapsilotoma testaceipes* Cameron. Monotypic.

Revision: Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 43-72 (No. Amer. spp.). —Nixon, 1970. Brit. Mus. (Nat. Hist.) Ent., Bul. 25: 1-30 (some Eur. spp.).

Taxonomy: Shenefelt, 1973. Hym. Cat., part 9, p. 737-767 (cat. World spp.).

alaskensis Ashmead. Canada, Alaska, north. U. S. s. to N. Y., Mo., and Ariz. Host: *Autographa californica* (Spey.), *A. precationis* (Gn.), *Dargida procincta* (Grote), *Plusia* sp., *Pseudaletia unipuncta* (Haw.), *Rachiplusia* ou (Gn.), *Trichoplusia ni* (Hbn.).
Microplitis alaskensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 249. ♀.

Biology: Guppy and Miller, 1970. Canad. Ent. 102: 1331.

autographae Muesebeck. Ida., N. Mex., Ariz. Host: *Autographa californica* (Spey.).

Microplitis autographae Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 54. ♀, ♂.

bradleyi Muesebeck. Alta., Utah, B. C., Oreg., Calif. Host: *Amphipyra tragopoginis* (L.), *Feralia jocosa* (Gn.).

Microplitis bradleyi Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 70. ♀.

brassicae Muesebeck. Nebr., Tex., Colo., N. Mex., Ariz., Calif. Host: *Autographa californica* (Spey.), *Trichoplusia ni* (Hbn.).

Microplitis brassicae Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 60. ♀, ♂.

carteri Walley. Alta.

Microplitis carteri Walley, 1932. Canad. Ent. 64: 185. ♂.

ceratoniae Riley. Que. and N. S. s. to D. C., w. to Oreg. and N. Mex. Host: *Ceratonia amyntor* (Geyer), *Manduca sexta* (L.), *Paonias excaecata* (Smith), *Sphinx drupiferarum* (Smith), *S. gordius* Cram., *S. kalmiae* Smith.

Microplitis ceratoniae Riley, 1881. Acad. Sci. St. Louis, Trans. 4: 303. ♀, ♂.

Microplitis waldeni Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 204.

coactus Lundbeck. Greenland. Host: *Noctua* sp.

Microplitis coactus Lundbeck, 1896. Vid. Medd. Naturh. Foren. Kjobenhavn, p. 243. ♀.

coloradensis Muesebeck. Mich., Minn., Colo.

Microplitis coloradensis Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 49. ♂.

confusus Muesebeck. N. B., N. Y., Md., Ont., Mich., Ind., Minn., N. Dak., Tex. Host:

Eucirrhoedia pampina (Gn.).

Microplitis confusus Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 69. ♀, ♂.

crenulatus (Provancher). Que., Mass., Mich.

Microgaster crenulatus Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym. p. 387. "♀" = ♂.

croceipes (Cresson). N. J. s. to Ga., w. to Utah, and Ariz.; Oreg. Host: *Heliothis subflexa* (Guen.), *H. virescens* (F.), *H. zea* (Boddie).

Microgaster croceipes Cresson, 1872. Amer. Ent. Soc., Trans. 4: 183. ♀.

Microplitis nigripennis Ashmead, 1905. In Quantance and Brues, U. S. Dept. Agr., Bur. Ent. Bul. 50, p. 122.

Biology: Lewis, 1970. Ent. Soc. Amer., Ann. 63: 67-70. —Jones and Lewis, 1971. Jour. Ins.

Physiol. 17: 921-927. —Barras, 1972. Comp. Biochem. Physiol. 43B: 941-947. —Vinson and

Lewis, 1972. Jour. Ins. Physiol. 18: 2123-2124. —Dahlman and Vinson, 1975. Comp.

Biochem. Physiol. 52B: 465-468. —Edson and Vinson, 1977. Jour. Ins. Physiol. 23: 5-8.

feltiae Muesebeck. Ind. s. to S. C. and Ala., w. to N. Dak., Wash., and Calif. Host: *Agrotis gladiaria* Morr., *A. ipsilon* (Hufn.), *Feltia ducens* Wlkr., *F. subterranea* (F.), *Lacinipolia renigera* (Steph.), *Peridroma saucia* (Hbn.).

Microplitis feltiae Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 46.

Microgaster(?) *feltiae* Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 62. ♂.

Biology: Putler and Thewke, 1970. Ent. Soc. Amer., Ann. 63: 645-648.

- gortynae** Riley. N. Y., Pa., Va., Ohio, Miss., Wis., Iowa, Mo., Colo., Ore. Host: *Achatodes zea* (Harr.), *Hydroecia immanis* Grote, *Papaipema nebris* (Guen.), *P. pertincta* Dyar.
Microplitis gortynae Riley, 1881. Acad. Sci. St. Louis, Trans. 4: 304. ♀, ♂.
Biology: Balduf, 1929. Ohio Jour. Sci. 29: 219. — Decker, 1935. Iowa St. Col. Jour. Sci. 9: 571-572.
- hyphanthiae** Ashmead. Mass., N. Y., N. J., Md., Fla., Ont., Mich., Ohio, Ind., Ill., Mo., Ark., N. Dak., Tex. Host: *Acronicta furcifera* Guen., *A. hasta* Guen., *A. interrupta* Guen., *Hyphantria cunea* (Drury), *Xylota* sp.
Microplitis hyphanthiae Ashmead, 1898. Ent. Soc. Wash., Proc. 4: 164. ♀, ♂.
- kewleyi** Muesebeck. Que. s. to D. C., w. to Ont. and Mo.; Calif. Host: *Agrotis ipsilon* (Hufn.), *Amathes bicarnea* (Guen.), *Euxoa* sp.
Microplitis kewleyi Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 51. ♀, ♂.
- laticinctus** Muesebeck. Que., Mass., N. Y., D. C., Ohio, Ala., Ill., Minn., Iowa.
Microplitis laticinctus Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 67. ♀, ♂.
- latistigma** Muesebeck. Md.
Microplitis latistigma Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 63. ♀.
- longicauda** Muesebeck. Colo., Idaho, Nev., Ore., Calif.
Microplitis longicauda Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 57. ♀.
- mamestrae** Weed. Mass., Conn., N. Y., N. J., Mich., Ohio, Wis., Ill., N. Mex., Utah. Host: *Ceramica picta* (Harr.).
Microplitis mamestrae Weed, 1887. Ill. State Lab. Nat. Hist., Bul. 3: 2. ♀.
- maturus** Weed. Que. s. to Fla., w. to Ont., S. Dak., and La. Host: *Caenurgina erechtea* (Cram.), *Drasteria* sp.
Microplitis maturus Weed, 1888. Amer. Ent. Soc., Trans. 15: 294. ♀, ♂.
Microplitis cincta Ashmead, 1891. Canad. Ent. 23: 3. ♂.
Microgaster tuckeri Viereck, 1905. Kans. Acad. Sci., Trans. 19: 274. ♀.
- mediator** (Haliday). Greenland; Europe.
Microgaster mediator Haliday, 1834. Ent. Mag. 2: 235. ♀, ♂.
Microgaster dorsalis Nees, 1834. Hym. Ich. Affin. Monog., v. 1, p. 170. ♂.
Microgaster fulvicornis Wesm., 1837. Nouv. Mem. Acad. Sci. Bruxelles 10: 44. ♀, ♂.
Microplitis medianus Ruthe, 1860. Berlin. Ent. Ztschr. 4: 127. ♀.
- melianae** Viereck. Ont., N. Y., Ohio, Tenn., Mich., Ill., Minn., Iowa, Kans. Host: *Faronta diffusa* (Wlkr.), *Heliothis zea* (Boddie), *Pseudaletia unipuncta* (Haw.).
Microplitis melianae Viereck, 1911. U. S. Natl. Mus., Proc. 40: 185. ♂.
- montanus** Muesebeck. Nev., Calif. Host: *Catocala verrilliana* Grote.
Microplitis montanus Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 71. ♀, ♂.
- muesebecki** Marsh. N. H., Colo., Idaho, B. C., Wash., Calif.
Microplitis stigmaticus Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 47. ♀, ♂. Preocc. by Ratzeburg, 1844.
Microplitis muesebecki Marsh, 1974. Ent. Soc. Wash., Proc. 76: 285. N. name for *stigmaticus* Muesebeck.
- nigritus** Muesebeck. Colo.
Microplitis nigritus Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 58. ♀, ♂.
- perplexus** Muesebeck. Maine, Md., Ont., Mich., Ind., Minn., B. C.
Microplitis perplexus Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 49. ♀.
- plutellae** Muesebeck. N. Y., Va., S. C., Ont., Minn., Iowa, N. Dak., Sask., Colo., Utah, Idaho, Calif. Host: *Plutella xylostella* (L.), *Trichoplusia ni* (Hbn.).
Microplitis plutellae Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 60. ♀, ♂.
- Biology: Harcourt, 1960. Canad. Ent. 92: 420-421. — Putman, 1968. Canad. Ent. 100: 11-16.
- quadridentatus** (Provancher). Maine, N. H., Mass., N. Y., Ont., Mich., Ill., Minn., S. Dak. Host: *Simyra heurici* (Grote).
Microgaster 4-dentatus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 140. ♂.
Microplitis terminatus Weed, 1888. Amer. Ent. Soc., Trans. 15: 295. ♀, ♂.

quintilis Viereck. Conn.

Microplitis quintilis Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 204. ♂.

rugosus Muesebeck. N. J., Mich.

Microplitis rugosus Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 48. ♂.

scutellatus Muesebeck. Maine, N. Y., Mich., Ill., Iowa, S. Dak., Kans., Mont., Idaho, Wash., Oreg.

Microplitis scutellatus Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 66. ♀.

striatus Muesebeck. Mich., Tex.

Microplitis striatus Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 64. ♂.

varicolor Viereck. Que. and N. B. s. to Fla., w. to Ont., Utah, and Tex. Host: *Leucania latiuscula* H.-S., *Plathypena scabra* (F.), *Pseudaletia unipuncta* (Haw.), *Syngrapha epigaea* (Grote).

Microplitis varicolor Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 204.

Biology: Wood and Neilson, 1960. Canad. Ent. 92: 761. —Guppy and Miller, 1970. Canad. Ent. 102: 1331.

NOMINA NUDA IN MICROPLITIS FOERSTER,

Microplitis atrocozalis Ashmead, 1905. In Nason, Ent. News 16: 296.

Microplitis bicolor Ashmead, 1900 (1899). In Smith, Ins. of N. J., p. 594.

Microplitis forbesii Ashmead, 1905. In Nason, Ent. News 16: 296.

Microplitis illinoisensis Ashmead, 1905. In Nason, Ent. News 16: 296.

Microplitis ohioensis Ashmead, 1905. In Nason, Ent. News 16: 296.

Microplitis similis Ashmead, 1905. In Nason, Ent. News 16: 297.

Microplitis sphingis Ashmead, 1905. In Nason, Ent. News 16: 297.

Genus MIRAX Haliday

Mirax Haliday, 1833. Ent. Mag. 1: 263.

Type-species: *Mirax rufilabris* Haliday. Monotypic.

Centistidea Rohwer, 1914. Psyche 21: 81.

Type-species: *Centistidea ectoedemiae* Rohwer. Orig. desig.

The exact relationships of this genus are not clearly understood. Telenga (1955) and Capek (1970) place it with the Adelinae, but Tobias (1967) and Nixon (1965) place it in the Microgasterinae, the latter author suggesting a separate tribal position. Hosts are lepidopterous leaf miners.

Revision: Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 10-12 (No. Amer. spp.).

Taxonomy: Telenga, 1955. Fauna U. S. S. R., v. 5, n. 4, p. 19. —Nixon, 1965. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 2, p. 8. —Tobias, 1967. Ent. Obozr. 46: 657. —Capek, 1969. Ent. Soc. Wash., Proc. 71: 309. —Capek, 1970. Canad. Ent. 102: 870. —Shenefelt, 1973. Hym. Cat., part 9, p. 676-679 (cat. World spp.).

aspidiscae Ashmead. Que., Md., D. C., Fla. Host: *Coptodisca splendoriferella* (Clem.), *Grapholitha prunivora* (Walsh).

Mirax aspidiscae Ashmead, 1893. Psyche 6: 378. ♀, ♂.

Mirax grapholithae Ashmead, 1893. Psyche 6: 378. ♂.

coptodiscae Walley. B. C., Wash., Calif. Host: *Coptodisca arbutiella* Busck.

Mirax coptodiscae Walley, 1941. Canad. Ent. 73: 84. ♀, ♂.

ectoedemiae (Rohwer). Va., Oreg., Calif. Host: *Ectoedemia castaneae* Busck, *Marmara arbutiella* Busck, *Proleucoptera* sp.

Centistidea ectoedemiae Rohwer, 1914. Psyche 21: 81. ♀, ♂.

lithocolletidis Ashmead. N. J., D. C., S. C., Fla., Ont., Mich., Tenn., Tex. Host: *Cameraria acerella* (Clem.), *Leucanthiza dircella* Braun.

Mirax lithocolletidis Ashmead, 1893. Psyche 6: 378. ♀, ♂.

minuta Ashmead. Ohio, Fla., Tex. Host: *Cameraria caryaefoliella* (Clem.).

Mirax minuta Ashmead, 1893. Psyche 6: 378. ♀.

pallida Ashmead. Fla.

Mirax pallida Ashmead, 1893. Psyche 6: 379. ♀.

texana Muesebeck. Mich., Fla., Tex. Host: *Bucculatrix* sp.

Mirax texana Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 11. ♂.

Genus PROTOMICROPLITIS Ashmead

Protomicroplitis Ashmead, 1898 (1897). Ent. Soc. Wash., Proc. 4: 166. No species included.

Type-species: *Microgaster mediata* Cresson. Subsequent monotypy. First included species by Ashmead, 1900. Roy. Ent. Soc. London, Trans. 1900: 292.

Revision: Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 20-32 (No. Amer. sp. in *Microgaster*). — Nixon, 1965. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 2, p. 234-264 (World spp.).

Taxonomy: Nixon, 1965. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 2, p. 234. — Shenefelt, 1973. Hym. Cat., part 9, p. 772-782 (cat. World spp.).

auripes (Provancher). Que. and N. B. s. to Va., w. to Ont., N. Dak., and Kans. Host: *Faronta diffusa* (Wlkr.), *Pseudaletia unipuncta* (Haw.).

Microgaster auripes Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym. p. 141. ♀.

bakeri (Muesebeck). Md., Ga., Fla., Ill., Iowa, Mo., La., Nebr., Kans., Tex. Host: *Tarachidia candefacta* (Hbn.), *T. erastrioides* (Guen.).

Microgaster bakeri Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 29. ♀, ♂.

Taxonomy: Marsh, 1974. Ent. Soc. Wash., Proc. 76: 287.

calliptera (Say). N. Y., N. C., Ga., Fla., Ind., Iowa, La., S. Dak., Nebr., Kans., Tex., Colo. Host: *Platysenta sutor* (Guen.), *P. videns* (Guen.).

Microgaster calliptera Say, 1836. Boston Jour. Nat. Hist. 1: 264.

Microgaster maculipennis Cresson, 1872. Amer. Ent. Soc., Trans. 4: 183. ♀, ♂.

facetosa (Weed). Ont. and N. Y. s. to Ga., w. to B. C. and Calif. Host: *Argyrotaenia velutinana* (Wlkr.), *Elaphria versicolor* (Grote), *Euparthenos nubilis* (Hbn.), *Orthosia revicta* (Morr.), *Plathypena scabra* (F.).

Microgaster facetosa Weed, 1888. Amer. Ent. Soc., Trans. 15: 296. ♀, ♂.

Microgaster (Dialcogaster) solidaginis Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 202.

garmani Ashmead. Md., D. C., Va., Ky., Ill., Mo., Ark., La., Tex. Host: *Ogdoconta cinereola* (Guen.).

Protomicroplitis germani(!) Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 132.

iridescens (Cresson). Fla.; Cuba. Host: *Asciodes gordialis* Gn.

Microgaster iridescens Cresson, 1865. Ent. Soc. Phila., Proc. 4: 68. ♀, ♂.

Taxonomy: Marsh, 1974. Ent. Soc. Wash., Proc. 76: 287.

mediatus (Cresson). Fla.; Cuba, Mexico.

Microgaster mediatus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 66. ♂.

scotica (Marshall). Mich.; Europe.

Microgaster scotica Marshall, 1885. Roy. Ent. Soc. London, Trans. 1885: 251. ♂.

TRIBE CARDIOCHILINI

This group has, in the past, been placed as a tribe of the Helconinae or as a separate subfamily near the Microgastrinae. Recent workers (Telenga, 1955; Nixon, 1965; Capek, 1970) have placed it as a tribe within the Microgastrinae and I have chosen to follow this arrangement.

Taxonomy: Telenga, 1955. Fauna U. S. S. R., v. 5, n. 4, p. 212. — Nixon, 1965. Brit. Mus. (Nat. Hist.) Ent., Bul. Supl. 2, p. 6. — Capek, 1970. Canad. Ent. 102: 858, 870.

Genus CARDIOCHILES Nees

Cardiochiles Nees, 1818. Nov. Act. Acad. Caes. Leop. Car. 9: 307. No included species.

Type-species: *Ichneumon saltator* Fabricius. Subsequent monotypy. First species included by Nees, 1834. Hym. Ichn. Affin. Monog., v. 1, p. 224.

Toxoneuron Say, 1836. Boston Jour. Nat. Hist. 1: 258.

Type-species: *Bracon* (*Toxoneuron*) *viator* Say. Desig. by Viereck, 1914.

Tenthredoides Cresson, 1865. Ent. Soc. Phila., Proc. 4: 290.

Type-species: *Tenthredoides seminiger* Cresson. Monotypic.

Toxoneura Cresson, 1887. Amer. Ent. Soc., Trans., Suppl. Vol., p. 61, 154. Emend.

Ditherus Cameron, 1902. Bombay Nat. Hist. Soc., Jour. 14: 434.

Type-species: *Ditherus ruficollis* Cameron. Monotypic.

Schonlandella Cameron, 1904. Rec. Albany Mus. 1: 169.

Type-species: *Schonlandella nigromaculata* Cameron. Desig. by Viereck, 1914.

Ernestiella Cameron, 1905. Spolia Zeylanica 3: 81.

Type-species: *Ernestiella nigromaculata* Cameron. Monotypic.

Toxoneurum Schulz, 1906. Spolia Hym., p. 137. Emend.

Hartemita Cameron, 1910. Wien. Ent. Ztg. 29: 99.

Type-species: *Hartemita latipes* Cameron. Monotypic.

Psilommiscus Enderlein, 1912. Arch. f. Naturgesch. 78: 98.

Type-species: *Psilommiscus sumatranus* Enderlein. Monotypic.

Revision: Mao, 1945. Pan-Pacific Ent. 21: 125-134 (Mex. spp.). —Mao, 1949. U. S. Natl. Mus., Proc. 99: 229-266 (No. Amer. spp.).

Taxonomy: Shenefelt, 1973. Hym. Cat., part 9, p. 785-804 (cat. World spp.).

abdominalis (Cresson). D. C., Ill., La., Tex.

Toxoneuron abdominalis Cresson, 1873. Canad. Ent. 5: 68. ♂.

apicalis (Cresson). N. J. s. to Fla.; Ill., Iowa, Ark., Kans., Ariz., Calif. Host: *Adelphia petrella* (Zell.), *Ulophora* sp.

Toxoneuron apicale Cresson, 1873. Canad. Ent. 5: 68. ♂.

arugosus Mao. Ont. and N. J. s. to Ga., w. to Oreg., Calif., and Tex.

Cardiophiles arugosus Mao, 1949. U. S. Natl. Mus., Proc. 99: 233. ♀, ♂.

brevitarsis Mao. Calif.

Cardiophiles brevitarsis Mao, 1949. U. S. Natl. Mus., Proc. 99: 235. ♀.

californicus (Ashmead). Calif.

Toxoneura californicus Ashmead, 1894. Ent. Soc. Wash., Proc. 3: 50. ♀.

dignus Mao. Tex.

Cardiophiles dignus Mao, 1949. U. S. Natl. Mus., Proc. 99: 237. ♀.

dilatus Mao. Calif.

Cardiophiles dilatus Mao, 1949. U. S. Natl. Mus., Proc. 99: 238. ♀, ♂.

explorator (Say). Ohio, Ind., Ill., Miss., Mo., Ark., Kans., Okla., Tex., Colo., N. Mex., Ariz., Wash., Calif. Host: *Loxostege rantis* (Guen.).

Bracon (*Toxoneuron*) *explorator* Say, 1836. Boston Jour. Nat. Hist. 1: 259.

floridanus (Ashmead). Ga., Fla., Ont., Ohio, Kans., Colo.; Mexico. Host: *Epipaschia zelleri* (Grote).

Toxoneura floridana Ashmead, 1894. Ent. Soc. Wash., Proc. 3: 50. ♂.

insculptus Mao. N. C., Fla. Host: *Phthorimaea operculella* (Zell.).

Cardiophiles insculptus Mao, 1949. U. S. Natl. Mus., Proc. 99: 241. ♀, ♂.

Cardiophiles operculellus Mao, 1949. U. S. Natl. Mus., Proc. 99: pl. 4, fig. 8.

levis Mao. N. Mex., Nev., Calif.; Mexico.

Cardiophiles levis Mao, 1949. U. S. Natl. Mus., Proc. 99: 242. ♀, ♂.

magnus Mao. Iowa, Kans., Tex., Colo., N. Mex., Ariz. Host: *Schinia* sp.

Cardiophiles magnus Mao, 1949. U. S. Natl. Mus., Proc. 99: 243. ♀, ♂.

minutus (Cresson). Que., Md., Va., Ont., Mich., Ill., Iowa, Tenn. Host: *Aeaea ostryaella* Chamb.

Toxoneuron minutum Cresson, 1873. Canad. Ent. 5: 67. ♀.

nebrascensis Mao. Nebr.

Cardiophiles nebrascensis Mao, 1949. U. S. Natl. Mus., Proc. 99: 245. ♀.

nigricans Mao. Tex., Nev., Calif.

Cardiophiles nigricans Mao, 1949. U. S. Natl. Mus., Proc. 99: 246. ♂.

- nigricipes** Viereck. D. C. s. to Fla., w. to Kans. and La.; Mexico. Host: *Heliothis subflexa* (Guen.), *H. virescens* (F.).
Cardiochiles nigricipes Viereck, 1912. U. S. Natl. Mus., Proc. 43: 578. ♀, ♂.
 Biology: Chamberlin and Tenhet, 1926. Jour. Agr. Res. 33: 21-27. —Vinson and Lewis, 1965. Jour. Econ. Ent. 58: 869-871. —Lewis and Brazzel, 1966. Jour. Econ. Ent. 59: 820-822.
 —Lewis, Brazzel and Vinson, 1967. Jour. Econ. Ent. 60: 615-616. —Lewis and Vinson, 1968. Ent. Soc. Amer., Ann. 61: 561-565. —Vinson, 1968. Ent. Soc. Amer., Ann. 61: 8-10. —Lewis and Vinson, 1968. Jour. Insect Physiol. 14: 613-626. —Lewis and Vinson, 1971. Ent. Soc. Amer., Ann. 64: 970-972. —Hays and Vinson, 1971. Anim. Behavior 19: 344-352. —Vinson, 1972. Ent. Soc. Amer., Ann. 65: 229-236. —Lewis, *et al.*, 1972. Environ. Ent. 1: 1468-1471.
 Morphology: Vinson, 1969. Ent. Soc. Amer., Ann. 62: 1414-1419.
- nigroclypeus** Viereck. Kans., Tex., Calif.
Cardiochiles nigroclypeus Viereck, 1905. Kans. Acad. Sci., Trans. 19: 275. ♂.
- orizabae** Cresson. Ga., Fla., Ala., Ark., La., Kans., Tex., Ariz.; Mexico.
Toxoneuron orizabae Cresson, 1873. Canad. Ent. 5: 67. ♂.
- pluto** (Ashmead). Calif.
Toxoneura pluto Ashmead, 1894. Ent. Soc. Wash., Proc. 3: 49. "♀" = ♂.
- pullus** Mao. N. J., Fla., Ohio, Iowa, La., S. Dak., Kans., Tex., Utah, Oreg., Calif.
Cardiochiles arugosus var. *pullus* Mao, 1949. U. S. Natl. Mus., Proc. 99: 234. ♀, ♂.
- rubicundus** Mao. N. Mex., Utah, Ariz.; Mexico.
Cardiochiles rubicundus Mao, 1949. U. S. Natl. Mus., Proc. 99: 250. ♀.
- rubidus** Mao. N. Mex., Idaho, Ariz., Oreg., Calif.
Cardiochiles rubidus Mao, 1949. U. S. Natl. Mus., Proc. 99: 251. ♀.
- rufostigma** Mao. Wash., Calif.
Cardiochiles rufostigma Mao, 1949. U. S. Natl. Mus., Proc. 99: 252. ♀, ♂.
- siminiger** (Cresson). Iowa, Kans., Tex., Mont., Colo., N. Mex., Utah, Ariz., Calif.
Tenthredoides siminiger Cresson, 1865. Ent. Soc. Phila., Trans. 4: 291. ♀, ♂.
- tennessensis** Mao. Tenn.
Cardiochiles tennessensis Mao, 1949. U. S. Natl. Mus., Proc. 99: 254. ♀.
- texensis** Mao. Tex.; Mexico.
Cardiochiles texensis Mao, 1949. U. S. Natl. Mus., Proc. 99: 255. ♀.
- thoracicus** (Cresson). Ariz.; Mexico.
Toxoneuron thoracicum Cresson, 1873. Canad. Ent. 5: 68. ♀, ♂.
- thurberiae** Rohwer. Tex., Ariz.
Cardiochiles(!) therberiae(!) Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 226. "♂" = ♀.
- tibiator** (Say). Pa. s. to Fla.; Mich., Ky., Mo., Ark., Kans. Host: *Nephoteryx celtidella* (Hulst), *N. crassifasciella* Rag., *N. dammersi floridensis* Heinr., *N. subcaesiella* (Clem.), *N. subfuscella* (Rag.).
Bracon tibiator Say, 1824. In Keating, Narr. Long's 2nd Exped., v. 2, App., p. 322. ♀.
- transversus** Mao. Calif.
Cardiochiles transversus Mao, 1949. U. S. Natl. Mus., Proc. 99: 260. ♀, ♂.
- truncus** Mao. Nebr., Wyo., Colo.
Cardiochiles truncus Mao, 1949. U. S. Natl. Mus., Proc. 99: 261. ♀, ♂.
- viator** (Say). Conn. and N. Y. s. to Va., w. to Mich. and Ill.; Tex., Wyo., Colo., N. Mex., Wash.
Bracon (Toxoneuron) viator Say, 1836. Boston Jour. Nat. Hist. 1: 258.

SUBFAMILY ICHNEUTINAE

TRIBE ICHNEUTINI

Species in this group are solitary endoparasites of sawfly larvae; oviposition takes place in the host egg but the parasite cocoon is formed within the host cocoon.

Taxonomy: Shenefelt, 1973. Hym. Cat., part 9, p. 805-812 (cat. World spp.).

Genus ICHNEUTES Nees

Ichneutes Nees, 1816 (1813). Mag. Gesell. Naturf. Freunde Berlin 7: 275.

Type-species: *Ichneutes reunitor* Nees. Monotypic.

alaskensis Ashmead. Alaska.

Ichneutes alaskensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 251. ♂.

bicarinatus (Ashmead). Ont.

Opius bicarinatus Ashmead, 1891. Canad. Ent. 23: 4. ♂.

bicolor Cresson. Mass., Mich., Minn., Mont. Host: *Pristiphora erichsonii* (Htg.).

Ichneutes bicolor Cresson, 1872. Canad. Ent. 4: 230. ♀.

fulvipes Cresson. Ill., Mich., Alta., Colo., Nev., Calif. Host: *Euura* sp.

Ichneutes fulvipes Cresson, 1872. Canad. Ent. 4: 231. ♂.

pikonematis Mason. Maine, Minn., Canada. Host: *Pikonema alaskensis* (Roh.).

Ichneutes pikonematis Mason, 1968. Canad. Ent. 100: 721. ♀, ♂.

popofensis Ashmead. Alaska.

Ichneutes popofensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 250. ♂.

reunitor Nees. Alaska; Europe.

Ichneutes reunitor Nees, 1816 (1813). Mag. Gesell. Naturf. Freunde Berlin 7: 276. ♀, ♂.

Genus ICHNEUTIDEA Ashmead

Ichneutidea Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 133.

Type-species: *Ichneutes abdominalis* Cresson. Orig. desig.

Proteropoides Viereck, 1909. Ent. Soc. Wash., Proc. 11: 42.

Type-species: *Proteropoides hertzogi* Viereck. Orig. desig.

abdominalis (Cresson). Fla., Iowa, Kans., Tex., Mont., Calif. Host: *Sphacophilus plumiger* (Klug).

Ichneutes abdominalis Cresson, 1872. Amer. Ent. Soc., Trans. 4: 179. ♀.

proteroptoides Viereck. Que. s. to Fla., w. to S. Dak., Colo., and Tex.; Mexico. Host:

Schizocerella pilicornis (Holmgren).

Ichneutidea (!) *proteroptoides* Viereck, 1905. Kans. Acad. Sci., Trans. 19: 274. ♀.

Ichneutidea secunda Rohwer, 1908. Ent. News 19: 419. ♀.

Proteropoides hertzogi Viereck, 1909. Ent. Soc. Wash., Proc. 11: 42. ♀.

Genus PROTEROPS Wesmael

Proterops Wesmael, 1835. Nouv. Mem. Acad. Sci. Bruxelles 9: 201.

Type-species: *Proterops nigripennis* Wesmael. Monotypic.

californicus Cresson. Wyo., Calif.

Proterops californicus Cresson, 1873. Canad. Ent. 5: 69. ♂.

TRIBE MUESEBECKIINI

The genera in this tribe were previously associated with the Microgastrinae, but Mason (1969) has shown that they are morphologically similar to the Ichneutinae. Host records indicate that species are parasites of leaf mining lepidopterous larvae.

Taxonomy: Mason, 1969. Ent. Soc. Wash., Proc. 71: 263-278 (key to World genera).

Genus MUESEBECKIA Mason

Muesebeckia Mason, 1957. Canad. Ent. 89: 355.

Type-species: *Muesebeckia eximius* Mason. Orig. desig.

Revision: Mason, 1969. Ent. Soc. Wash., Proc. 71: 265-274.

eximia Mason. Que., Ont., N. C.

Muesebeckia eximius Mason, 1957. Canad. Ent. 89: 355. ♀, ♂.

Genus OLIGONEURUS Szepligeti

Oligoneurus Szepligeti, 1902. Termes. Fuzetek 25: 77.

Type-species: *Oligoneurus concolor* Szepligeti. Monotypic.

One undescribed species occurs in North America.

Genus PAROLIGONEURUS Muesebeck

Paroligoneurus Muesebeck, 1931. U. S. Natl. Mus., Proc. 79 (16): 7.

Type-species: *Paroligoneurus johnsoni* Muesebeck. Orig. desig.

Taxonomy: Shenefelt, 1973. Hym. Cat., part 9, p. 681-682 (cat. World spp.).

johnsoni Muesebeck. Mass., N. J., S. C., Fla. Host: *Nepticula* sp.

Paroligoneurus johnsoni Muesebeck, 1931. U. S. Natl. Mus., Proc. 79 (16): 8. ♀.

SUBFAMILY BLACINAE

The genera included here are in need of considerable study and the arrangement below is a very conservative one. There are distinct differences in morphology and biologies among these genera, some showing affinities with the Helconinae, others with the Agathidinae. Nearly all of the North American genera are unstudied.

TRIBE BLACINI

This tribe constitutes the least homogeneous group of genera in the Blacinae. The biologies of *Blacus* species are not well established; van Achterberg (1976 (1975)) places this and related genera as a tribe of the Helconinae. Species of *Centistes*, *Pygostolus*, and *Syrhizus* are internal parasites of adult Coleoptera and have been placed in a separate subfamily by Capek (1969).

Revision: van Achterberg, 1976 (1975). Tijdschr. Ent. 118: 159-323.

Genus BLACUS Nees

Genus BLACUS Subgenus BLACUS Nees

Blacus Nees, 1818. Nov. Act. Acad. Caes. Leop. Car. 9: 306.

Type-species: *Bracon humilis* Nees. Desig. by Westwood, 1839.

Miocolus Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 237.

Type-species: *Miocolus pallipes* Foerster. Orig. desig.

Gonicornus Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 254.

Type-species: *Blacus paganus* Haliday. Orig. desig.

Taxonomy: Shenefelt, 1969. Hym. Cat., part 4, p. 15-26 (cat. World spp.). —Haeselbarth, 1973.

Staatssaml. Munchen, Veroffentl. 16: 69-170 (Eur. and Cent. Asian spp.). —van

Achterberg, 1976 (1975). Tijdschr. Ent. 118: 174-176 (key to subgenera).

Biology: Arnaud, 1952. Ent. News 63: 149-150 (swarming of males).

apodastus van Achterberg. Ont.

Blacus (Blacus) apodastus van Achterberg, 1976 (1975). Tijdschr. Ent. 118: 234. ♀.

asaphus van Achterberg. N. S., Man., Sask.

Blacus (Blacus) asaphus van Achterberg, 1976 (1975). Tijdschr. Ent. 118: 229. ♀.

caduceus van Achterberg. Que. s. to Ga., w. to B. C. and Oreg.

Blacus (Blacus) caduceus van Achterberg, 1976 (1975). Tijdschr. Ent. 118: 237. ♀, ♂.

cognatus van Achterberg. Wis., Sask., Ariz.

Blacus (Blacus) cognatus van Achterberg, 1976 (1975). Tijdschr. Ent. 118: 230. ♀, ♂.

cohibilis van Achterberg. Tex.

Blacus (Blacus) cohibilis van Achterberg, 1976 (1975). Tijdschr. Ent. 118: 228. ♀.

defectuosus Provancher. Ont., Wis., Sask., Colo., Utah.

Blacus defectuosus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 133. ♀.

exilis (Nees). Que., Ont., N. Y., N. C., Iowa, Ill., Wis., Colo., B. C.; Europe.

Bracon exilis Nees, 1812 (1811). Mag. Gesell. Naturf. Freunde Berlin 5: 19. ♀, ♂.

Aphidius lactucaphis Fitch, 1855 (1854). N. Y. State Agr. Soc., Trans. 14: 840.

Miocolus pallipes Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 237. Preocc. in

Blacus by *pallipes* Haliday, 1835.

- Blacus nanus* Ashmead, 1905. In Nason, Ent. News 16: 294. Nom. nud.
Blacus propallipes Shenefelt, 1969. Hym. Cat., part 4, p. 23. N. name for *pallipes* Foerster.
- humilis** (Nees). Que., N. H., N. Y., W. Va., N. C., Ont., Wis., Sask., Colo., Ariz., Alta., B. C., Oreg., Calif., N. W. T., Alaska; Europe.
Bracon humilis Nees, 1812 (1811). Mag. Gesell. Naturf. Freunde Berlin 5: 19. ♀, ♂.
Blacus (Blacus) trivialis Haliday, 1835. Ent. Mag. 3: 122. ♀, ♂.
- maryi** *maryi* Hellen. Colo., Alta., B. C.; Europe.
Blacus maryi Hellen, 1958. Soc. Fauna Flora Fenn. 4: 23. ♀.
- maryi** *nicicola* Hedqvist. Man., Yukon; Europe.
Blacus nicicola Hedqvist, 1974. Ent. Tidskr. 95: 184. ♀.
- masoni** van Achterberg. Que., Wis., Man., Colo., Alta., B. C.
Blacus (Blacus) masoni van Achterberg, 1976 (1975). Tijdschr. Ent. 118: 235. ♀.
- paganus** Haliday. Que., N. C., Ga., Alta., B. C.; Europe.
Blacus (Blacus) paganus Haliday, 1835. Ent. Mag. 3: 122. ♀, ♂.
Blacus brevicornis Ruthe, 1861. Berlin. Ent. Ztschr. 5: 146. ♀.
- rufipes** (Ashmead). Ind.
Dimeris rufipes Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 626. ♀.

Genus **BLACUS** Subgenus **GANYCHORUS** Haliday

- Ganychorus* Haliday, 1835. Ent. Mag. 3: 40.
 Type-species: *Bracon ruficornis* Nees. Desig. by Westwood, 1839.
- armatulus** Ruthe. Ont.; Europe.
Blacus armatulus Ruthe, 1861. Berlin. Ent. Ztschr. 5: 137. ♀.
- collaris** (Ashmead). Que., Va., N. C.; Mexico, West Indies, So. Amer.
Ganychorus collaris Ashmead, 1894. Linn. Soc., Jour. 25: 131. ♀.
- ruficornis** (Nees). No. Amer.; Europe.
Bracon ruficornis Nees, 1812 (1811). Mag. Gesell. Naturf. Freunde Berlin 5: 18. ♀, ♂.
Microgaster bisstigmata Say, 1836. Boston Jour. Nat. Hist. 1: 264. ♂.
Blacus dentatus Hellen, 1958. Soc. Fauna Flora Fenn. 4: 21. ♀.
- Biology: Syrjamaki, 1976. Ent. Fenn., Ann. 42: 66-68 (swarming).
- striatus** van Achterberg. N. H., Canada, Alaska.
Blacus (Ganychorus) striatus van Achterberg, 1976 (1975). Tijdschr. Ent. 118: 207. ♀, ♂.

Genus **BLACUS** Subgenus **HYSTEROBOLUS** Viereck,

- Hysterobolus* Viereck, 1913. U. S. Natl. Mus., Proc. 44: 559.
 Type-species: *Hysterobolus mallochi* Viereck. Orig. desig.
- mallochi** (Viereck). Que., Md., Va.
Hysterobolus mallochi Viereck, 1913. U. S. Natl. Mus., Proc. 44: 560. ♀.
- patulus** van Achterberg. B. C.
Blacus (Hysterobolus) patulus van Achterberg, 1976 (1975). Tijdschr. Ent. 118: 219. ♀.
- redactus** van Achterberg. Wis.
Blacus (Hysterobolus) redactus van Achterberg, 1976 (1975). Tijdschr. Ent. 118: 218. ♀.

Genus **BLACUS** Subgenus **LEIOBLACUS** van Achterberg

- Blacus* subg. *Leioblacus* van Achterberg, 1976 (1975). Tijdschr. Ent. 118: 180.
 Type-species: *Blacus (Leioblacus) compressiventris* van Achterberg. Orig. desig.
- compressiventris** van Achterberg. Que., N. H., N. C., S. C., Ga., Ont., B. C.
Blacus (Leioblacus) compressiventris van Achterberg, 1976 (1975). Tijdschr. Ent. 118: 182. ♀.

Genus **BLACUS** Subgenus **NEOBLACUS** Ashmead

- Neoblacus* Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 122.
 Type-species: *Neoblacus rufipes* Ashmead. Orig. desig.

- koenigi* Fischer. Que., N. H., Mass., Md., Ont., Mich., Wis., Calif.; Europe.
Neoblasticus rufipes Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 122. Preocc. by Ashmead, 1889 (1888).
Blacus koenigi Fischer, 1962. Ztschr. Angew. Ent. 58: 333. ♀, ♂.

Genus *BLACUS* Subgenus *TARPHEION* van Achterberg

- Blacus* subg. *Tarpeion* van Achterberg, 1976 (1975). Tijdschr. Ent. 118: 185.
 Type-species: *Blacus (Tarpeion) chillcotti* van Achterberg. Orig. desig.
chillcotti van Achterberg. Ont., N. J., N. C., Ga.
Blacus (Tarpeion) chillcotti van Achterberg, 1976 (1975). Tijdschr. Ent. 118: 189. ♀.

NOMEN NUDUM IN *BLACUS* NEES

- Blacus lithocolletidis* Ashmead, 1910. In Smith, N. J. State Mus., Rpt., p. 607.

Genus *CENTISTES* Haliday

- Leiophron* subg. *Ancylus* Haliday, 1833. Ent. Mag. 1: 261. Preocc. by Mueller, 1774.
 Type-species: *Leiophron (Ancylus) cuspidatus* Haliday. Desig. by Viereck, 1914.
Leiophron subg. *Centistes* Haliday, 1835. Ent. Mag. 2: 462.
 Type-species: *Leiophron (Ancylus) cuspidatus* Haliday. Monotypic.
Ancyllus Haldeman, 1842. Acad. Nat. Sci. Phila., Proc. 1: 191. N. name for *Ancylus* Haliday. Gray (1821) also proposed the name *Ancyllus*, but apparently only as an emendation of *Ancylus* Mueller.
Euphoridea Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 116.
 Type-species: *Euphoridea claripennis* Ashmead. Orig. desig.
Liosigalphus Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 125.
 Type-species: *Liosigalphus politus* Ashmead. Orig. desig.
 Taxonomy: Shenefelt, 1969. Hym. Cat., part 4, p. 26-28 (cat. World spp.).
claripennis (Ashmead). Mich., Ky., Iowa, Ark.
Euphoridea claripennis Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 116.
excrucians (Haliday). Ont.; Europe. Host: *Sitona scissifrons* Say.
Leiophron (Ancylus) excrucians Haliday, 1835. Ent. Mag. 2: 461. ♀.
Leiophron (Ancylus) lituratus Haliday, 1835. Ent. Mag. 2: 461. ♀.
 Biology: Loan, 1964 (1963). Ent. Soc. Ont., Proc. 94: 56-61 (as *excrucians*).
 Morphology: Loan, 1963. Ent. Soc. Amer., Ann. 56: 605-606 (larvae; as *lituratus*).
laevis (Cresson). Que., Pa., Ohio, Mich., S. D. Host: *Amara exarata* Dejean.
Leiophron laevis Cresson, 1872. Canad. Ent. 4: 228. ♂.
Sigalphus trisectus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 143. ♂.
Eubadizon basilare Provancher, 1890. Nat. Canad. 19: 248. ♀.
 Taxonomy: Mason, 1974. Ent. Soc. Wash., Proc. 76: 245.
politus (Ashmead). D. C.
Liosigalphus politus Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 125.

Genus *PYGOSTOLUS* Haliday

- Leiophron* subg. *Pygostolus* Haliday, 1833. Ent. Mag. 1: 263.
 Type-species: *Cryptus stictus* Fabricius. Monotypic.
 Taxonomy: Shenefelt, 1969. Hym. Cat., part 4, p. 122-124 (cat. World spp.).
falcatus (Nees). P. E. I., Ont., Man. Introduced from Sweden. Host: *Sitona hispidulus* (F.), *S. lineatus* (L.). Loan and Thompson (1972) indicate that this species might be Holarctic or adventive and that the P. E. I. population probably did not develop from the colonies introduced in Ont. and Man.
Leiophron falcatus Nees, 1834. Hym. Ichn. Aff. Monog., v. 1, p. 44. ♀.
 Biology: Loan and Holdaway, 1961. Bul. Ent. Res. 62: 473-488. — Loan, 1961. Jour. Econ. Ent. 54: 1026-1031. — Loan, 1963. Ent. Soc. Amer., Ann. 56: 605-606. — Loan, 1965. Jour. Econ. Ent. 58: 798-799. — Loan and Thompson, 1972. Canad. Ent. 104: 779-780.

Genus SYRRHIZUS Foerster

Syrrhizus Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 254.

Type-species: *Syrrhizus delusorius* Foerster. Orig. desig.

Taxonomy: Shenefelt, 1969. Hym. Cat., part 4, p. 133-134 (cat. World spp.).

agilis (Cresson). N. Y., Md., Va., Ohio, Ill.

Microctonus agilis Cresson, 1872. Canad. Ent. 4: 226. ♂.

diabroticae Gahan. Ohio, Ill. Host: *Acalymma vittatum* (F.).

Syrrhizus diabroticae Gahan, 1922. Ohio Jour. Sci. 22: 140. ♀.

TRIBE BRACHISTINI

All species are apparently internal parasites of coleopterous larvae. This tribe, as proposed by Mason (1974), includes the genera listed under the Triaspidini of the previous catalog.

Taxonomy: Mason, 1974. Ent. Soc. Wash., Proc. 76: 235-246.

Genus ALIOLUS Say

Bracon subg. *Aliolus* Say, 1836. Boston Jour. Nat. Hist. 1: 259.

Type-species: *Bracon (Aliolus) trilobatus* Say. Desig. by Viereck, 1914.

Revision: Martin, 1956. Canada Dept. Agr. Pub. 965, p. 14-60 (No. Amer. spp.).

Taxonomy: Shenefelt, 1970. Hym. Cat., part 5, p. 269-273 (cat. World spp.).

bicornis Martin. U. S. (state not known).

Aliolus bicornis Martin, 1956. Canada Dept. Agr. Pub. 965, p. 39. ♀.

bucculentis Martin. B. C.

Aliolus bucculentis Martin, 1956. Canada Dept. Agr. Pub. 965, p. 41. ♀.

canadensis (Provancher). Mass., N. Y., Canada.

Sigalphus canadensis Provancher, 1881. Nat. Canad. 12: 197. ♀.

crabillii Martin. N. Y. s. to Ga., w. to Wis. and Ark.

Aliolus crabillii Martin, 1956. Canada Dept. Agr. Pub. 965, p. 59. ♀, ♂.

denticulatus Martin. N. Y., Pa., N. J., Md., D. C., Iowa.

Aliolus denticulatus Martin, 1956. Canada Dept. Agr. Pub. 965, p. 33. ♀, ♂.

evanidus Martin. Tex.

Aliolus evanidus Martin, 1956. Canada Dept. Agr. Pub. 965, p. 37. ♂.

fiskei (Rohwer). Pa., N. J., Md., Va., N. C. Host: *Cossonus* sp., *Glipa octopunctata* (F.).

Triaspis fiskei Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 535. ♀.

indeprehensus Martin. Miss.

Aliolus indeprehensus Martin, 1956. Canada Dept. Agr. Pub. 965, p. 46. ♀.

marginatus Martin. N. Y., Va., Md., W. Va., Ohio, Mich., Tenn.

Aliolus marginatus Martin, 1956. Canada Dept. Agr. Pub. 965, p. 57. ♀, ♂.

patei Martin. N. S. s. to S. C.; Ont., Ohio.

Aliolus patei Martin, 1956. Canada Dept. Agr. Pub. 965, p. 55. ♀, ♂.

stanleyi Martin. Miss., Tex.

Aliolus stanleyi Martin, 1956. Canada Dept. Agr. Pub. 965, p. 53. ♀, ♂.

stictopleurus Martin. Pa., N. C., Mich., Miss. Host: *Obrium rufulum* Gah.

Aliolus stictopleurus Martin, 1956. Canada Dept. Agr. Pub. 965, p. 52. ♀, ♂.

tomoxiae (Rohwer). Pa., Md., D. C., Va., Mich., Kans. Host: *Tomoxia lineella* Lec.

Allodorus tomoxiae Rohwer, 1915. Ent. Soc. Wash., Proc. 17: 55. ♀, ♂.

tridentatus Martin. Ariz.

Aliolus tridentatus Martin, 1956. Canada Dept. Agr. Pub. 965, p. 30. ♀.

trilobatus (Say). Md., W. Va., Va., Mich., Ind.

Bracon (Aliolus) trilobatus Say, 1836. Boston Jour. Nat. Hist. 1: 259. ♂.

UNPLACED TAXA OF ALIOLUS SAY

- Bracon* (*Aliolus*) *thoracicus* Say, 1836. Boston Jour. Nat. Hist. 1: 260. Preoccupied in *Triaspis* by *thoracicus* Nees, 1812.
Triaspis sayi Muesebeck and Walkley, 1951. In Muesebeck, et al., U. S. Dept. Agr., Agr. Monog. 2, p. 114. N. name for *thoracicus* Say.

Genus ALLODORUS Foerster

Allodorus Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 242.

Type-species: *Sigalphus semirugosus* Nees. Orig. desig.

Taxonomy: Mason, 1974. Ent. Soc. Wash., Proc. 76: 241.

calyptoides (Martin). Wis.

Aliolus calyptoides Martin, 1956. Canada Dept. Agr. Pub. 965, p. 31. ♀.

crassigaster (Provancher). Que., N. B., Maine, Pa., Wis., Minn., Alta., Idaho, B. C., Wash., Oreg.

Host: *Pissodes dubius* Rand., *P. fasciatus* Lec., *P. strobi* Peck.

Brachistes crassigaster Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 132. ♀, ♂.

Brachistes strigitergum Cushman, 1930 (1929). U. S. Natl. Mus., Proc. 76 (25): 15. ♀. N. syn.

Biology: Deyrup, 1975. Conif. For. Biome Ecosystem Anal. Stud., Univ. of Wash., Bul. 6, pp. 73-74.

definitus (Muesebeck). Oreg., Calif. Host: *Conophthorus ponderosae* Hopk., *Ernobius* sp.

Eubadizon difinitum Muesebeck, 1957. Brooklyn Ent. Soc., Bul. 52: 53. ♀, ♂.

ernobii (Muesebeck). Oreg., Calif. Host: *Ernobius* sp.

Eubadizon ernobii Muesebeck, 1957. Brooklyn Ent. Soc., Bul. 52: 51. ♀, ♂.

Genus EUBAZUS Nees

This genus is restricted to those species which have a short abdomen and are parasites of Coleoptera larvae, as defined by Mason (1974).

Genus EUBAZUS Subgenus EUBAZUS Nees

Eubazus Nees, 1814 (1812). Mag. Gesell. Naturf. Freunde Berlin 6: 214.

Type-species: *Eubazus pallipes* Nees. Desig. by Viereck, 1914.

Eubadizon Nees, 1834. Hym. Ichn. Aff. Monog., v. 1, p. 233. Emend.

Eubadizus Nees, 1834. Hym. Ichn. Aff. Monog., v. 1, p. 233. Emend.

Taxonomy: Mason, 1974. Ent. Soc. Wash., Proc. 76: 239.

electus (Muesebeck). B. C., Oreg., Calif. Host: *Phymatodes* sp.

Eubadizon electum Muesebeck, 1957. Brooklyn Ent. Soc., Bul. 52: 54. ♀.

pallipes Nees. N. Y., Pa., N. J., W. Va., Mich., Wis., Ill.; Europe.

Eubazus pallipes Nees, 1814 (1812). Mag. Gesell. Naturf. Freunde Berlin 6: 215. ♀ (♂ misdet.).

Eubadizon coxalis Nees, 1834. Hym. Ichn. Aff. Monog., v. 1, p. 235. ♂.

Helcon (*Eubadizon*) *semistriatus* Haliday, 1835. Ent. Mag. 3: 131. ♂.

Eubadizon americanus Cresson, 1872. Canad. Ent. 4: 230. ♀.

phymatodis (Ashmead). N. Y., Md., D. C., Va., Mich., Ill. Host: *Phymatodes amoenus* (Say).

Eubadizon phymatodis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 644. ♀.

Genus EUBAZUS Subgenus BRACHISTES Wesmael

Brachistes Wesmael, 1835. Nouv. Mem. Acad. Sci. Bruxelles 9: 109.

Type-species: *Brachistes ruficoxis* Wesmael. Desig. by Foerster, 1862.

Taxonomy: Mason, 1974. Ent. Soc. Wash., Proc. 76: 240.

atricornis (Ashmead). Calif.

Ganychorus atricornis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 645. ♀, ♂.

- major** (Cresson). Canada, Va., Ohio, Ind., Ill. Host: *Magdalis barbata* (Say).
Calyptus major Cresson, 1872. Canad. Ent. 4: 228. ♀.
- orchesia** (Ashmead). Conn., N. Y., Md., D. C., Ga., Mich., Ill., Iowa. Host: *Bolitotherus cornutus* (Panz.), *Orchesia castanea* Melsh.
Ganychorus orchesia Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 645. ♀.
- rotundiceps** (Cresson). Que. s. to Md., w. to Ont., N. Dak., and Iowa. Host: *Magdalis armicollis* (Say), *M. barbata* (Say), *M. olyra* (Hbst.).
Calyptus rotundiceps Cresson, 1872. Canad. Ent. 4: 228. ♂.
Calyptus magdalis Cresson, 1878. Psyche 2: 189. ♀, ♂.
Eubadizon submucronatus Provancher, 1880. Nat. Canad. 12: 171. ♀, ♂.
Brachistes magdali Brues, 1910. Wis. Nat. Hist. Soc., Bul. 8: 50. ♀, ♂.
- salicicola** (Muesebeck). Calif. Host: *Dorytomus* sp.
Eubadizon salicicola Muesebeck, 1957. Brooklyn Ent. Soc., Bul. 52: 55. ♀, ♂.

Genus NEALIOLUS Mason

- Nealiolus* Mason, 1974. Ent. Soc. Wash., Proc. 76: 241.
 Type-species: *Sigalphus curculionis* Fitch. Orig. desig.
- acutulus** (Martin). N. Y.
Aliolus acutulus Martin, 1956. Canada Dept. Agr. Pub. 965, p. 19. ♀.
- auriculatus** (Martin). Colo.
Aliolus auriculatus Martin, 1956. Canada Dept. Agr. Pub. 965, p. 21. ♀, ♂.
- collaris** (Brues). Fla., Ark., Kans., Tex., N. Mex. Host: *Conotrachelus nenuphar* (Hbst.).
Calyptus collaris Brues, 1907. Wis. Nat. Hist. Soc., Bul. 5: 159. ♀.
- crassipes** (Martin). Pa., Md., S. C.
Aliolus crassipes Martin, 1956. Canada Dept. Agr. Pub. 965, p. 35. ♀, ♂.
- curculionis** (Fitch). Que. s. to Fla., w. to Ont., Nebr., and Calif. Host: *Anthonomus grandis* Boh., *Coccotorus scutellaris* (Lec.), *Conotrachelus nenuphar* (Hbst.), *Craponius inaequalis* (Say), *Cylindrocopturus adpersus* (Lec.), *Hyperodes texana* Stockton, *Listronotus oregonensis* (Lec.), *Magdalis armicollis* (Say), *Rhinocyllus conicus* (Froel.), *Tyloderma foveolata* Say. Shenefelt (1970) uses the name *tibiator* (Cresson) for this species under the false assumption that *Sigalphus curculionis* Fitch (1859) is preoccupied by *Sigalphus curculionum* Hartig (1847, presently in the genus *Eubadizon*).
Sigalphus curculionis Fitch, 1859. Country Gentleman 14: 221. ♀.
Calyptus tibiator Cresson, 1872. Canad. Ent. 4: 229. ♂.
Aliolus inaratus Martin, 1956. Canada Dept. Agr. Pub. 965, p. 38. ♂.
- biologicus** Armstrong, 1958. Canad. Ent. 90: 16-17.
- mexicanus** (Cresson). Colo., N. Mex., Ariz.; Mexico.
Calyptus mexicanus Cresson, 1872. Canad. Ent. 4: 229. ♂.
- rufus** (Riley). N. Y. s. to Fla., w. to Ont. and Tex. Host: *Anthonomus grandis* Boh., *Conotrachelus nenuphar* (Hbst.), *Tyloderma foveolata* Say.
Sigalphus curculionis var. *rufus* Riley, 1871. Ins. Mo. Ann. Rpt. 3: 27. ♀.

Genus SCHIZOPRYMNUS Foerster

- Schizoprymnus* Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 242.
 Type-species: *Sigalphus obscurus* Nees. Orig. desig.
- Taxonomy: Martin, 1956. Canada Dept. Agr. Pub. 965, p. 98-101 (treated as subgenus of *Triaspis*). —Shenefelt, 1970. Hym. Cat., part 5, p. 274-281 (cat. World spp.).
- americanus** Ashmead. Tex.
Schizoprymnus americanus Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 636. ♀.
- brevipennis** (Melander and Brues). Mass.
Chelonus brevipennis Melander and Brues, 1903. Biol. Bul. 5: 20. ♀.
- phillipsi** Viereck. Mich., Ind. Host: *Mordellistena andreae ustulata* Lec.
Schizoprymnus phillipsi Viereck, 1911. U. S. Natl. Mus., Proc. 39: 401. ♀, ♂.

texanus (Cresson). N. H., W. Va., Ohio, Ont., Mich., Ill., Tex., Utah, Calif. Ecology: Reared from gall on *Sidalgo*.

Sigalphus texanus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 179. "♀" = ♂.

Genus TRIASPIS Haliday

Helcon subg. *Triaspis* Haliday, 1835. Ent. Mag. 3: 124.

Type-species: *Sigalphus caudatus* Nees. Desig. by Viereck, 1912.

Muirella Fullaway, 1919. Roy. Asiatic Soc., Straits Branch, Jour. 80: 47.

Type-species: *Muirella concisa* Fullaway. Orig. desig.

Revision: Martin, 1956. Canada Dept. Agr. Pub. 965, p. 64-97 (No. Amer. spp.).

Taxonomy: Shenefelt, 1970. Hym. Cat., part 5, p. 281-301 (cat. World spp.).

additiva Martin. N. Y., S. Dak.

Triaspis (Triaspis) additiva Martin, 1956. Canada Dept. Agr. Pub. 965, p. 76. ♀, ♂.

aequoris Martin. Kans.

Triaspis (Triaspis) aequoris Martin, 1956. Canada Dept. Agr. Pub. 965, p. 92. ♀.

aquila Martin. Que.

Triaspis (Triaspis) aquila Martin, 1956. Canada Dept. Agr. Pub. 965, p. 85. ♂.

halidayi Martin. S. Dak.

Triaspis (Triaspis) halidayi Martin, 1956. Canada Dept. Agr. Pub. 965, p. 89. ♂.

kurtogaster Martin. N. Y. s. to Ga., w. to Ont. and La. Host: *Anthonomus grandis* Boh.,

Chalcodermus aenus Boh., *C. collaris* Horn., *Conotrachelus nenuphar* Hbst., *Curculio* sp., *Otiorhynchus ovatus* (L.).

Triaspis (Triaspis) kurtogaster Martin, 1956. Canada Dept. Agr. Pub. 965, p. 90. ♀.

laticarinata Martin. B. C.

Triaspis (Triaspis) laticarinata Martin, 1956. Canada Dept. Agr. Pub. 965, p. 94. ♀, ♂.

magnafoveae Martin. N. S., Ont., Mich., Ill., Alta.

Triaspis (Triaspis) magnafoveae Martin, 1956. Canada Dept. Agr. Pub. 965, p. 70. ♀, ♂.

matercula Martin. S. Dak.

Triaspis (Triaspis) matercula Martin, 1956. Canada Dept. Agr. Pub. 965, p. 68. ♀.

ocellulata Martin. N. Y., Ont. Host: Ash seed weevil.

Triaspis (Triaspis) ocellulata Martin, 1956. Canada Dept. Agr. Pub. 965, p. 87. ♀, ♂.

odontochila Martin. N. Y., Va., Mich., La. Host: *Podapion gallicola* Riley.

Triaspis (Triaspis) odontochila Martin, 1956. Canada Dept. Agr. Pub. 965, p. 83. ♀, ♂.

pissodis Viereck. Mont., Wyo., Idaho, Wash., Oreg., Calif. Host: *Cylindrocopturus furnissi*

Buch., *C. longulus* (Lec.), *Pissodes* sp.

Triaspis pissodis Viereck, 1912. U. S. Natl. Mus., Proc. 42: 628. ♀, ♂.

rectangulata Martin. S. Dak., Colo., Utah, Idaho.

Triaspis (Triaspis) rectangulata Martin, 1956. Canada Dept. Agr. Pub. 965, p. 74. ♀, ♂.

stenochila Martin. Kans.

Triaspis (Triaspis) stenochila Martin, 1956. Canada Dept. Agr. Pub. 965, p. 78. ♀.

stenogaster Martin. Colo.

Triaspis (Triaspis) stenogaster Martin, 1956. Canada Dept. Agr. Pub. 965, p. 72. ♀, ♂.

stictostiba Martin. Canada. Host: *Bruchus rufimanus* Boh.

Triaspis (Triaspis) stictostiba Martin, 1956. Canada Dept. Agr. Pub. 965, p. 82. ♀.

stilpnogaster Martin. Wis., Idaho, Calif.

Triaspis (Triaspis) stilpnogaster Martin, 1956. Canada Dept. Agr. Pub. 965, p. 66. ♀.

thoracica (Curtis). Canada (?), U. S. (?): Europe, Asia, So. Amer., Austr. Liberated in B. C.,

Pa., N. C., Ont., Idaho, Oreg., and Calif. but not known to be established. Introduced from Europe. Host: *Bruchus brachialis* Fab., *B. pisorum* (L.), *B. rufimanus* Boh.

Sigalphus thoracicus Curtis, 1860. Farm Insects, p. 365. ♀.

virginiensis (Ashmead). Pa., N. J., Md., D. C., Va., Ohio, Ark. Host: *Rhynchaenus pallicornis* (Say).

Centistes virginiensis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 655. ♀.

xanthochila Martin. Ont.

Triaspis (*Triaspis*) *xanthochila* Martin, 1958. Canad. Ent. 90: 191. ♀.

Genus UROSIGALPHUS Ashmead

Revision: Crawford, 1914. Insecutor Inscitiae Menstruus 2: 22-27 (No. Amer. spp.). —Martin, 1956. Canada Dept. Agr. Pub. 965, p. 102-137 (No. Amer. spp.). —Gibson, 1972. Ent. Soc. Amer., Misc. Pub. 8: 85-157 (No. and Cent. Amer. spp.).

Taxonomy: Shenefelt, 1970. Hym. Cat., part 5, p. 302-305 (cat. World spp.).

Genus UROSIGALPHUS Subgenus **BRUCHIUROSIGALPHUS** Gibson

Urosigalphus subg. *Bruchiurosigalphus* Gibson, 1972. Ent. Soc. Amer., Misc. Pub. 8: 94.

Type-species: *Urosigalphus bruchi* Crawford. Orig. desig.

bruchi Crawford. La., Tex., Ariz., Calif.; Hawaii, Mexico. Host: *Algarobius prosopis* (Lec.), *Amblycerus robiniae* (F.), *Mimosestes sallaei* (Sharp).

Urosigalphus bruchi Crawford, 1907. N. Y. Ent. Soc., Jour. 15: 181. ♀, ♂.

bruchivorus Crawford. Ariz., Calif. Host: *Algarobius prosopis* (Lec.), *Neltumius arizonensis* (Sch.).

Urosigalphus bruchivorus Crawford, 1914. Insecutor Inscitiae Menstruus 2: 25. ♀, ♂.

Urosigalphus arizonensis Crawford, 1914. Insecutor Inscitiae Menstruus 2: 25. ♀, ♂.

Urosigalphus truncatus Martin, 1956. Canada Dept. Agr. Pub. 965, p. 122. ♀.

ignotus Gibson. Calif.

Urosigalphus (*Bruchiurosigalphus*) *ignotus* Gibson, 1972. Ent. Soc. Amer., Misc. Pub. 8: 98. ♀.

neobruchi Gibson. Kans., Tex., Ariz.; Mexico. Host: *Acanthoscelides quadridentatus* (Sch.), *Algarobius prosopis* (Lec.), *Amblycerus robiniae* (F.), *Merobruchus* sp.

Urosigalphus (*Bruchiurosigalphus*) *neobruchi* Gibson, 1972. Ent. Soc. Amer., Misc. Pub. 8: 99. ♀, ♂.

salsola Gibson. Tex., Ariz.

Urosigalphus (*Bruchiurosigalphus*) *salsola* Gibson, 1972. Ent. Soc. Amer., Misc. Pub. 8: 100. ♀, ♂.

Genus UROSIGALPHUS Subgenus **MICROUROSIGALPHUS** Gibson

Urosigalphus subg. *Microurosigalphus* Gibson, 1972. Ent. Soc. Amer., Misc. Pub. 8: 87.

Type-species: *Urosigalphus femoratus* Crawford. Orig. desig.

acutulus Gibson. Colo., Ariz.

Urosigalphus (*Microurosigalphus*) *acutulus* Gibson, 1972. Ent. Soc. Amer., Misc. Pub. 8: 89. ♀, ♂.

breviovipositorus Gibson. Kans., Tex., Colo., N. Mex., Ariz.; Mexico.

Urosigalphus (*Microurosigalphus*) *breviovipositorus* Gibson, 1972. Ent. Soc. Amer., Misc. Pub. 8: 90. ♀, ♂.

femoratus Crawford. Conn. s. to Ga., w. to S. Dak. and Ariz.; Mexico. Host: *Anthonomus grandis* Boh., *Tyloderma foveolata* Say.

Urosigalphus femoratus Crawford, 1914. Insecutor Inscitiae Menstruus 2: 26. ♀, ♂.

Urosigalphus mohawkorum Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 234. ♀.

iowensis Gibson. Ill., Iowa, Nebr., Kans., N. Mex., Utah, Ariz.

Urosigalphus (*Microurosigalphus*) *iowensis* Gibson, 1972. Ent. Soc. Amer., Misc. Pub. 8: 92. ♀, ♂.

neomexicanus Crawford. Iowa, Mo., Ark., Tex., Colo., N. Mex., Ariz.

Urosigalphus neomexicanus Crawford, 1914. Insecutor Inscitiae Menstruus 2: 26. ♀, ♂.

Genus UROSIGALPHUS Subgenus **NEOUROSIGALPHUS** Gibson

Urosigalphus subg. *Neourosigalphus* Gibson, 1972. Ent. Soc. Amer., Misc. Pub. 8: 122.

Type-species: *Urosigalphus robustus* Ashmead. Orig. desig.

hubbardi Crawford. Ariz., Calif. Host: *Cylindrocopturus longulus* (Lec.).

Urosigalphus hubbardi Crawford, 1914. Insecutor Inscitiae Menstruus 2: 23. ♂.

Urosigalphus pini Cushman, 1922. U. S. Natl. Mus., Proc. 60 (21): 26. ♂.

neopunctifrons Gibson. Ariz.; Mexico.

Urosigalphus (*Neurosigalphus*) *neopunctifrons* Gibson, 1972. Ent. Soc. Amer., Misc. Pub. 8: 125. ♀, ♂.

nigripes Crawford. Ariz.

Urosigalphus nigripes Crawford, 1914. Insecutor Inscitiae Menstruus 2: 24. ♀.

otidocephali Cushman. Pa., N. C. Host: *Myrmex myrmex* (Hbst.).

Urosigalphus otidocephali Cushman, 1922. U. S. Natl. Mus., Proc. 60 (21): 25. ♂.

punctifrons Crawford. N. Mex., Ariz.; Mexico.

Urosigalphus punctifrons Crawford, 1914. Insecutor Inscitiae Menstruus 2: 24. ♂.

robustus Ashmead. Mass., Conn., N. J., Md., D. C., Va., Mich., Wis., Ark.

Urosigalphus robustus Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 638. ♀.

Urosigalphus wampawagorum Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 234. ♀.

Genus UROSIGALPHUS Subgenus PARAUROSIGALPHUS Gibson

Urosigalphus subg. *Paraurosigalphus* Gibson, 1972. Ent. Soc. Amer., Misc. Pub. 8: 128.

Type-species: *Urosigalphus* (*Paraurosigalphus*) *dakotaensis* Gibson. Orig. desig.

clarus Gibson. N. J., Md.

Urosigalphus (*Paraurosigalphus*) *clarus* Gibson, 1972. Ent. Soc. Amer., Misc. Pub. 8: 129. ♀, ♂.

dakotaensis Gibson. Iowa, S. Dak., Nebr.

Urosigalphus (*Paraurosigalphus*) *dakotaensis* Gibson, 1972. Ent. Soc. Amer., Misc. Pub. 8: 130. ♀, ♂.

novissimus Gibson. Kans.

Urosigalphus (*Paraurosigalphus*) *novissimus* Gibson, 1972. Ent. Soc. Amer., Misc. Pub. 8: 131. ♂.

rugosocarpus Gibson. Ariz.

Urosigalphus (*Paraurosigalphus*) *rugosocarpus* Gibson, 1972. Ent. Soc. Amer., Misc. Pub. 8: 132. ♂.

Genus UROSIGALPHUS Subgenus UROSIGALPHUS Ashmead

Urosigalphus Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 637.

Type-species: *Urosigalphus armatus* Ashmead. Orig. desig.

Rhyssosigalphus Cameron, 1904. Amer. Ent. Soc., Trans. 30: 260.

Type-species: *Rhyssosigalphus rugosus* Cameron. Monotypic.

anthonomi Crawford. Tex.; Mexico. Host: *Anthonomus grandis* Boh., *Chalcodermus aeneus* Boh.

Urosigalphus anthonomi Crawford, 1907. Canad. Ent. 39: 133. ♀, ♂.

armatus Ashmead. Md., W. Va., Va., Tenn. Host: *Curculio caryatrypes* (Boh.).

Urosigalphus armatus Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 637. ♀, ♂.

barberi Crawford. Pa. s. to Fla., w. to Wis. and N. Mex. Host: *Curculio* spp. in acorns, *C. pardalis* (Chitt.).

Urosigalphus barberi Crawford, 1914. Insecutor Inscitiae Menstruus 2: 23. ♀.

confusor Gibson. Tex., Ariz.

Urosigalphus (*Urosigalphus*) *confusor* Gibson, 1972. Ent. Soc. Amer., Misc. Pub. 8: 106. ♀, ♂.

crassisculptus Cushman. Pa., Mich., Wis., Ill. Host: *Curculio neocorylus* Gibson.

Urosigalphus crassisculptus Cushman, 1922. U. S. Natl. Mus., Proc. 60 (21): 23. ♂.

curculionis Gibson. Que. s. to N. C., w. to Wis. and Ark. Host: *Curculio nasicus* (Say), *C. strictus* (Casey).

Urosigalphus (*Urosigalphus*) *curculionis* Gibson, 1972. Ent. Soc. Amer., Misc. Pub. 8: 108. ♀, ♂.

- donnae** Gibson. Conn. s. to Fla., w. to Wis. and Ark. Host: *Curculio proboscideus* F.
Urosigalphus (Urosigalphus) donnae Gibson, 1972. Ent. Soc. Amer., Misc. Pub. 8: 110. ♀, ♂.
- floridaensis** Gibson. Fla.
Urosigalphus (Urosigalphus) floridaensis Gibson, 1972. Ent. Soc. Amer., Misc. Pub. 8: 111. ♀.
- forbesi** Martin. Que. s. to Ga., w. to Wis. and Tex. Host: *Curculio* sp., *C. sulcatulus* (Casey).
Urosigalphus forbesi Martin, 1956. Canada Dept. Agr. Pub. 965, p. 118. ♀.
- muesebecki** Gibson. N. J., S. C., Ga., Ky., Tenn., Wis., Iowa, Ill. Host: *Curculio longidens* Chitt., *C. orthorhynchus* (Chitt.).
Urosigalphus (Urosigalphus) muesebecki Gibson, 1972. Ent. Soc. Amer., Misc. Pub. 8: 115. ♀, ♂.
- neoarmatus** Gibson. Colo.
Urosigalphus (Urosigalphus) neoarmatus Gibson, 1972. Ent. Soc. Amer., Misc. Pub. 8: 116. ♀.
- nigrescens** Martin. Ariz.
Urosigalphus nigrescens Martin, 1956. Canada Dept. Agr. Pub. 965, p. 115. ♂.
- pardus** Gibson. Calif. Host: *Curculio pardus* Chitt.
Urosigalphus (Urosigalphus) pardus Gibson, 1972. Ent. Soc. Amer., Misc. Pub. 8: 119. ♀, ♂.
- rubidus** Gibson. W. Va.
Urosigalphus (Urosigalphus) rubidus Gibson, 1972. Ent. Soc. Amer., Misc. Pub. 8: 119. ♀.
- rufus** Gibson. Ala. Host: *Curculio* sp.
Urosigalphus (Urosigalphus) rufus Gibson, 1972. Ent. Soc. Amer., Misc. Pub. 8: 120. ♀.
- subtropicus** Gibson. Ga., Fla., Miss., N. Mex. Host: *Curculio sulcatulus* (Casey).
Urosigalphus (Urosigalphus) subtropicus Gibson, 1972. Ent. Soc. Amer., Misc. Pub. 8: 121. ♀, ♂.

TRIBE ORGILINI

Species in this group are internal parasites of lepidopterous larvae.

Taxonomy: Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 1-2 (key to genera of subfamily Orgilinae).

Genus CHARMON Haliday

Charmon Haliday, 1833. Ent. Mag. 1: 262.

Type-species: *Charmon cruentatus* Haliday. Monotypic.

Provancheria Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 109.

Type-species: *Eubadizon gracilis* Provancher. Orig. desig.

Taxonomy: Mason, 1974. Ent. Soc. Wash., Proc. 76: 235-245.

extensor (Linnaeus). Holarctic. Host: *Ancyliis comptana fragariae* (W. and R.), *Choristoneura murinana* (Hbn.), *Depressaria pastinacella* (Dup.), *Epinotia lindana* (Fern.), *E. nigricana* (H.-S.), *E. pusillana* Peyer., *Grapholitha molesta* (Busck), *Laspeyresia pomonella* (L.), *Spilonota lariciana* Heinemann, *Zeiraphera griseana* (Hbn.), *Z. rufimitrana* (H.-S.).

Ichneumon extensor Linnaeus, 1758. Syst. Nat., Ed. 10, p. 564.

Charmon cruentatus Haliday, 1833. Ent. Mag. 1: 262.

Eubadizon pectoralis Nees, 1834. Hym. Ichn. Aff. Monog., v. 1, p. 236. ♀.

Eubadizon pleuralis Cresson, 1872. Canad. Ent. 4: 230. ♀, ♂.

Biology: Capek, 1956. Biologia 11: 602. — Allen, 1962. U. S. Dept. Agr., Tech. Bul. 1265, p. 27-29.

gracilis (Provancher). Canada, Maine, N. H., Mass., Wis., Minn., Oreg., Calif. Host: *Acleris variana* (Fern.), *Archips* sp., *Choristoneura fumiferana* (Clem.), *Coleotechnites*

apictripunctella (Clem.), *C. milleri* (Busch), *C. piceaella* Kearf., *C. starki* (Freem.),
Dioryctria reniculella (Grote), *Eucordylea ducharme* Freem.
Eubadizon gracilis Provancher, 1880. Nat. Canad. 12. 171. ♀.

Genus MICROTYPUS Ratzeburg

Microtypus Ratzeburg, 1848. Ichn. d. Forstins., v. 2, p. 47.

Type-species: *Microtypus wesmaelii* Ratzeburg. Monotypic.

Taxonomy: Shenefelt, 1970. Hym. Cat., part 5, p. 264-266 (cat. World spp.).

dioryctriae Rohwer. Calif. Host: *Dioryctria auranticella* (Grote).

Microtypus dioryctriae Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 227. ♀, ♂.

Genus ORGILUS Haliday

Orgilus Haliday, 1833. Ent. Mag. 1: 262.

Type-species: *Microdus obscurator* Nees. Monotypic.

Ischius Wesmael, 1837. Nouv. Mem. Acad. Sci. Bruxelles 10: 20.

Type-species: *Microdus obscurator* Nees. Desig. by Muesebeck and Walkley, 1951.

Macropalpus Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 56.

Type-species: *Eubadizon leptcephalus* Hartig. Monotypic.

Oresimus Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 123.

Type-species: *Eubadizon maculiventris* Cresson. Monotypic.

Orgilomorpha Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 129.

Type-species: *Ganychorus gelechia* Ashmead. Monotypic.

Orgilus subg. *Ischiolus* Hellen, 1958. Soc. Fauna Flora Fennica. Fauna Fennica 4, p. 34.

Type-species: *Microgaster rugosus* Nees. Monotypic.

Species are endoparasites of lepidopterous larvae.

Revision: Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, 104 p. (No. Amer. spp.).

Taxonomy: Shenefelt, 1970. Hym. Cat., part 5, p. 252-263 (cat. World spp.).

ablus Muesebeck. Ont., Minn.

Orgilus ablus Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 11. ♀.

absonus Muesebeck. Nev., Calif.

Orgilus absonus Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 12. ♀, ♂.

agrestis Muesebeck. Alta., Oreg.

Orgilus agrestis Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 13. ♀.

alacer Muesebeck. Nebr., Colo.

Orgilus alacer Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 13. ♀.

anthracinus Muesebeck. Que., N. W. T., B. C.

Orgilus anthracinus Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 14. ♀, ♂.

arcticus Muesebeck. Labrador, Yukon.

Orgilus arcticus Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 15. ♀, ♂.

balsameae Muesebeck. Que., N. S., N. B., Maine, N. Y., W. Va., Ont., Mich., Wis. Host:

Coleotechnites sp., *C. piceaella* (Kearf.), *Evagora* sp., *Zeiraphera* sp.

Orgilus balsameae Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 17. ♀, ♂.

boharti Muesebeck. Calif. Host: *Crambus* sp.

Orgilus boharti Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 17. ♀, ♂.

buccatus Muesebeck. N. Y.

Orgilus buccatus Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 18. ♀.

burksi Muesebeck. N. C.

Orgilus burksi Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 18. ♀.

californicus (Provancher). Calif. Host: *Phthorimaea operculella* (Zell.).

Eubadizon californicus Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 383.
 ♀.

capsicola Muesebeck. Tex. Host: *Symmetrischema capsicum* (B. and P.).

Orgilus capsicola Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 20. ♀, ♂.

- cerinus* Muesebeck. Ariz.
Orgilus cerinus Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 21. ♀.
- cinctus* Muesebeck. Mass., N. Y.
Orgilus cinctus Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 21. ♀.
- citus* Muesebeck. Que., Labrador, Ont., N. Dak.
Orgilus citus Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 22. ♀, ♂.
- clivicola* Muesebeck. Colo.
Orgilus clivicola Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 23. ♀.
- cognatus* Muesebeck. Utah.
Orgilus cognatus Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 24. ♀.
- coleophorae* Muesebeck. Que. and N. S. s. to Va., w. to Ont. and Iowa; Alaska. Host:
Coleophora cretaticostella Clem., *C. fuscicinctella* Zell., *C. laricella* Hbn., *C. monardella* McD., *C. ulmifoliella* McD., *C. umbratica* Braun, *Coleotechnites thujaella* Kearf.
Orgilus coleophorae Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 24. ♀, ♂.
- coloradensis* Muesebeck. Colo.
Orgilus coloradensis Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 25. ♀, ♂.
- compactus* Muesebeck. Oreg.
Orgilus compactus Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 26. ♀.
- comptanae* Muesebeck. Que. s. to Fla.; Ill., Miss. Host: *Ancylys comptana* (Froel.).
Orgilus comptanae Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 27. ♀, ♂.
- conflictanae* Muesebeck. Colo. Host: *Choristoneura conflictana* (Wlkr.).
Orgilus conflictanae Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 28. ♀.
- consuetus* Muesebeck. Md., W. Va., N. C., Fla., Ont., Mich., Wis., Ill., La., N. Dak. Host:
Laspeyresia caryana (Fitch), *Valentinia glandulella* (Riley).
Orgilus consuetus Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 28. ♀.
- coracinus* Muesebeck. Calif.
Orgilus coracinus Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 29. ♀.
- cristatus* Muesebeck. Calif.
Orgilus cristatus Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 30. ♀.
- cuneatus* (Provancher). Que.
Blacus cuneatus Provancher, 1888. *Addit. Corr. Faune Ent. Canada Hym.*, p. 383. ♀.
- detectiformis* Viereck. Que. and N. B. s. to Ga., w. to Ont., S. Dak., and Iowa. Host: *Crambus trisectus* (Wlkr.).
Orgilus detectiformis Viereck, 1917 (1916). *Conn. State Geol. and Nat. Hist. Survey, Bul.* 22, p. 226. ♂.
- detectus* Provancher. Que.
Orgilus detectus Provancher, 1886. *Addit. Corr. Faune Ent. Canada Hym.*, p. 139. ♀.
- dioryctriae* Gahan. Colo., Calif. Host: *Choristoneura lambertiana ponderosana* Obraz., *Coleotechnites milleri* (Busck), *Dioryctria auranticella* (Grote).
Orgilus dioryctriae Gahan, 1919. *U. S. Natl. Mus., Proc.* 55: 121. ♀, ♂.
- discrepans* Muesebeck. Ariz.
Orgilus discrepans Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 34. ♀, ♂.
- disparilis* Muesebeck. Conn., D. C., Fla.
Orgilus disparilis Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 35. ♀, ♂.
- dissidens* Muesebeck. Maine, N. Y., Ont.
Orgilus dissidens Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 35. ♀.
- dolosus* Muesebeck. Ont.
Orgilus dolosus Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 36. ♀.
- dreisbachi* Muesebeck. Nebr., Okla., Ariz.
Orgilus dreisbachi Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 37. ♀, ♂.
- ejuncidus* Muesebeck. Maine.
Orgilus ejuncidus Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 38. ♀.

- elasmopalpi** Muesebeck. N. C., S. C., Ga., Fla., Okla., Tex.; Jamaica. Host: *Diatraea saccharalis* (F.), *Elasmopalpus lignosellus* Zell.
Orgilus elasmopalpi Muesebeck, 1970. Smithsn. Contrib. Zool. n. 30, p. 38. ♀.
- erythropus** Muesebeck. Utah.
Orgilus erythropus Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 39. ♀.
- exilis** Muesebeck. Oreg.
Orgilus exilis Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 40. ♀.
- fallax** Muesebeck. Calif.
Orgilus fallax Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 41. ♀.
- femoralis** Muesebeck. N. Dak., Colo., Idaho.
Orgilus femoralis Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 42. ♀.
- ferus** Muesebeck. Mont., N. Mex., Idaho, Utah, Wash., Calif. Host: *Aroga websteri* Clarke.
Orgilus ferus Muesebeck, 1970. Smithsn. Contrib. Zool. n. 30, p. 42. ♀, ♂.
- fictus** Muesebeck. Pa., Mich.
Orgilus fictus Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 43. ♀.
- fisheri** Muesebeck. Conn.
Orgilus fisheri Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 44. ♀.
- frigidus** Muesebeck. N. W. T.
Orgilus frigidus Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 45. ♀.
- fulgens** Muesebeck. Md., Mich.
Orgilus fulgens Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 45. ♂.
- gelechiae** (Ashmead). Que. and N. S. s. to Fla., w. to Ont. and Tex. Host: *Bucculatrix* sp., *Caloptilia* sp., *Cameraria hamadryadella* (Clem.), *Evippe prunifoliella* Chamb., *Lithocolletis* sp., *L. cincinnatiella* Chamb.
Ganychorus? *gelechiae* Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 645. ♀.
Eubadizon lithocolletidis Viereck, 1912. U. S. Natl. Mus., Proc. 42: 622. ♀.
- gelechiaeovorus** Cushman. N. J., Va., Fla., Ky., Ala., Iowa, Ark., Tex. Host: *Aroga triabanaculella* (Chamb.), *Grapholitha molesta* (Busck), *Laspeyresia caryana* (Fitch).
Orgilus gelechiaevora Cushman, 1920. U. S. Natl. Mus., Proc. 58: 291. ♀.
- glacialis** Muesebeck. Alaska.
Orgilus glacialis Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 48. ♀.
- gracilis** (Brues). Man., Minn., N. Dak.
Blacus gracilis Brues, 1908. Wis. Nat. Hist. Soc., Bul. 6: 55. ♀.
- gramineus** Muesebeck. Alta.
Orgilus gramineus Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 49. ♀.
- grapholithae** Muesebeck. Oreg. Host: *Grapholitha conversana* Wlsm.
Orgilus grapholithae Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 50. ♀, ♂.
- hyalinus** Muesebeck. Alta.
Orgilus hyalinus Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 51. ♂.
- imitator** Muesebeck. Tex., Oreg., Calif.; Mexico.
Orgilus imitator Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 52. ♀, ♂.
- immarginatus** Muesebeck. Ill., Fla., Miss. Host: *Acrobasis juglandis* (LeB.), *Gretchena bolliana* (Sling.), *Laspeyresia caryana* (Fitch).
Orgilus immarginatus Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 52. ♀, ♂.
- impiger** Muesebeck. Idaho, Utah, Nev., Calif.
Orgilus impiger Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 53. ♀.
- indagator** Muesebeck. Que., Mich., Ind., Minn., Iowa. Host: *Trichotaphe levisella* Fyles.
Orgilus indagator Muesebeck, 1967. Ent. News 78: 135. ♀, ♂.
- infrequens** Muesebeck. Mass., Va., Fla., Tex.
Orgilus infrequens Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 54. ♀.
- inopinus** Muesebeck. Iowa, Ark., N. Dak.
Orgilus inopinus Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 55. ♀, ♂.
- insularis** Muesebeck. P. E. I., Ont.
Orgilus insularis Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 55. ♀.

intermedius Muesebeck. Md., Va., Iowa.

Orgilus intermedius Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 56. ♀, ♂.

invictus Muesebeck. Labrador.

Orgilus invictus Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 57. ♀.

laeviventris (Cresson). Tex.

Ischnus laeviventris Cresson, 1872. *Amer. Ent. Soc., Trans.* 4: 182. ♂.

lateralis (Cresson). Que. s. to Fla., w. to Ont. and Tex.; Ariz., Calif.; Mexico. Host: *Acrobasis*

caryae Grote, *A. comptoniella* Hulst, *A. indigenella* (Zell.), *A. juglandis* (LeB.), *Choristoneura fumiferana* (Clem.), *Coleotechnites juniperella* (Kearf.), *C. mackiei* (Keifer), *C. piceaella* (Kearf.), *C. thujaella* Kearf., *Coleophora* sp., *C. laticornella* Clem., *C. ulmifoliella* McD., *Mompha* sp., *Nephoterix subfuscella* (Rag.), *Petrova albicapitana* Busck.

Eubadizon lateralis Cresson, 1872. *Canad. Ent.* 4: 229. ♂.

Orgilus kearfotti Ashmead, 1903. *N. Y. Ent. Soc., Jour.* 11: 144. ♂.

Biology: Nickels, Pierce and Pinkney, 1950. *U. S. Dept. Agr., Tech. Bul.* 1011, p. 12 (as

Orgilus maculiventris).

lautus Muesebeck. Mich.

Orgilus lautus Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 59. ♀.

lepidus Muesebeck. Calif. (?); Argentina, Uruguay. Liberated in Calif. but not known to be established. Introduced from Argentina and Uruguay. Host: *Phthorimaea operculella* (Zell.).

Orgilus lepidus Muesebeck, 1967. *Ent. Soc. Wash., Proc.* 69: 177. ♀, ♂.

Biology: Oatman, Platner and Greany, 1969. *Ent. Soc. Amer., Ann.* 62: 1407-1414. —Greany and Oatman, 1972. *Ent. Soc. Amer., Ann.* 65: 375-383.

levis Muesebeck. Fla.

Orgilus levis Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 60. ♂.

lissus Muesebeck. Calif.

Orgilus lissus Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 61. ♀.

longiceps Muesebeck. East. U. S. (?); Japan. Liberated in eastern U. S. but not known to be established. Introduced from Japan. Host: *Grapholitha molesta* Busck.

Orgilus longiceps Muesebeck, 1933. *Ent. Soc. Wash., Proc.* 35: 52. ♀, ♂.

lunaris Muesebeck. Idaho, Calif.

Orgilus lunaris Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 61. ♀.

macrurus Muesebeck. Que., N. Y., Md., W. Va., Va., Ont., Colo.

Orgilus macrurus Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 62. ♀, ♂.

maculiventris (Cresson). Mass., Va., Fla., La., Tex. Host: *Antaeotricha humilis* (Zell.).

Eubadizon maculiventris Cresson, 1872. *Amer. Ent. Soc., Trans.* 4: 178. ♂.

medicaginis Muesebeck. Tex., N. Mex., Ariz., Calif.; Mexico.

Orgilus medicaginis Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 64. ♀, ♂.

melissopi Muesebeck. Oreg., Calif. Host: *Melissopus latiferranus* (Wlsm.).

Orgilus melissopi Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 65. ♀, ♂.

mellipes (Say). W. Va., Va., Fla., Mich., Ind., Ala., Ill., Mo., La. Host: *Keiferia inconspicuell* (Murtf.), *Phthorimaea operculella* (Zell.).

Microgaster mellipes Say, 1836. *Boston Jour. Nat. Hist.* 1: 261. ♂.

Eubadizon incognitus Ashmead, 1889 (1888). *U. S. Natl. Mus., Proc.* 11: 644. ♀.

mimicus Muesebeck. Calif.

Orgilus mimicus Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 67. ♀.

modicus Muesebeck. Ga., Fla., Ark., La., Okla., Tex. Host: *Stegasta bosquella* (Chamb.).

Orgilus modicus Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 68. ♀, ♂.

momphae Muesebeck. N. Y., Pa., N. J., Va., Ont., Mich., Ohio, Minn. Host: *Mompha eloisella* Clem.

Orgilus momphae Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 68. ♀, ♂.

monticola Muesebeck. Idaho.

Orgilus monticola Muesebeck, 1970. *Smithsn. Contrib. Zool.*, n. 30, p. 69. ♀.

morulus Muesebeck. Que.

Orgilus morulus Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 70. ♀.

mundus Muesebeck. Colo.

Orgilus mundus Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 71. ♀.

nitidus Muesebeck. Tex., Ariz. Host: *Elasmopalpus lignosellus* (Zell.).

Orgilus nitidus Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 72. ♀.

notabilis Muesebeck. Fla.

Orgilus notabilis Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 72. ♀.

obscurator (Nees). Que., Mass., R. I., Conn., N. Y., N. J., W. Va., Ont., Mich., Ohio. Introduced from Europe. Host: *Rhyacionia buoliana* (Schiff.).

Microdus obscurator Nees, 1814 (1812). Mag. Gesell. Naturf. Freunde Berlin 6: 186. ♀.

Eubadizon leptocephalus Hartig, 1838. Jahresber. Fortschr. Forstw. 1: 268. ♀, ♂.

Biology: Watson and Arthur, 1959. Canad. Ent. 91: 481. — Miller, 1960. Jour. Econ. Ent. 53: 318. — Juliet, 1960. Canad. Ent. 92: 342-346, 701-704. — Leius, 1960. Canad. Ent. 92: 371-375. — Dowden, 1962. U. S. Dept. Agr., Agr. Handb. 226, p. 62. — Syme and Green, 1972. Canad. Ent. 104: 523-530.

opacus Muesebeck. Ont., Pa., Va. Host: *Scythris* sp.

Orgilus opacus Muesebeck, 1970. Smithsn. Contrib. Zool. n. 30, p. 74. ♀, ♂.

oregonensis Muesebeck. Oreg.

Orgilus oregonensis Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 75. ♀.

parallelus Muesebeck. B. C., Ont., Kans., Tex.

Orgilus parallelus Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 76. ♀.

pedalis Muesebeck. Alta.

Orgilus pedalis Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 77. ♀.

persimilis Muesebeck. Idaho, Calif.

Orgilus persimilis Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 77. ♀, ♂.

politus Muesebeck. Nebr., Kans.

Orgilus politus Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 78. ♀.

pratensis Muesebeck. N. Dak., Alta.

Orgilus pratensis Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 79. ♀.

prolixus Muesebeck. Ont.

Orgilus prolixus Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 80. ♀.

proprius Muesebeck. Ga.

Orgilus proprius Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 80. ♀.

pumilus Muesebeck. S. C.

Orgilus pumilus Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 81. ♀.

rasilis Muesebeck. Ariz.

Orgilus rasilis Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 82. ♀.

rostratus Muesebeck. Md., Ohio, Wyo., Colo.

Orgilus rostratus Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 82. ♀, ♂.

scaber Muesebeck. N. B., Que., Ont., B. C., Wash., Oreg. Host: *Coleophora serratella* (L.).

Orgilus scaber Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 83. ♀, ♂.

simulator Muesebeck. Mich.

Orgilus simulator Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 84. ♀.

solidus Muesebeck. Ont.

Orgilus solidus Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 85. ♀.

striatus Muesebeck. Calif.

Orgilus striatus Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 86. ♀.

strigosus Muesebeck. Wash., Calif.

Orgilus strigosus Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 86. ♀.

tenuis Muesebeck. Md.

Orgilus tenuis Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 87. ♀.

tersus Muesebeck. S. C.

Orgilus tersus Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 88. ♀.

utahensis Muesebeck. Utah.

Orgilus utahensis Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 88. ♀.

validus Muesebeck. Utah.

Orgilus validus Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 89. ♀.

vallis Muesebeck. Calif.

Orgilus vallis Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 90. ♀, ♂.

walleyi Muesebeck. Que., N. Y., Ont., Mich., Okla. Host: *Stegasta bosqueella* (Chamb.).

Orgilus walleyi Muesebeck, 1970. Smithsn. Contrib. Zool. n. 30, p. 91. ♀, ♂.

zonalis Muesebeck. Ind. Host: *Aristotelia absconditella* (Wlkr.).

Orgilus zonalis Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 92. ♀, ♂.

Genus STANTONIA Ashmead

Stantonina Ashmead, 1904. U. S. Natl. Mus., Proc. 28: 146.

Type-species: *Stantonina flava* Ashmead. Monotypic.

Mimagathis Enderlein, 1905. Zool. Anz. 28: 450.

Type-species: *Mimagathis ashmeadi* Enderlein. Desig. by Viereck, 1914.

Taxonomy: Muesebeck, 1970. Smithsn. Contrib. Zool., n. 30, p. 1. —Shenefelt, 1970. Hym.

Cat., part 5, p. 263-264, 266-268 (cat. World spp.).

carpocapsae Muesebeck. Va., N. C., Ky., Tex. Host: *Desmia funeralis* (Hbn.), *Eustixia pupula* Hbn., *Harrisina americana* (Guer.), *Laspeyresia pomonella* (L.).

Stantonina carpocapsae Muesebeck, 1938. Ent. Soc. Wash., Proc. 40: 90. ♀.

UNPLACED TAXON OF BLACINAE

Blacus(?) *longicaudus* Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 133. ♀.

SUBFAMILY NEONEURINAE

Species in this small group are internal parasites of ants and are rarely collected.

Revision: Muesebeck, 1922. U. S. Natl. Mus., Proc. 61 (15): 3-6 (No. Amer. spp.).

Genus ELASMOSOMA Ruthe

Elasmosoma Ruthe, 1858. Berlin. Ent. Ztschr. 2: 7.

Type-species: *Elasmosoma berlinensa* Ruthe. Monotypic.

Paramirax Ashmead, 1895. Ent. Soc. Wash., Proc. 3: 281.

Type-species: *Paramirax schwarzi* Ashmead. Monotypic.

Revision: Huddleston, 1976. Mus. Natl. Hung., Ann. Hist.-Nat. 68: 215-225.

bakeri Ashmead. Va., Iowa, Colo., N. Mex., Idaho, Calif.

Elasmosoma bakeri Ashmead, 1895. Ent. Soc. Wash., Proc. 3: 282. ♂.

pergandei Ashmead. Ont. s. to D. C.; N. Dak., Kans., Colo., Wash.; Mongolia. Host:

Camponotus castaneus (Latr.), *Formica integra* Nyl., *F. subsericea* Say.

Elasmosoma pergandei Ashmead, 1895. Ent. Soc. Wash., Proc. 3: 283. ♀.

petulans Muesebeck. Md., Ohio, Wyo. Host: *Formica rubicunda* Emery.

Elasmosoma petulans Muesebeck, 1941. Brooklyn Ent. Soc., Bul. 36: 200. ♀.

schwarzi (Ashmead). Pa., Md., D. C., Ga., Ind. Host: *Formica schaufussi* Mayr, *Polyergus lucidus* Mayr.

Paramirax schwarzi Ashmead, 1895. Ent. Soc. Wash., Proc. 3: 283. ♀.

vigilans Cockerell. Wis., Colo. Host: *Formica subpolita* Mayr.

Elasmosoma vigilans Cockerell, 1909. Ent. Soc. Wash., Proc. 10: 168. ♀.

Genus NEONEURUS Haliday

Neoneurus Haliday, 1838. Ent. Mag. 5: 213. No species included.

Type-species: *Neoneurus halidaii* Marshall. Subsequent monotypy. First included species by Marshall, 1897. Ent. Mon. Mag. 8: 149.

Ecclites Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 244.

Type-species: *Ecclites clypeatus* Foerster. Orig. desig.

One undescribed species occurs in North America.

SUBFAMILY EUPHORINAE

This is the most specialized group of the Braconidae. Although the adult and larval morphology is rather homogenous, the subfamily can be divided into two groups from the viewpoint of biology: the Meteorini, most of which are parasites of lepidopterous larvae, and the Euphorini and Cosmophorini, which are parasites of nymphs and adult insects of various orders. Tobias (1965, 1966) has studied this group and included several other subfamilies and genera. However, his arrangement apparently groups together some rather unrelated elements and is, therefore, not followed in this catalog.

Revision: Muesebeck, 1936. U. S. Dept. Agr., Misc. Pub. 241, 38 p. (World genera, No. Amer. spp.).

Taxonomy: Tobias, 1965. Ent. Obozr. 44: 841-865. — Tobias, 1966. Ent. Obozr. 45: 612-633 (key to World genera). — Shenefelt, 1969. Hym. Cat., part 4, p. 4-137 (cat. World spp.).

TRIBE METEORINI

Genus METEORUS Haliday

Perilitus subg. *Meteorus* Haliday, 1835. Ent. Mag. 3: 24.

Type-species: *Ichneumon pendulator* Latreille. Desig. by Westwood, 1839.

Protelus Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 253.

Type-species: *Bracon chrysophthalmus* Nees. Orig. desig.

Saprotichus Holmgren, 1868. Eug. Resa I, Zool. I, Ins., p. 430.

Type-species: *Saprotichus chinensis* Holmgren. Desig. by Viereck, 1914.

Pachythecus Cameron, 1912. Soc. Ent. 27: 84.

Type-species: *Pachythecus ruficeps* Cameron. Desig. by Viereck, 1914.

Most species are endoparasites of larvae of Lepidoptera, but a few parasitize larvae of Coleoptera.

Revision: Muesebeck, 1923. U. S. Natl. Mus., Proc. 63: 1-44 (No. Amer. spp.).

Taxonomy: Tobias, 1966. Ent. Obozr. 45: 615-617. — Shenefelt, 1969. Hym. Cat., part 4, p. 48-101 (cat. World spp.).

acronyctae Muesebeck. Colo., N. Mex., Utah, Ariz. Host: *Acrionicta* sp., *Halisdota* sp., *H. ingens* Hy. Edw., *Hyphantria cunea* (Drury).

Meteorus acronyctae Muesebeck, 1923. U. S. Natl. Mus., Proc. 63: 35. ♀, ♂.

angustipennis Muesebeck. Mass., Conn., N. Y., Pa., N. J., Md., W. Va., Ohio, Tenn., Iowa.

Meteorus angustipennis Muesebeck, 1923. U. S. Natl. Mus., Proc. 63: 19. ♀, ♂.

argyrotaeniae Johansen. Conn., Wis., N. Mex., B. C., Wash., Oreg., Calif., Alaska. Host: *Acleris gloverana* (Wlsm.), *A. variana* (Fern.), *Archips argyrospilus* (Wlkr.), *Argyrotaenia citrana* (Fern.), *Spilonota ocellana* (D. and S.).

Meteorus argyrotaeniae Johansen, 1949. Ent. Soc. Amer., Ann. 42: 319. ♀.

arizonensis Muesebeck. N. Mex., Ariz.

Meteorus arizonensis Muesebeck, 1923. U. S. Natl. Mus., Proc. 63: 34. ♀, ♂.

autographae Muesebeck. Newfoundland s. to Fla., w. to Wis. and La. Host: *Acleris variana*

(Fern.), *Agrotis ipsilon* (Hufn.), *Alsophila pomataria* (Harr.), *Anticarsia gemmatilis* Hbn., *Autographa* sp., *A. biloba* (Steph.), *Autoplusia egea* (Guen.), *Colias eurythema* Bdl., *Evergestis stramminalis* Hbn., *Heliothis zea* (Boddie), *Orgyia leucostigma* (Sm.), *Peridroma saucia* (Hbn.), *Plathypena scabra* (F.), *Pseudaletia unipuncta* (Haw.), *Pseudoplusia includens* (Wlkr.), *Spodoptera eridania* (Cram.), *S. exiqua* (Hbn.), *S. frugiperda* (Sm.), *S. ornithogalli* (Guen.), *Trichoplusia ni* (Hbn.), *Udea rubigalis* (Guen.).

Meteorus autographae Muesebeck, 1923. U. S. Natl. Mus., Proc. 63: 30. ♀, ♂.

bakeri Cook and Davis. N. B. s. to N. C., w. to Sask. and Utah; Wash. Host: *Dasychira plagiata* (Wlkr.), *Halisdota argentata* Pack., *Hyphantria cunea* (Drury), *H. textor* (Harr.).

Meteorus bakeri Cook and Davis, 1891. Mich. Agr. Expt. Sta., Bul. 73: 9. ♂.

- betulini** Mason. Que., Pa., Md., Mich., Man. Host: *Orchesia* sp.
Meteorus betulini Mason, 1968. Canad. Ent. 100: 717. ♀, ♂.
- campestris** Viereck. U. S. and Canada. Host: *Dioryctria reniculella* (Grote), *Loxostege commixtalis* (Wlkr.), *L. sticticalis* (L.), *Ostrinia nubilalis* (Hbn.), *O. penitalis* (Grote), *Phlyctaenia coronata tertialis* (Guen.), *Pyrausta nubilalis* (Led.), *Sparganothis saracana* Kearf.
Meteorus campestris Viereck, 1905. Kans. Acad. Sci., Trans. 19: 281. ♀.
Meteorus loxostegei Viereck, 1911. U. S. Natl. Mus., Proc. 39: 401. ♂.
- Biology: Simmonds, 1947. Bul. Ent. Res. 38: 373-379.
- cingiliae** Muesebeck. N. B., Maine, N. H., Mass., R. I., N. Y., Ont. Host: *Cingilia catenaria* (Drury).
Meteorus cingiliae Muesebeck, 1926. U. S. Natl. Mus., Proc. 69: 3. ♀, ♂.
- clinophthalmicus** Shenefelt. Wis.
Meteorus clinophthalmicus Shenefelt, 1961. Ent. Soc. Wash., Proc. 63: 276. ♀, ♂.
- cognatus** Muesebeck. Que., Mich., Calif.
Meteorus cognatus Muesebeck, 1939. Ent. Soc. Wash., Proc. 41: 84. ♀.
- communis** (Cresson). North. U. S. s. to N. C., Colo. and Calif.; Canada; Alaska. Host: *Amphipyra pyramidoides* Gn., *Dargida procincta* (Grote), *Eupsilia sidus* (Gn.), *Grapholitha* sp., *Lithophane bethunei* (G. and R.), *L. laticinerea* Grote, *Malacosoma americanum* (F.), *Orthosia hibisci* (Gn.), *O. revicta* (Morr.), *Pseudaletia unipuncta* (Haw.).
Perilitus communis Cresson, 1872. Canad. Ent. 4: 82. ♀, ♂.
Perilitus intermedius Cresson, 1872. Canad. Ent. 4: 82. ♀.
Meteorus petiolariferus Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 223. ♂.
Meteorus pretiosus Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22, p. 223. ♂.
- datanae** Muesebeck. Maine, Mass., Conn., Pa., N. J., N. C. Host: *Datana angustii* G. and R., *D. integerrima* G. and R., *D. ministra* (Drury).
Meteorus datanae Muesebeck, 1923. U. S. Natl. Mus., Proc. 63: 38. ♀.
- dimidiatus** (Cresson). U. S. and Canada. Host: *Desmia funeralis* (Hbn.), *Epizeuxis* sp., *Platynota flavedana* Clem., *P. idaeusalis* (Wlkr.), *P. stultana* Wlsm., *Xenotemna pallorana* (Rob.).
Perilitus dimidiatus Cresson, 1872. Canad. Ent. 4: 83. ♀, ♂.
Meteorus noctivagus Viereck, 1905. Kans. Acad. Sci., Trans. 19: 281. ♀.
- euschausiae** Muesebeck. Colo., N. Mex., Ariz., Wash.; Mexico. Host: *Halisidota argentata* Pack., *H. ingens* Hy. Edw.
Meteorus euschausiae Muesebeck, 1923. U. S. Natl. Mus., Proc. 63: 37. ♀, ♂.
- fumipennis** Muesebeck. Ark., Ariz., B. C., Wash., Calif.
Meteorus fumipennis Muesebeck, 1923. U. S. Natl. Mus., Proc. 63: 20. ♀.
- hicoriae** Muesebeck. Pa., Ohio.
Meteorus hicoriae Muesebeck, 1923. U. S. Natl. Mus., Proc. 63: 25. ♀.
- humilis** (Cresson). South. Canada and north. U. S. s. to Va. and N. Mex. Host: *Nemapogon granellus* (L.), *Nemapogon oregonellus* (Busck), *Orchesia castanea* Melsh., *Platydemia ellipticum* (F.).
Perilitus humilis Cresson, 1872. Canad. Ent. 4: 84. ♀.
Perilitus robustus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 125. ♀.
Meteorus orchesiae Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 643. ♀, ♂.
Meteorus agilis Viereck, 1903. Amer. Ent. Soc., Trans. 29: 94. ♀, ♂.
- hyphantriae** Riley. U. S. and Canada; Mexico. Host: *Acronicta* sp., *Alsophila pometaria* (Harr.), *Caenurgina erechtea* (Cram.), *Dasychira plagiata* (Wlkr.), *Faronta diffusa* (Wlkr.), *Halisidota argentata* Pack., *Hemileuca maia* (Drury), *Hyphantria cunea* (Drury), *Hypsoropha hormos* Hbn., *Malacosoma americanum* (F.), *M. dissidia* Hbn., *Nepytia canosaria* (Wlkr.), *Olethreutes* sp., *Orygia leucostigma* (Sm.), *O. pseudotsugata* McD., *Paleacrita vernata* (Peck), *Perispasta caeculalis* Zell., *Thymelicus lineola* Ochs.
Meteorus hyphantriae Riley, 1887. U. S. Dept. Agr. Ann. Rpt. for 1886, p. 532. ♀, ♂.

- Meteorus oecopsidis* Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 642. ♂.
Meteorus floridanus Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 642. ♂.
Meteorus relativus Viereck, 1905. Kans. Acad. Sci., Trans. 19: 280. ♂.
Meteorus triangularis Muesebeck, 1919. Canad. Ent. 51: 115. ♀, ♂.
- hypophloeus** Cushman. N. C., Ga., Fla., Miss., La., Tex., Wis., Mont., Wyo., N. Mex., Idaho, Wash., Calif. Host: *Corticteus* sp., *C. parallelus* (Melsh.), *Dendroctonus frontalis* Zimm., *D. ponderosae* Hopk.
Meteorus hypophloeus Cushman, 1931. Wash. Acad. Sci., Jour. 21: 302. ♀, ♂.
- Biology: DeLeon, 1933. Brooklyn Ent. Soc., Bul. 28: 32-36.
- indagator** (Riley). N. B. s. to Fla., w. to Ont., S. Dak., and Tex.; Calif. Host: *Acrobasis betulella* Hulst, *A. caryae* Grote, *A. caryivorella* Rag., *A. comptoniella* Hulst, *A. corytiella* Dyar, *A. indigenella* (Zell.), *A. juglandis* (LeB.), *A. kearfottella* Dyar, *A. minimella* Rag., *A. rubrifasciella* Pack., *A. sylviiella* Ely, *Diorctetria auranticella* (Grote), *D. disclusa* Hein., *Omphalocera dentosa* Grote, *Tetralopha militella* Zell., *T. platenella* Clem., *T. subcanalis* (Wlkr.).
Perilitus indagator Riley, 1872. Ins. Mo. Ann. Rpt. 4: 43. ♀.
- Biology: Balduf, 1968. Ent. Soc. Amer., Ann. 61: 465-466.
- japonicus** Ashmead. New England (?); Japan, China, N. Afr. Liberated in New England but not known to be established. Introduced from Japan. Host: *Lymantria dispar* (L.).
Meteorus japonicus Ashmead, 1906. U. S. Natl. Mus., Proc. 30: 190. ♀.
Meteorus nipponensis Viereck, 1912. U. S. Natl. Mus., Proc. 42: 624. ♀.
- islandicus** (Ruthe). Greenland, N. W. T. Ecology: Occurs in arctic regions.
Perilitus islandicus Ruthe, 1859. Stettin. Ent. Ztg. 20: 317. ♀, ♂.
- laphygmae** Viereck. Tex., N. Mex.; Mexico, Cent. Amer., north. So. Amer. Host: *Autographa* sp., *Colias eurythene* Bdv., *Elaphria nucicolora* (Guen.), *Feltia subterranea* (F.), *Heliothis zea* (Boddie), *Leucania latiuscula* H.-S., *Peridroma saucia* (Hbn.), *Pseudaletia unipuncta* (Haw.), *Semiothisa punctolineata* (Pack.), *Spodoptera eridania* (Cram.), *S. exigua* (Hbn.), *S. frugiperda* (Sm.).
Meteorus laphygmae Viereck, 1913. U. S. Natl. Mus., Proc. 44: 560. ♀, ♂.
- leviventris** (Wesmael). Holarctic, Neotropical. Host: *Agrotis gladiaria* Morr., *A. ipsilon* (Hufn.), *A. malefida* Guen., *A. orthogonia* Morr., *Autographa californica* (Spey.), *Autoplusia egea* (Gn.), *Colias eurythene* Bdv., *Euxoa auxiliaris agrestis* (Grote), *E. excellens* (Grote), *E. messoria* (Harr.), *E. ochrogaster* (G.), *Feltia ducens* Walkr., *F. subterranea* (F.), *Hellula undalis* (F.), *Peridroma saucia* (Hbn.), *Scotogramma trifolii* (Rott.), *Spodoptera frugiperda* (Sm.).
Perilitus leviventris Wesmael, 1835. Nouv. Mem. Acad. Sci. Bruxelles 9: 46. ♀.
Perilitus vulgaris Cresson, 1872. Canad. Ent. 4: 83. ♀, ♂.
Meteorus coquilletti Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 642. ♂.
Meteorus mellinervis Viereck, 1903. Amer. Ent. Soc., Trans. 29: 95. ♀.
Meteorus mamestrae Viereck, 1913. U. S. Natl. Mus., Proc. 46: 364. ♀, ♂.
- pinifolii** Mason. Que., Alta., B. C., Calif. Host: *Coleotechnites milleri* (Busck), *C. piceaella* (Kearf.), *C. starki* (Freem.), *Zeiraphera canadensis* M. and F.
Meteorus pinifolii Mason, 1960. Canad. Ent. 92: 143. ♀, ♂.
- politus** (Provancher). N. S. s. to Md., w. to B. C., Idaho, and Colo.
Perilitus politus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 126. ♀, ♂.
- provancheri** Dalla Torre. Que.
Perilitus gracilis Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 125. ♀.
 Preocc. by Ratzeburg, 1852.
Meteorus provancheri Dalla Torre, 1898. Cat. Hym., v. 6, p. 112. N. name for *gracilis* Provancher.
- proximus** (Cresson). Mass., Conn., N. Y., N. J., Ont., Mich., Wis., Ill., Minn., N. Dak.
Perilitus proximus Cresson, 1872. Canad. Ent. 4: 83. ♂.
Meteorus exareolatus Viereck, 1917 (1916). Conn. State Geol. Nat. Hist. Survey, Bul. 22: 224. ♂.

- pulchricornis** (Wesmael). New England (?); Europe, N. Afr. Liberated in New England but not known to be established. Introduced from France. Host: *Lymantria dispar* (L.).
Perilitus pulchricornis Wesmael, 1835. Nouv. Mem. Acad. Sci. Bruxelles 9: 42. ♀, ♂.
- ruficeps** (Nees). Que. (?), Ont. (?); Europe. Liberated in Que. and Ont. but not known to be established. Introduced from Europe. Host: *Choristoneura fumiferana* (Clem.).
Perilitus ruficeps Nees, 1834. Hym. Ichn. Aff. Monog., v. 1, p. 39. ♀, ♂.
- tauricornis** (Provancher). Labrador s. to Md., w. to Ont. and Iowa; Fla., Tenn., Colo., Alaska.
Rhopalophorus tauricornis Provancher, 1880. Nat. Canad. 12: 168. ♀.
- terebratus** Muesebeck. Mich. Host: *Orchesia castanea* Melsh. Host record needs to be confirmed.
Meteorus terebratus Muesebeck, 1923. U. S. Natl. Mus., Proc. 63: 24. ♀, ♂.
- tersus** Muesebeck. Idaho, Calif. Host: *Amorbia essigana* Busck, *Orgyia pseudotsugata* McD., *O. vetusta gulosa* (Hy. Edw.), *Sabulodes caberata* (Gn.).
Meteorus tersus Muesebeck, 1956. Pan-Pac. Ent. 32: 25. ♀, ♂.
- Biology: Fleschner, Ricker and Johnson, 1957. Calif. Avocado Soc., Ybk. 41: 115.
- tetralophae** Muesebeck. N. Y. s. to Fla., w. to Ont., Ind., and Iowa. Host: *Dioryctria disculsa* Heinr., *Psorosina hammondi* (Riley), *Tetralopha asperatella* (Clem.), *T. robustella* Zell., *T. subcanalis* (Wlkr.).
Meteorus tetralophae Muesebeck, 1926. U. S. Natl. Mus., Proc. 69: 2. ♀.
- tibialis** Muesebeck. Que., N. Y., Ga., Ont., Wis. Host: *Hyperplatys aspera* (Say).
Meteorus tibialis Muesebeck, 1923. U. S. Natl. Mus., Proc. 63: 23. ♀, ♂.
- trachynotus** Viereck. U. S. and Canada. Host: *Acleris longiana* (L.), *A. variana* (Fern.), *Ancylic* sp., *A. comptana fragaria* (W. and R.), *Archips argyrosipilus* (Wlkr.), *A. rosanus* (L.), *A. seniferanus* (Wlkr.), *Argyrotaenia citrana* (Fern.), *Choristoneura conflictana* (Wlkr.), *C. fumiferana* (Clem.), *C. lambertiana* (Busck), *C. occidentalis* Freem., *C. pinus* Freem., *Dioryctria reniculella* (Grote), *Epismus argutatus* (Clem.), *Evora hemidesma* (Zell.), *Grapholitha molesta* (Busck), *Platynota idaeusalis* (Wlkr.), *Sparganothis pettitana* (Rob.), *S. sulphurana* (F.).
Meteorus trachynotus Viereck, 1912. U. S. Natl. Mus., Proc. 42: 142. ♀, ♂.
Meteorus archipsidis Viereck, 1912. U. S. Natl. Mus., Proc. 43: 580. ♀.
- Biology: McGugan, 1955. Canad. Ent. 87: 178-187.
- versicolor** (Wesmael). New England, east. Canada; B. C., Wash.; China, Japan, N. Afr. Introduced from Europe. Host: *Nygmia phaeorrhoea* (Donov.), *Orgyia antiqua* (L.), *O. leucostigma* (Sm.), *Protoboarmia porcelaria* (Gn.), *Stilpnotia salicis* (L.).
Perilitus versicolor Wesmael, 1835. Nouv. Mem. Acad. Sci. Bruxelles 9: 43. ♀, ♂.
Perilitus bimaculatus Wesmael, 1835. Nouv. Mem. Acad. Sci. Bruxelles 9: 45. ♀.
Perilitus brevicornis Ratzeburg, 1844. Ichn. d. Forstins. 1: 77. ♀.
Meteorus decoloratus Ruthe, 1862. Berlin. Ent. Ztschr. 6: 48. ♀.

Biology: Muesebeck, 1918. Jour. Agr. Res. 12: 191-206. — Burgess and Grossman, 1929. U. S. Dept. Agr., Tech. Bul. 86, p. 127-131. — Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, p. 114. — Dowden, 1962. U. S. Dept. Agr., Agr. Handb. 226, p. 60.

vitticollis (Holmgren). Calif.

Saprotichus vitticollis Holmgren, 1868. Eug. Resa I, Zool. I, Ins., p. 431. ♂.

NOMINA NUDA IN METEORUS HALIDAY

Meteorus areolatus Ashmead, 1902. In Slosson, Ent. News 13: 321.

Meteorus brevicandus Ashmead, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 57.

Saprotichus johnsonii Ashmead, 1900 (1899). In Smith, Ins. N. J., p. 589.

Meteorus niger Ashmead, 1902. In Slosson, Ent. News 13: 321.

Meteorus notodontae Riley, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 57.

TRIBE EUPHORINI

Members of this tribe are chiefly endoparasites of adult insects, but the species of some groups parasitize nymphs of Heteroptera and Psocoptera.

Biology: Muesebeck, 1963. Ent. Soc. Wash., Proc. 65: 306. —Tobias, 1965. Ent. Obozr. 44: 841-865.

Genus ARIDELUS Marshall

Aridelus Marshall, 1887. Ent. Soc. London, Trans., p. 66.

Type-species: *Aridelus bucephalus* Marshall. Monotypic.

Helorimorpha Schmiedeknecht, 1907. Hym. Mitteleuropas, p. 523.

Type-species: *Helorimorpha egregia* Schmiedeknecht. Monotypic.

Stictometeorus Cameron, 1909. Soc. Ent. 24: 9.

Type-species: *Stictometeorus rufus* Cameron. Monotypic.

Erythrometeorus Cameron, 1911. Timehri (Ser. 3) 1: 317.

Type-species: *Erythrometeorus reticulatus* Cameron. Monotypic.

Scipolabia Enderlein, 1920. Arch. f. Naturgesch. 84 (A) (11): 220.

Type-species: *Scipolabia reticulata* Enderlein. Orig. desig.

Species of this genus are parasites of nymphs and adults of Pentatomidae.

Revision: Muesebeck, 1936. U. S. Dept. Agr., Misc. Pub. 241, p. 6-8 (No. Amer. spp.). —Papp, 1965. Acta Zool. Hung. 11: 181-201 (World spp.).

Taxonomy: Shenefelt, 1969. Hym. Cat., part 4, p. 11-15 (cat. World spp.).

fisheri (Viereck). Pa. s. to Ga., w. to Kans. and Tex. Host: *Euschistus servus euschistoides* (Voll.).

Helorimorpha fisheri Viereck, 1909. Ent. News 20: 290. ♀, ♂.

melanderi (Brues). Mass., N. Y., Pa., Md., Mich., Tenn.

Helorimorpha melanderi Brues, 1908. Ent. News 19: 363. ♀.

nigrithorax Muesebeck. Conn., Va., S. C., Tenn., Tex.

Aridelus nigrithorax Muesebeck, 1936. U. S. Dept. Agr., Misc. Pub. 241, p. 8. ♀.

Genus CHRYSOPOPTHORUS Goidanich

Chrysopophthorus Goidanich, 1948. Ist. Ent. Univ. Bologna, Bol. 17: 83.

Type-species: *Chrysopophthorus chrysopinaginis* Goidanich. Orig. desig.

Parasitic on adults of *Chrysopa*.

Revision: Mason, 1964. Canad. Ent. 96: 1005-1017 (World spp.).

Taxonomy: Shenefelt, 1969. Hym. Cat., part 4, p. 29-30 (cat. World spp.).

americanus Mason. Mass., N. Y., Md., Va., Ohio, Mich., Ill., Tenn., Ark., La., Ariz., Calif. Host:

Chrysopa carnea Stephens.

Chrysopophthorus americanus Mason, 1964. Canad. Ent. 96: 1012. ♀, ♂.

Genus CRYPTOXILOS Viereck

Cryptoxilos Viereck, 1911. U. S. Natl. Mus., Proc. 40: 180.

Type-species: *Cryptoxilos dichromorphus* Viereck. Orig. desig.

Meager host records indicate species are parasites of adult Scolytidae.

Taxonomy: Muesebeck, 1936. U. S. Dept. Agr., Misc. Pub. 241, p. 9-10. —Shenefelt, 1969.

Hym. Cat., part 4, p. 30 (cat. World spp.).

convergens Muesebeck. D. C., W. Va., Va., N. C. Host: *Phloeotribus frontalis* (Oliv.).

Euphorus phloeotribi Ashmead, 1893. In Chittenden, U. S. Dept. Agr., Insect Life 5: 249.

Nomen nudum.

Cryptoxilos convergens Muesebeck, 1936. U. S. Dept. Agr., Misc. Pub. 241, p. 9. ♀, ♂.

Genus EUPHORIAELLA Ashmead

Euphoriella Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 116.

Type-species: *Labeo incertus* Ashmead. Orig. desig.

Parasites of Psocoptera. In all known examples, the early instar nymph is parasitized and the mature parasite larva emerges from a mature host nymph or adult.

Revision: Loan and New, 1972 (1971). Ent. Soc. Ont., Proc. 102: 92-108 (No. Amer. spp.).

Taxonomy: Muesebeck, 1936. U. S. Dept. Agr., Misc. Pub. 241, p. 25-27 (some No. Amer. spp.). —Shenefelt, 1969. Hym. Cat., part 4, p. 34-35 (cat. World spp.).

criddlei Loan and New. Ont.

Euphoriella criddlei Loan and New, 1972 (1971). Ent. Soc. Ont., Proc. 102: 105. ♀, ♂.

foutsii Loan and New. Md., Iowa.

Euphoriella foutsii Loan and New, 1972 (1971). Ent. Soc. Ont., Proc. 102: 102. ♀, ♂.

hyalopsocidis Loan and New. Ont. Host: *Hyalopsocus striatus* (Wlkr.).

Euphoriella hyalopsocidis Loan and New, 1972 (1971). Ent. Soc. Ont., Proc. 102: 105. ♀, ♂.

incerta (Ashmead). Fla.

Labeo incertus Ashmead, 1887. Ent. Amer. 3: 74. "♀" = ♂.

kaladarensis Loan and New. Ont.

Euphoriella kaladarensis Loan and New, 1972 (1971). Ent. Soc. Ont., Proc. 102: 96. ♀, ♂.

nixonii Loan and New. Maine.

Euphoriella nixonii Loan and New, 1972 (1971). Ent. Soc. Ont., Proc. 102: 95. ♂.

pacifica Muesebeck. Calif.

Euphoriella pacifica Muesebeck, 1936. U. S. Dept. Agr., Misc. Pub. 241, p. 26. ♀.

pallidifacia Loan and New. Que.

Euphoriella pallidifacia Loan and New, 1972 (1971). Ent. Soc. Ont., Proc. 102: 104. ♀, ♂.

solidaginis Loan and New. Ont.

Euphoriella solidaginis Loan and New, 1972 (1971). Ent. Soc. Ont., Proc. 102: 100. ♀, ♂.

sommermanae Muesebeck. Conn. Host: *Anomopsocus amabilis* (Walsh).

Euphoriella sommermanae Muesebeck, 1956. Ent. Soc. Wash., Proc. 58: 148. ♀, ♂.

Biology: Sommerman, 1956. Ent. Soc. Wash., Proc. 58: 149-152 (lists numerous species of nymphal and adult psocids from which she reared Hymenoptera, probably braconids, but only the one species listed above was definitely associated with *Euphoriella sommermanae*).

Genus HOLDAWAYELLA Loan

Holdawayella Loan, 1967. Ent. Soc. Amer., Ann. 60: 241.

Type-species: *Holdawayella tingiphaga* Loan. Orig. desig.

Parasitic on nymphs and adults of Tingidae, particularly the genus *Corythucha* Stal.

Biology: Loan, Gerber, and Reid, 1971. Canad. Ent. 103: 1273-1284.

juglandis Loan. Ont. Host: *Corythucha juglandis* (Fitch). This parasite is bisexual and apparently restricted to *C. juglandis* on *Juglans* sp.

Holdawayella juglandis Loan, 1971. Canad. Ent. 103: 1274. ♀, ♂.

tingiphaga Loan. Ont. Host: *Corythucha coryli* O. and D., *C. heidemanni* Drake, *C. pruni* O. and D., *C. ulmi* O. and D. This parasite is parthenogenetic and shows an apparent field preference for *C. heidemanni*.

Holdawayella tingiphaga Loan, 1967. Ent. Soc. Amer., Ann. 60: 241. ♀.

Genus LEIOPHRON Nees

Leiophron Nees, 1818. Nova Acta Acad. Leop. Carol. 9: 103. No species included.

Type-species: *Leiophron apicalis* Curtis. Desig. by Viereck, 1914. Desig. from three species first included by Haliday, 1833, Ent. Mag. 1: 263.

Euphorus Nees, 1834. Hym. Ichn. Aff. Monog., v. 2, p. 360.

Type-species: *Euphorus pallicornis* Nees. Monotypic.

Euphoriana Gahan, 1913. U. S. Natl. Mus., Proc. 46: 433.

Type-species: *Euphoriana uniformis* Gahan. Orig. desig.

Parasitic on nymphs of Miridae.

Revision: Muesebeck, 1936. U. S. Dept. Agr., Misc. Pub. 241: 28-33 (some No. Amer. spp.).

—Richards, 1967. Roy. Ent. Soc. London, Trans. 119: 171-186 (some Eur. spp.). —Loan,

1974. Roy. Ent. Soc. London, Trans. 126: 222-238 (Eur. spp.). — Loan, 1975 (1974). Nat. Canad. 101: 824-834 (No. Amer. spp.).
- Taxonomy: Muesebeck, 1958. U. S. Natl. Mus., Proc. 107: 410-412. — Shenefelt, 1969. Hym. Cat., part 4, p. 33-48 (cat. World spp.). — Loan and Bilewicz-Pawinska, 1973. Environ. Ent. 2: 271-278. — Loan, 1974. Roy. Ent. Soc. London, Trans. 126: 222 (syn. of *Euphoriana*).
- Biology: Loan, 1975 (1974). Nat. Canad. 101: 822-824.
- birdi** Loan. Maine, N. Y., Pa.
Leiophron birdi Loan, 1975 (1974). Nat. Canad. 101: 826. ♂.
- borealis** Loan. Ont.
Leiophron borealis Loan, 1975 (1974). Nat. Canad. 101: 826. ♂.
- brevipetiolatus** Loan. Colo.
Leiophron brevipetiolatus Loan, 1975 (1974). Nat. Canad. 101: 831. ♂.
- cephalicus** (Provancher). Ont., Colo.
Microctonus cephalicus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 127. ♂.
Euphorus spiniscapus Muesebeck, 1936. U. S. Dept. Agr., Misc. Pub. 241, p. 30. ♀.
Taxonomy: Loan, 1975 (1974). Nat. Canad. 101: 830.
- compressus** Loan. Calif.
Leiophron compressus Loan, 1975 (1974). Nat. Canad. 101: 828. ♂.
- fumipennis** Loan. Que.
Leiophron fumipennis Loan, 1975 (1974). Nat. Canad. 101: 832. ♂.
- fuscipennis** Loan. La.
Leiophron fuscipennis Loan, 1975 (1974). Nat. Canad. 101: 829. ♀.
- grohi** Loan. Maine, Ont.
Leiophron grohi Loan, 1975 (1974). Nat. Canad. 101: 829. ♂.
- lygivora** (Loan). Ont. Host: *Lygus lineolaris* (P. de B.).
Euphoriana lygivora Loan, 1970 (1969). Ent. Soc. Ont., Proc. 100: 193. ♀.
- maculipennis** (Ashmead). Fla., Ont. Host: *Diaphnocoris chlorovis* (Say).
Sierola maculipennis Ashmead, 1887. Ent. Amer. 3: 75. ♀.
- muesebecki** (Loan). Ont. Host: *Lopidea marginalis* (Reut.).
Euphoriana muesebecki Loan, 1970. Ent. Soc. Wash., Proc. 72: 441. ♀, ♂.
- occipitalis** (Muesebeck). Idaho, Ariz., Calif.
Enphorus occipitalis Muesebeck, 1936. U. S. Dept. Agr., Misc. Pub. 241, p. 29. ♀.
- pallidipennis** Loan. Ariz.
Leiophron pallidipennis Loan, 1975 (1974). Nat. Canad. 101: 830. ♀.
- provancheri** Loan. Tex.
Leiophron provancheri Loan, 1975 (1974). Nat. Canad. 101: 831. ♀.
- rufipennis** Loan. Ont., Nebr.
Leiophron rufipennis Loan, 1975 (1974). Nat. Canad. 101: 833. ♂.
- scitulus** (Cresson). Ill.
Enphorus scitulus Cresson, 1872. Canad. Ent. 4: 227. ♀.
- trygonotylidis** Loan. Ont. Host: *Trygonotylus coelestialium* (Kirkaldy).
Leiophron trygonotylidis Loan, 1975 (1974). Nat. Canad. 101: 834. ♀, ♂.
- tuberculatus** (Muesebeck). N. H., Ky., Ga., Fla.
Enphorus tuberculatus Muesebeck, 1936. U. S. Dept. Agr., Misc. Pub. 241, p. 31. ♀, ♂.
- uniformis** (Gahan). Widely distributed in U. S. Host: *Lygus elisus* Van Duzee, *L. hesperus* Knight, *L. lineolaris* (P. de B.), *L. pratensis* (L.).
Euphoriana uniformis Gahan, 1913. U. S. Natl. Mus., Proc. 46: 433. ♀, ♂.
- Biology: Clancy and Pierce, 1966. Jour. Econ. Ent. 59: 853-858.

Genus MICROCTONUS Wesmael

Microctonus Wesmael, 1835. Nouv. Mem. Acad. Sci. Bruxelles 9: 54.
Type-species: *Perilitus aethiops* Nees. Desig. by Foerster, 1862.

Gamosecus Provancher, 1880. Nat. Canad. 12: 167.

Type-species: *Gamosecus mellinus* Provancher. Desig. by Viereck, 1914.

Parasitic on adult Coleoptera, particularly Chrysomelidae and Curculionidae.

Revision: Muesebeck, 1936. U. S. Dept. Agr., Misc. Pub. 241: 14-20 (some No. Amer. spp.).

Taxonomy: Loan, 1969. Ent. Soc. Wash., Proc. 71: 404-416 (key to No. Amer. spp.).

—Shenefelt, 1969. Hym. Cat., part 4, p. 101-115 (cat. World spp.). —Loan, 1975.

Entomophaga 20: 31-41 (Haliday types).

Biology: Smith, 1953. Ohio Jour. Sci. 53: 173-176 (host list). —Loan, 1969. Ent. Soc. Wash., Proc. 71: 409-410 (host list).

aethiopoides Loan. Maine s. to Va., w. to Ont. and Ohio; Calif.; Europe. Introduced from France. Host: *Hypera meles* (F.), *H. nigrirostris* (F.), *H. postica* (Gyll.), *H. rumicis* (L.), *Sitona crinitus* Hbst., *S. hispidulus* (F.).

Microctonus aethiopoides Loan, 1975. Entomophaga 20: 33. ♀, ♂. According to Loan (1975), this species has been incorrectly identified as *aethiops* (Nees); most literature on *aethiops* in North America apparently refers to *aethiopoides* Loan.

Taxonomy: Fuester, 1970. Ent. Soc. Amer., Ann. 63: 1777-1778 (larval distinction).

Biology: Loan and Holdaway, 1961. Canad. Ent. 92: 1057-1079. —Coles and Putler, 1963.

Jour. Econ. Ent. 56: 609-610. —Brunson and Coles, 1968. U. S. Dept. Agr., Prod. Res. Rpt. 101, p. 4 (distr., releases, recoveries). —Day, et al., 1971. Jour. Econ. Ent. 64: 190-193 (distr.). —Dysart and Day, 1976. U. S. Dept. Agr., Prod. Res. Rpt. 167, p. 4-5 (releases and recoveries). —Abu and Ellis, 1976. Environ. Ent. 5: 1040-1042.

Morphology: Loan and Holdaway, 1961. Canad. Ent. 93: 1059-1065.

alticae Loan. Oreg. Host: *Altica bimarginata* Say.

Microctonus alticae Loan, 1969. Ent. Soc. Wash., Proc. 71: 414. ♀.

barri Loan. Idaho.

Microctonus barri Loan, 1969. Ent. Soc. Wash., Proc. 71: 413. ♀.

blapstini Loan. Ont. Host: *Blapstinus metallicus* (F.).

Microctonus blapstini Loan, 1967. Ent. Soc. Amer., Ann. 60: 231. ♀, ♂.

Biology: Loan, 1967. Ent. Soc. Amer., Ann. 60: 238-239.

carabivorus Muesebeck. Md., Va., Tenn., Mich., Wis., Iowa, Idaho. Host: *Galerita* sp.

Microctonus carabivorus Muesebeck, 1936. U. S. Dept. Agr., Misc. Pub. 2, p. 16. ♀, ♂.

colesi Drea. Vt., Mass., R. I., Conn., N. Y., Pa., N. J., Del., Md., W. Va., Va., N. C., Ohio. Host: *Hypera postica* (Gyll.).

Microctonus colesi Drea, 1968. Ent. News 79: 98. ♀, ♂.

Taxonomy: Fuester, 1970. Ent. Soc. Amer., Ann. 63: 1777-1778 (larval distinction).

Biology: Brunson and Coles, 1968. U. S. Dept. Agr., Prod. Res. Rpt. 101, p. 4-5 (releases, recoveries as *Microctonus* sp.). —Day, et al., 1971. Jour. Econ. Ent. 64: 191-193 (distr.).

—Dysart and Day, 1976. U. S. Dept. Agr., Prod. Res. Rpt. 167, p. 4 (releases and recoveries).

crepidoderae Loan. Ont. Host: *Crepidodera* spp.

Microctonus crepidoderae Loan, 1967. Ent. Soc. Amer., Ann. 60: 230. ♀, ♂.

Biology: Loan, 1967. Ent. Soc. Amer., Ann. 60: 239-240.

cucumeridis Loan. Ont. Host: *Epitrix cucumeris* (Harr.).

Microctonus cucumeridis Loan, 1969. Ent. Soc. Wash., Proc. 71: 412. ♀.

disonychae Loan. Ont. Host: *Disonychia triangularis* (Say).

Microctonus disonychae Loan, 1967. Ent. Soc. Amer., Ann. 60: 233. ♀, ♂.

Biology: Loan, 1967. Ent. Soc. Amer., Ann. 60: 237-238.

eleodis (Viereck). Mich., Minn.; Sask. s. to Kans. and N. Mex., w. to Alta., Oreg. and Calif.

Host: *Eleodes extricata* (Say), *E. hispilabris* (Say), *E. obsoleta* (Say), *E. opaca* (Say), *E.*

- suturalis* (Say), *E. tricolorata* (Say), *E. vandykei* Blaisdell, *Embaphion muricatum* (Say), *E. planum* Horn.
- Perilitus eleodis* Viereck, 1913. U. S. Natl. Mus., Proc. 44: 561. ♀, ♂.
- epitricis* (Viereck). N. J. s. to N. C., w. to Ont., Kans., and La.; B. C. Host: *Epitrix cucumeris* (Harr.), *E. fasciata* Blatchley, *E. hirtipennis* (Melsh.).
- Perilitus epitricis* Viereck, 1912. U. S. Natl. Mus., Proc. 42: 625. ♀, ♂.
- Biology: Loan, 1967. Ent. Soc. Amer., Ann. 60: 236-237.
- gastrophysae* (Ashmead). D. C., Va., S. C. Host: *Gastrophysa cyanea* Melsh., *G. viridula* (DeGeer).
- Perilitus gastrophysae* Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 641. ♀.
- glyptosceli* Loan, Klein and Coppel. Wis. Host: *Glyptoscelis pubescens* (F.).
- Microctonus glyptosceli* Loan, Klein and Coppel, 1969. Ent. Soc. Wash., Proc. 71: 230. ♀, ♂.
- invictus* Muesebeck. Ariz., Calif. Host: *Trigonoscuta* sp.
- Microctonus invictus* Muesebeck, 1961. Brooklyn Ent. Soc., Bul. 56: 59. ♀, ♂.
- loani* Mason. N. B., Que., Ont. Host: *Altica ambiens alni* Harr., *A. corni* Woods, *Calligrapha philadelphica* (L.).
- Microctonus loani* Mason, 1968. Canad. Ent. 100: 726. ♀.
- longitarsi* Loan. Ont. Host: *Longitarsus melanurus* (Melsh.).
- Microctonus longitarsi* Loan, 1969. Ent. Soc. Wash., Proc. 71: 411. ♀, ♂.
- mellinus* (Provancher). Mass., Md., D. C., Va., Ga., Fla., Mich., Tenn., Canada.
- Gamosecus mellinus* Provancher, 1880. Nat. Canad. 12: 168. ♀.
- muesebecki* Loan. Ont. Host: *Paria thoracica* (Melsh.).
- Microctonus muesebecki* Loan, 1967. Ent. Soc. Amer., Ann. 60: 234. ♀, ♂.
- Biology: Loan, 1967. Ent. Soc. Amer., Ann. 60: 240.
- nigritus* (Provancher). N. B., Que., Mich., Man. Host: *Altica ambiens alni* (Harr.).
- Perilitus nigritus* Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 379. ♂.
- pachylobii* Muesebeck. Ga., Fla., Ark., La. Host: *Pachylobius picivorus* (Germar).
- Microctonus pachylobii* Muesebeck, 1961. Brooklyn Ent. Soc., Bul. 56: 58. ♀, ♂.
- psyllidis* Loan. Ont. Host: *Psylliodes punctulata* Melsh.
- Microctonus psyllidis* Loan, 1969. Ent. Soc. Wash., Proc. 71: 410. ♀, ♂.
- pusillae* Muesebeck. Colo., Ariz., Idaho, Wash. Host: *Epitrix subcrinita* Lec., *Phyllotreta pusilla* Horn.
- Microctonus pusillae* Muesebeck, 1936. U. S. Dept. Agr., Misc. Pub. 241, p. 20. ♀, ♂.
- Biology: Chittenden and Marsh, 1920. U. S. Dept. Agr., Bul. 902, p. 13 (as *Perilitus epitricis* Viereck).
- sitonae* Mason. Ont. Host: *Sitona scissifrons* Say.
- Microctonus sitonae* Mason, 1960. Canad. Ent. 92: 436. ♀, ♂.
- Biology: Loan, 1963. Ent. Soc. Amer., Ann. 56: 605-611.
- stelleri* Loan. U. S. (?); France. Liberated in Vt., Mass., N. Y., Pa., N. J., Del., Md., Va., Mich., Ill., Ky., Wis. and Colo. but not known to be established. Introduced from France. Host: *Hypera postica* (Gyll.).
- Microctonus stelleri* Loan, 1972. Canad. Ent. 104: 1446. ♀, ♂.
- Biology: Drea, et al., 1972. Canad. Ent. 104: 1447-1456. —Dysart and Day, 1976. U. S. Dept. Agr., Prod. Res. Rpt. 167, p. 6 (releases).
- vittatae* Muesebeck. U. S., south. Canada; Hawaii, Japan, Korea. Host: *Phyllotreta bipustulata* (F.), *P. cruciferae* (Goeze), *P. sinuata* (Steph.), *P. striolata* (F.).
- Microctonus vittatae* Muesebeck, 1936. U. S. Dept. Agr., Misc. Pub. 241, p. 19. ♀.
- Biology: Nagasawa, 1943. Mushi 15: 103-107. —Nagasawa, 1943. Shokubutsu Oyobi Dobutsu 11: 460-466. —Nagasawa, 1947. Seibutsu 2: 48-52. —Nagasawa, 1948. Bul. Takarazuka Insectarium 58, 18 p. —Smith and Peterson, 1950. Jour. Econ. Ent. 43: 581-585. —Smith, 1952. Univ. Calif. Pub. Ent. 9: 315-344. —Loan, 1967. Ent. Soc. Amer., Ann. 60: 236.

NOMEN NUDUM IN MICROCTONUS WESMAEL

Microctonus dorsalis Ashmead, 1895. In Slosson, Ent. News 6: 317.

Genus MYIOCEPHALUS Marshall

Myiocephalus Marshall, 1897. In Andre, Spec. Hym. Eur. Alg., v. 5 bis, p. 218.

Type-species: *Microctonus boops* Wesmael. Monotypic.

Spilomma Morley, 1909. Ent. Monthly Mag. 45: 211.

Type-species: *Spilomma falconivibrans* Morley. Monotypic.

Hosts for this genus are not known, but one European species was associated with nests of the ant genus *Formica*.

Taxonomy: Muesebeck, 1936. U. S. Dept. Agr., Misc. Pub. 241: 21. —Shenefelt, 1969. Hym. Cat., part 4, p. 115-116 (cat. World spp.).

boops (Wesmael). Holarctic.

Microctonus boops Wesmael, 1835. Nouv. Mem. Acad. Sci. Bruxelles 9: 59. ♀.

Gamoscus laticeps Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 126. ♀.

Aphidius hedini Fahringer, 1929. Arkiv. fur Zool. 21 (A): 2. ♂.

Taxonomy: Muesebeck, 1936. U. S. Dept. Agr., Misc. Pub. 241, p. 22. —Stary, 1959. Beitr. Ent. 9: 187-188.

Genus PERILITUS Nees

Perilitus Nees, 1818. Nov. Acta Acad. Caes. Leop. Car. 9: 302.

Type-species: *Bracon rutilis* Nees. Desig. by Westwood, 1840.

Dinocampus Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 252.

Type-species: *Bracon terminatus* Nees. Orig. desig.

Species in this genus are parasitic on adult Coleoptera, particularly Coccinellidae and Chrysomelidae. Tobias (1965) treats *Dinocampus* as a distinct genus.

Taxonomy: Muesebeck, 1936. U. S. Dept. Agr., Misc. Pub. 241, p. 11-13 (No. Amer. spp.).

—Tobias, 1965. Ent. Obozr. 44: 842 (restored *Dinocampus*). —Shenefelt, 1969. Hym. Cat., part 4, p. 30-33, 117-122 (cat. World spp.).

Biology: Jackson, 1928. Zool. Soc. London, Proc. 1928: 597-630 (biol. of *rutilis* (Nees) in Europe). —Smith, 1953. Ohio Jour. Sci. 53: 175-176 (host list).

coccinellae (Schränk). Cosmopolitan. Host: *Adonia variegata* (Goeze), *Coccinella californica*

Mann., *C. noremnotata* Hbst., *C. quinquepunctata* L., *C. septempunctata* L., *C. trifasciata juliana* Muls., *Coleomegilla maculata fuscilabris* (Muls.), *C. m. maculata* (DeGeer), *C. m. lengi* Timb., *Cycloneda sanguinea* (L.), *Halysia quatuordecimguttata* (L.), *Hippodamia convergens* Guer.

Ichneumon coccinellae Schränk, 1802. Fauna Boica, v. 2, p. 310. ♀.

Bracon terminatus Nees, 1812 (1811). Mag. Gesell. Naturf. Freunde Berlin 5: 26. ♀, ♂.

Euphorus sculptus Cresson, 1872. Canad. Ent. 4: 227. ♀.

Centistes americana Riley, 1888. U. S. Dept. Agr., Insect Life 1: 103. ♀.

Biology: Cushman, 1913. Ent. Soc. Wash., Proc. 15: 153-155. —Stich, 1929. Ztschr. f. Wiss.

Insektenbiol. 24: 91-95. —Ibrahim, 1955. Soc. Ent. d' Egypte, Bul. 39: 414-416. —Hudon,

1959. Canad. Ent. 91: 63-64. —Walker, 1961. Ent. Monthly Mag. 97: 240-244. —Ford, 1971.

Ent. Gaz. 22: 2. —Richerson and DeLoach, 1972. Ent. Soc. Amer., Ann. 65: 834-839.

—Benton and Crump, 1975. N. Y. Ent. Soc., Jour. 33: 60-63.

pyri (Viereck). Conn., N. J.

Dinocampus pyri Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22: 225. ♀.

NOMEN NUDUM IN PERILITUS NEES

Perilitus hopkinsi Ashmead, 1911. In Viereck, Ent. Soc. Wash., Proc. 13: 95.

Genus PERISTENUS Foerster

Peristenus Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 25.

Type-species: *Microctonus barbiger* Wesmael. Orig. desig.

Parasites of Miridae. In all known examples, the early instar nymph is parasitized and the mature parasite larva emerges from either the mature host nymph or adult.

Revision: Loan, 1974. Roy. Ent. Soc. London, Trans. 126: 207-222 (Eur. spp.). — Loan, 1975 (1974). Nat. Canad. 101: 835-859 (No. Amer. spp.).

Taxonomy: Loan, 1975 (1974). Nat. Canad. 101: 822-824.

Biology: Loan and Bilewicz-Pawinska, 1973. Environ. Ent. 2: 271-278.

alni Loan. Ont.

Peristenus alni Loan, 1975 (1974). Nat. Canad. 101: 841. ♀.

bicolor Loan. Ont. Host: *Slaterocoris* sp., *S. atritibialis* (Knight), *S. brevitatus* (Knight), *S. stygius* (Say).

Peristenus bicolor Loan, 1975 (1974). Nat. Canad. 101: 852. ♀, ♂.

brimleyi Loan. Alta., B. C.

Peristenus brimleyi Loan, 1975 (1974). Nat. Canad. 101: 842. ♀, ♂.

chlamydatidis Loan. Sask. Host: *Chlamydatus* sp.

Peristenus chlamydatidis Loan, 1975 (1974). Nat. Canad. 101: 848. ♀.

clematidis Loan. Ont. Host: *Halticus uhleri* (Knight).

Peristenus clematidis Loan, 1975 (1974). Nat. Canad. 101: 857. ♀, ♂.

dicyphovora Loan. Ont.

Peristenus dicyphovora Loan, 1975 (1974). Nat. Canad. 101: 851. ♀, ♂.

dumestris Loan. Ont. Host: *Phytocoris* sp.

Peristenus dumestris Loan, 1975 (1974). Nat. Canad. 101: 841. ♀, ♂.

juniperinus Loan. Ont. Host: *Dichroosytus tinctipennis* Knight.

Peristenus juniperinus Loan, 1975 (1974). Nat. Canad. 101: 844. ♀, ♂.

juniperoides Loan. Ont. Host: *Bolteria luteifrons* Knight.

Peristenus juniperoides Loan, 1975 (1974). Nat. Canad. 101: 844. ♀, ♂.

laricinae Loan. Ont.

Peristenus laricinae Loan, 1975 (1974). Nat. Canad. 101: 848. ♀, ♂.

levifrons (Muesebeck). Colo.

Euphorus levifrons Muesebeck, 1936. U. S. Dept. Agr., Misc. Pub. 241, p. 32. ♂.

lonicerae Loan. Ont.

Peristenus lonicerae Loan, 1975 (1974). Nat. Canad. 101: 851. ♀, ♂.

nixonii Loan. Ont. Host: *Neoborus canadensis* Van Duzee.

Peristenus nixonii Loan, 1975 (1974). Nat. Canad. 101: 837. ♀.

pallipes (Curtis). Holarctic. Host: *Adelphocoris lineolatus* (Goeze), *A. rapidus* (Say), *Calocoris norvegicus* (Gmelin), *Chlamydatus* sp., *Labops hirtus* Knight, *Leptopterna dolabrata* (L.), *Lygus elisus* Van Duzee, *L. hesperus* Knight, *L. lineolaris* (P. de B.).

Leiophron pallipes Curtis, 1833. Brit. Ent., v. 10, no. 476. ♀, ♂.

Microctonus barbiger Wesmael, 1835. Nouv. Mem. Acad. Sci. Bruxelles 9: 69. ♀, ♂.

Euphorus mellipes Cresson, 1872. Canad. Ent. 4: 227. ♂.

Microctonus punctatus Provancher, 1883. Nat. Canad. 14: 17. ♂.

Euphorus tuberculifer Marshall, 1887. Ent. Soc. London, Trans. 1887: 57. ♂.

Brachistes nocturnus Viereck, 1905. Kans. Acad. Sci., Trans. 19: 279. ♂.

Biology: Brindley, 1939. Roy. Ent. Soc. London, Proc., Ser. A: Gen. Ent. 14: 51-56. — Loan, 1965 (1964). Ent. Soc. Ont., Proc. 95: 115-121. — Lim and Stewart, 1976. Canad. Ent. 108: 815-821.

pini Loan. Ont.

Peristenus pini Loan, 1975 (1974). Nat. Canad. 101: 840. ♂.

plagiognathi (Loan). Ont. Host: *Plagiognathus albonotatus* Knight, *P. cornicola* Knight.

Leiophron plagiognathi Loan, 1966. Ohio Jour. Sci. 66: 89. ♀, ♂.

- Biology: Loan, 1966. Ohio Jour. Sci. 66: 91-94.
- pseudopallipes** (Loan). Northeast. No. Amer. Host: *Lygus lineolaris* (P. de B.), *L. vanduzeei* Knight.
Leiothorax pseudopallipes Loan, 1970 (1969). Ent. Soc. Ont., Proc. 100: 189. ♀, ♂.
- Biology: Loan, 1970 (1969). Ent. Soc. Ont., Proc. 100: 192-193. — Lim and Stewart, 1976. Canad. Ent. 108: 815-821.
- reidi** Loan. Ont. Host: *Plagiognathus* sp., *P. nigronitens* (Knight).
Peristenus reidi Loan, 1975 (1974). Nat. Canad. 101: 846. ♀, ♂.
- salixidis** Loan. Ont.
Peristenus salixidis Loan, 1975 (1974). Nat. Canad. 101: 846. ♀.
- solidaginis** Loan. Ont. Host: *Slaterocoris atritibialis* (Knight), *S. breviatus* (Knight), *S. stygius* (Say).
Peristenus solidaginis Loan, 1975 (1974). Nat. Canad. 101: 848. ♀, ♂.
- stygius** Loan. Calif.; Europe. Introduced from France and Turkey. Host: *Lygus hesperus* Knight.
Peristenus stygius Loan, 1973. Environ. Ent. 2: 272. ♀, ♂.
- Biology: Drea, et al., 1973. Environ. Ent. 2: 278-280. — Butler and Wardecker, 1974. Jour. Econ. Ent. 67: 132-133. — Van Steenwyk and Stern, 1976. Environ. Ent. 5: 931-934. — Van Steenwyk and Stern, 1977. Jour. Econ. Ent. 70: 66-69.
- tacamahacae** Loan. Ont., N. S.
Peristenus tacamahacae Loan, 1975 (1974). Nat. Canad. 101: 857. ♂.
- vitidis** Loan. Ont. Host: *Lygocoris vibrum* (Knight), *Taedia scrupeus* (Say).
Peristenus vitidis Loan, 1975 (1974). Nat. Canad. 101: 839. ♀, ♂.
- wallisi** Loan. B. C.
Peristenus wallisi Loan, 1975 (1974). Nat. Canad. 101: 859. ♀, ♂.
- zingiberis** Loan. Ont. Host: *Macrotylus sexguttatus* (Prov.).
Peristenus zingiberis Loan, 1975 (1974). Nat. Canad. 101: 852. ♂.

Genus ROPALOPHORUS Curtis

- Ropalophorus* Curtis, 1837. Guide Arr. Brit. Ins., p. 118.
 Type-species: *Microctonus clavicornis* Wesmael. Orig. desig.
- Rhopalophorus* Blanchard, 1840. Hist. Nat. Anim. Articles 3: 331. Unjustified emendation; later incorrectly considered preoccupied by *Rhopalophora* Serville, 1834.
- Eustalocerus* Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 251. N. name for *Rhopalophorus*.
- Parasites on adult bark beetles.
- Taxonomy: Shenefelt, 1960. Ent. Soc. Amer., Ann. 53: 542-546. — Shenefelt, 1969. Hym. Cat., part 4, p. 124-125 (cat. World spp.).
- wisconsinensis** Shenefelt. Wis.
Ropalophorus wisconsinensis Shenefelt, 1960. Ent. Soc. Amer., Ann. 53: 543. ♀.

Genus STREBLOCERA Westwood

- Streblocera* Westwood, 1833. Phil. Mag. and Jour. Sci. 3: 342.
 Type-species: *Streblocera fulviceps* Westwood. Monotypic.
- Eutanycerus* Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 251.
 Type-species: *Eutanycerus halidayanus* Foerster. Orig. desig.
- Lecythodella* Enderlein, 1912. Arch. f. Naturgesch. 78 (A) (2): 41.
 Type-species: *Lecythodella garleppi* Enderlein. Orig. desig.
- Cosmophoridia* Hedqvist, 1955. Ent. Tidskr. 76: 93.
 Type-species: *Cosmophorus flaviceps* Marshall. Orig. desig.
- Revision: Watanabe, 1942. Insecta Matsumurana 16: 1-12 (World spp.). — DeSaeger, 1942. Rev. Zool. Bot. Africaines 35: 376-385 (African spp.). — DeSaeger, 1946. Exploration Parc Nat. Alert, fasc. 50, p. 144-178 (African spp.). — Capek and Snoflak, 1959. Acta Soc. Ent. Cech. 56: 343-354 (Eur. spp.).

Taxonomy: Muesebeck, 1936. U. S. Dept. Agr., Misc. Pub. 241, p. 13-14. —Capek and Snoflak, 1959. Acta Soc. Ent. Cech. 56: 344. —Shenefelt, 1969. Hym. Cat., part 4, p. 125-129 (cat. World spp.).

pulvillicornis Walley and MacKay. Que., Ariz.

Streblocera pulvillicornis Walley and MacKay, 1963. Canad. Ent. 95: 999. ♀.

Genus SYNTRETUS Foerster

Syntretus Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 251.

Type-species: *Microctonus vernalis* Wesmael. Orig. desig.

Host records indicate that species of this genus are parasitic on adult Ichneumonidae and Bombidae.

Taxonomy: Muesebeck, 1936. U. S. Dept. Agr., Misc. Pub. 241, p. 22-25. —Shenefelt, 1969. Hym. Cat., part 4, p. 130-133 (cat. World spp.).

Biology: Cole, 1959. Ent. Monthly Mag. 95: 18-21. —Alford, 1968. Roy. Ent. Soc. London, Trans. 120: 375-393.

brevicornis Muesebeck. Pa., Del., N. C., Wis., Ill.

Syntretus brevicornis Muesebeck, 1936. U. S. Dept. Agr., Misc. Pub. 241, p. 24. ♀, ♂.

venustus Muesebeck. Ala.

Syntretus venustus Muesebeck, 1936. U. S. Dept. Agr., Misc. Pub. 241, p. 23. ♀.

vigilax (Provancher). Que., N. H., N. Y., Ont., Minn., Colo., Calif.

Gamosesus vigilax Provancher, 1880. Nat. Canad. 12: 167. ♀, ♂.

NOMEN NUDUM IN SYNTRETUS FOERSTER

Microctonus americanus Ashmead, 1900. In Smith, Insects N. J., p. 588 (teste Shenefelt, 1969. Hym. Cat., part 4, p. 130).

Genus WESMAELIA Foerster

Wesmaelia Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 251.

Type-species: *Wesmaelia pendula* Foerster. Orig. desig.

The single species in this genus is parasitic on nymphs and adults of Nabidae.

Taxonomy: Muesebeck, 1936. U. S. Dept. Agr., Misc. Pub. 241, p. 20-21. —Shenefelt, 1969. Hym. Cat., part 4, p. 134-135 (references).

pendula Foerster. Holarctic. Host: *Nabis alternatus* Parshley, *N. americanoferus* Carayon, *N. capsiformis* Germar.

Wesmaelia pendula Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 251.

Wesmaelia cremasta Marshall. 1872. Ent. Monthly Mag. 8: 257. ♀.

Wesmaelia americana Myers, 1917. U. S. Natl. Mus., Proc. 53: 293. ♀, ♂.

Wesmaelia asiatica Shestakov, 1932. Zool. Anz. 99: 261.

Biology: Hendrick and Stern, 1970. Ent. Soc. Amer., Ann. 63: 389. —Stoner, 1973. Ent. Soc. Amer., Ann. 66: 471-473.

TRIBE COSMOPHORINI

Host records indicate that species are solitary endoparasites of adult Coleoptera. This tribe is composed of one Holarctic genus which has been placed in various groups, including its own subfamily. Most authors have placed it in the Euphorinae where it probably represents the most highly specialized group of the Braconidae.

Genus COSMOPHORUS Ratzeburg

Cosmophorus Ratzeburg, 1848. Ichn. d. Forstins., v. 2, p. 71.

Type-species: *Cosmophorus klugii* Ratzeburg. Monotypic.

Cosmophorus subg. *Cosmophorinus* Viereck, 1925. Canad. Ent. 57: 73.

Type-species: *Cosmophorus hopkinsii* Ashmead. Desig. by Muesebeck and Walkley, 1951.

Revision: Hedqvist, 1955. Ent. Tidskr. 76: 92-98 (Eur. spp.). —Capek, 1958. Acta Ent. Mus. Natl. Pragae 32: 151-169 (Eur. spp.).

Taxonomy: Tobias, 1966. Ent. Obozr. 45: 612-615. —Shenefelt, 1969. Hym. Cat., part 4, p. 135-137 (cat. World spp.). —Loan and Matthews, 1973. Ent. Soc. Wash., Proc. 75: 205-208 (key to No. Amer. spp.).

capeki Loan and Matthews. N. Y. Host: *Pityophthorus rhois* Swaine.

Cosmophorus capeki Loan and Matthews, 1973. Ent. Soc. Wash., Proc. 75: 205. ♀, ♂.

dendroctoni Viereck. N. B. Host: *Dendroctonus simplex* Lec.

Cosmophorus (Cosmophorinus) dendroctoni Viereck, 1925. Canad. Ent. 57: 73. ♂.

hopkinsii Ashmead. N. H., N. Y., W. Va. Host: *Pityokteines sparsus* (Lec.), *Pityophthorus* sp., *P. balsameus* Black., *Polygraphus poligraphus* (L.).

Cosmophorus hopkinsii Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 216. ♀, ♂.

hypohenemi Brues. Pa. Host: *Hypothenemus* sp.

Cosmophorus hypohenemi(!) Brues, 1908. Wis. Nat. Hist. Soc., Bul. 6: 162. ♀.

pityophthori Rohwer. Colo., Idaho, Wash., Calif. Host: *Pityophthorus nitidulus* (Mann.).

Cosmophorus pityophthori Rohwer, 1917. U. S. Natl. Mus., Proc. 53: 163. ♀, ♂.

Family APHIDIIDAE

By PAUL M. MARSH

The family Aphidiidae is the only group in the parasitoid Hymenoptera (other than the chalcid Aphelininae genera *Aphelinus*, *Mesidia* and *Mesidiopsis*) which has aphids as its primary hosts. The family is closely related to the subfamily Euphorinae of the Braconidae and, until recently, has been classified as a subfamily of the Braconidae. However, most workers in this group classify the Aphidiidae as a distinct family, and I have chosen to follow this arrangement.

Two catalogs to the species of the World have recently been published: M. Mackauer and P. Stary (1967. Index of Entomophagous Insects; Hym. Ichneumonoidea, World Aphidiidae. Le Francois, Paris. 195 pp.), and M. Mackauer (1968. In Ferriere and van der Vecht (ed.), Hymenopterorum Catalogus (nova editio), part 3, Aphidiidae. Junk, The Hague. 103 pp.). Except for a few cases, I have followed the systematic arrangement of Mackauer (1968) in preparing the North American catalog which follows. Both catalogs mentioned above contain a complete list of references to taxonomy and biology and a complete list of aphid hosts for each species. In the North American catalog below, I have listed only selected references, and the reader is referred to the above publications for further references. Also, only those aphid hosts which occur in North America have been listed for each parasite species.

Revision: Gahan, 1911. Md. Agr. Expt. Sta., Bul. 152: 147-200 (No. Amer. forms). —Smith, 1944. The Aphidiinae of North America. Ohio State Univ. Contr. Zool. Ent. No. 6, xii + 154 pp. (No. Amer. forms).

Taxonomy: Stary, 1960. Acta Soc. Ent. Cech. 57: 238-252 (genera). —Mackauer, 1961. Beitr. z. Ent. 11: 96-154 (review British Museum types). —Mackauer, 1961. Beitr. z. Ent. 11: 792-803 (subfamilies, tribes, genera). —Mackauer, 1963. Canad. Ent. 95: 921-935 (review Baker types). —Mackauer and Stary, 1967. Index World Aphidiidae, pp. 1-195 (cat. World spp. and hosts). —Mackauer, 1968. Hym. Cat., part 3, pp. 1-103 (cat. World spp. and hosts). —Marsh, 1971. Ent. Soc. Amer., Ann. 64: 848-849 (key to No. Amer. genera).

Biology: Stary, 1966. Aphid Parasites of Czechoslovakia. Junk, The Hague. 242 pp. (particularly chapters VI-XIV, pp. 96-222 for a general summary of aphid parasite biology).

SUBFAMILY EPHEDRINAE

All species of this subfamily are solitary endoparasites of adult and larval aphids. Pupation is inside the mummified host aphid. The subfamily is cosmopolitan in distribution.

Genus EPHEDRUS Haliday

Aphidius subg. *Ephedrus* Haliday, 1833. Ent. Mag. 1: 261, 485.

Type-species: *Bracon plagiator* Nees. Monotypic.

Elassus Wesmael, 1835. Nouv. Mem. Acad. Sci. Bruxelles 9: 85.

Type-species: *Aphidius parvicornis* Nees. Monotypic.

Revision: Gahan, 1911. Md. Agr. Expt. Sta., Bul. 152: 157-159 (No. Amer. spp.). —Stelfox, 1941. Roy. Irish Acad., Proc. 46: 125-142 (Irish spp.). —Smith, 1944. Aphidiinae of North America, pp. 15-21 (No. Amer. spp.). —Stary, 1958. Acta Faun. Ent. Mus. Natl. Pragae 3: 61-85 (Eur. spp., fossil spp.). —Stary, 1962. Opusc. Ent. 27: 87-98 (Eur. spp.). —Liu, 1968. Jour. Taiwan Agr. Res. 17: 35-48 (Taiwan spp.). —Takada, 1968. Insecta Matsumurana 30: 70-77 (Jap. spp.).

Taxonomy: Mackauer, 1961. Beitr. z. Ent. 11: 794, 798-799 (phylogeny, systematic position). —Mackauer, 1968. Hym. Cat., part 3, pp. 9-13 (cat. World spp.).

Biology: Mackauer and Stary, 1967. Index World Aphidiidae, pp. 15-21 (host list).

Morphology: Ivanova-Kasas, 1956. Ent. Obozr. 35: 245-261 (embryology). —Sedlag, 1956. Deut. Zool. Gesell., Verh. 1956: 356-361 (female genitalia). —Eastop, 1966. Roy. Ent. Soc. London, Proc. (A) 41: 42-44 (mouthparts).

brevis Stelfox. Canada, Colo., Alaska; Europe. Parasitic on aphids associated with *Betula* and *Alnus*.

Ephedrus brevis Stelfox, 1941. Roy. Irish Acad., Proc. 46: 140. ♀, ♂.

Ephedrus picticornis Stelfox, 1941. Roy. Irish Acad., Proc. 46: 138. ♀, ♂.

californicus Baker. N. B., Que., Ont., Md., Mich., Alta., Idaho, Utah, Ariz., B. C., Oreg., Calif.

Host: *Acyrtosiphon pisum* (Harr.), *Dactynotus ambrosiae* (Thom.), *Macrosiphum agrimoniellum* (Ckll.), *M. euphorbiae* (Thomas), *M. rosae* (L.), *Rhopalosiphum grabhami* (Ckll.).

Ephedrus californicus Baker, 1909. Pomona Jour. Ent. 1: 23. ♀.

Ephedrus nigricornis Gahan, 1911. Md. Agr. Expt. Sta., Bul. 152: 159. ♀.

Ephedrus aestivalis Viereck, 1915. Calif. State Comm. Hort., Monthly Bul. 4: 286. ♀. N. syn.

Taxonomy: Mackauer, 1963. Canad. Ent. 95: 923-924. —Mackauer and Finlayson, 1967. Canad. Ent. 99: 1072-1074.

incompletus (Provancher). Ont., N. B. s. to Fla., w. to Kans.; Oreg. Host: *Acyrtosiphon dirhodum* (Wlkr.), *Aphis nasturtii* Kalt., *Aulacorthum* sp., *Dactynotus erigeronensis* (Thom.), *D. illini* (H. and F.), *D. rudbeckiae* (Fitch), *Lipaphis erysimi* (Kalt.), *Macrosiphum agrimoniellum* (Ckll.), *M. euphorbiae* (Thom.), *M. lirioidendri* (Monell), *M. rosae* (L.), *Microparsus variabilis* Patch, *Myzus cerasi* (F.), *M. certus* (Wlkr.), *M. persicae* (Sulzer), *Nerocorylobium carpinicolens* (Patch). This species is occasionally confused with *Ephedrus californicus* Baker.

Perilitus incompletus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 126. ♂.

Ephedrus incompletus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 156. ♀.

Scotioneurus dives Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 157. ♂.

Ephedrus rosae Withington, 1909. Kans. Acad. Sci., Trans. 22: 318. ♀, ♂.

Biology: Withington, 1909. Kans. Acad. Sci., Trans. 22: 318-321. —Wheeler, 1923. Ent. Soc. Amer., Ann. 16: 1-29.

lacetosus (Haliday). Canada, Md., Mich., Colo., Alaska, Wash., Oreg.; Mex.; Europe. Host:

Amphorophora agathonica Hottes, *Macrosiphoniella absinthii* (L.), *Macrosiphum agrimoniellum* (Ckll.), *M. rosae* (L.), *Masouaphis maxima* (Mason).

Aphidius (*Ephedrus*) *lacetosus* Haliday, 1833. Ent. Mag. 1: 486. ♀, ♂.

Ephedrus lacetosus var. *homostigma* Fahringer, 1934. Arkiv f. Zool. 27(A): 13. ♂.

Ephedrus muesebecki Smith, 1944. Aphidiinae of North America, p. 20. ♀, ♂.

Taxonomy: Mackauer, 1961. Beitr. z. Ent. 11: 99. —Sharma and Subba Rao, 1965 (1964). Indian Jour. Ent. 26: 458-459.

Biology: Dill, 1937. Naturf. Gesell. Aargau, Mitt. 20: 157-240.

palaestinensis Mackauer. Calif.; Eastern Mediterranean. Liberated in Calif. but not known to be established. Host: *Aphis craccivora* Koch, *A. gossypii* Glover, *Rhopalosiphum maidis* (Fitch), *R. padi* (L.).

Ephedrus (*Ephedrus*) *palaestinensis* Mackauer, 1959. Beitr. z. Ent. 9: 867. ♀, ♂.

- persicae** Froggatt. Nearly world-wide distribution. Host: *Aphis craccivora* Koch, *A. fabae* Scop., *A. gossypii* Glover, *A. pomi* DeGeer, *Brachycaudus cardui* (L.), *B. helichrysi* (Kalt.), *Brevicoryne brassicae* (L.), *Capitophorus* sp., *Dysaphis crataegi* (Kalt.), *D. plantaginea* (Pass.), *Hyadaphis foeniculi* (Pass.), *Macrosiphum euphorbiae* (Thomas), *Myzus cerasi* (F.), *M. ligustri* (Mosley), *M. persicae* (Sulzer), *M. varians* Dav., *Phorodon humuli* (Schränk), *Rhopalosiphum maidis* (Fitch), *R. padi* (L.), *Toroptera aurantii* (Fonse.), *Vesiculaphis caricis* (Full.).
- Ephedrus persicae* Froggatt, 1904. Agr. Gaz. N. S. W. 15: 611. ♀.
- Ephedrus nevadensis* Baker, 1909. Pomona Jour. Ent. 1: 23. ♀, ♂.
- Ephedrus nitidus* Gahan, 1917. U. S. Natl. Mus., Proc. 53: 195. ♀.
- Ephedrus vidali* Quilis, 1931. Eos 7: 72. ♀.
- Ephedrus pulchellus* Stelfox, 1941. Roy. Irish Acad. Sci., Proc. 46: 139. ♀.
- Ephedrus interstitialis* Watanabe, 1941. Insecta Matsumurana 15: 139. ♀.
- Ephedrus impressus* Granger, 1949. Inst. Sci. Madagascar, Mem. (A) 2: 412. ♀, ♂.
- Ephedrus (Ephedrus) holmani* Stary, 1958. Acta Faun. Ent. Mus. Natl. Pragae 3: 68. ♀, ♂.
- Taxonomy: Mackauer, 1962. Beitr. z. Ent. 12: 632-633. — Mackauer, 1963. Ztschr. f. Angew. Ent. 52: 343-354. — Mackauer, 1963. Canad. Ent. 95: 924.
- Biology: Stary, 1962. Entomophaga 7: 91-100. — Mackauer, 1965. Canad. Ent. 97: 1019-1021.
- plagiator** (Nees). Calif. ?, Ill. ?; Palearctic. Liberated in Calif. and Ill. but not known to be established. Introduced from Taiwan and Japan. Host: *Macrosiphum rosae* (L.), *Rhopalosiphum maidis* (Fitch).
- Bracon plagiator* Nees, 1811. Gesell. Naturf. Freunde Berlin, Verh. 5: 17. ♀, ♂.
- Aphidius parcicornis* Nees, 1834. Hym. Ichn. Aff. Monog., v. 1, p. 16. ♀, ♂.
- Ephedrus japonicus* Ashmead, 1906. U. S. Natl. Mus., Proc. 30: 187. ♀, ♂.
- Biology: Jackson, et al., 1974. Environ. Ent. 3: 618-620.

Genus TOXARES Haliday

Aphidius subg. *Trionyx* Haliday, 1833. Ent. Mag. 1: 261, 487. Preocc. by Geoffroy (1809) and Oken (1816).

Type-species: *Aphidius (Trionyx) deltiger* Haliday. Monotypic.

Torares Haliday, 1840. In Westwood, Intro. Mod. Class. Ins., vol. 2, Generic synopsis. p. 65.

New name for *Trionyx* Haliday.

Teronyx Haldeman, 1842. Acad. Nat. Sci. Phila., Proc. 1: 191. New name for *Trionyx* Haliday.

A Holarctic genus composed of two species, only one of which is found in North America. The host range is not clearly defined but it is possibly restricted to the subfamily Aphidinae.

deltiger (Haliday). Canada. Host: *Acyrtosiphon caraganae* (Cholod.), *Dysaphis plantaginea* (Pass.), *Myzus certus* (Wlkr.), *M. persicae* (Sulzer).

Aphidius (Trionyx) deltiger Haliday, 1833. Ent. Mag. 1: 487. ♀, ♂.

Ephedrus flaveolus Gyorfi, 1958. Acta Zool. Hung. 4: 131. ♂.

SUBFAMILY PRAINAE

Genus PRAON Haliday

Aphidius subg. *Praon* Haliday, 1833. Ent. Mag. 1: 261, 483.

Type-species: *Bracon exoletus* Nees. Monotypic.

Bracon subg. *Achoristus* Ratzeburg, 1852. Ichn. d. Forstins., v. 3, p. 31.

Type-species: *Bracon (Achoristus) aphidiiformis* Ratzeburg. Monotypic.

Aphidaria Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 152.

Type-species: *Aphidaria simulans* Provancher. Monotypic.

Species in this genus are solitary endoparasites of larval and adult aphids. Pupation is in a separate cocoon underneath the dead host aphid. The genus occurs in the Holarctic and Oriental Regions.

- Revision: Gahan, 1911. Md. Agr. Expt. Sta., Bul. 152: 161-166 (No. Amer. spp.). —Smith, 1944. Aphidiinae of North America, pp. 22-32 (No. Amer. spp.). —Mackauer, 1959. Beitr. z. Ent. 9: 810-865. (Eur. spp.).
- Taxonomy: Mackauer, 1964. Beitr. z. Ent. 14: 685-687. —Mackauer, 1968. Hym. Cat., part 3, pp. 14-21 (cat. World spp.).
- Biology: Ainslie, 1917. Ent. News 28: 364-367. —Mackauer, 1959. Beitr. z. Ent. 9: 812-815. —Mackauer and Stary, 1967. Index World Aphidiidae, pp. 23-34 (host list).
- Morphology: Sedlag, 1956. Deut. Zool. Gesell., Verh. 1956: 356-361 (genitalia). —Mackauer, 1959. Beitr. z. Ent. 9: 812-815 (cocoon). —Schlinger and Hall, 1960. Ent. Soc. Amer., Ann. 53: 144-160 (genitalia, egg, larvae). —Eastop, 1966. Roy. Ent. Soc. London, Proc. (A) 41: 42-44 (mouthparts).
- abjectum** (Haliday). Greenland. Host: *Aphis craccivora* Koch, *A. fabae* Scop., *A. farinosa* Gmelin, *A. sambuci* L., *Rhopalosiphum padi* (L.).
Aphidius (*Praon*) *abjectus* Haliday, 1833. Ent. Mag. 1: 485. ♀.
Bracon (*Achoristus*) *aphidiiformis* Ratzeburg, 1852. Ichtn. d. Forstins., v. 3, p. 11. ♀.
- aguti** Smith, N. B. and Ont. s. to Va.; Mich., Idaho, Calif. Host: *Acyrtosiphon pisum* (Harr.), *A. solani* (Kalt.), *Macrosiphoniella abrotani* (Wlkr.), *M. frigidicola* G. and P., *Macrosiphum euphorbiae* (Thomas), *M. rosae* (L.), *Myzus persicae* (Sulzer), *Neomyzus circumflexus* (Buckton).
Praon aguti Smith, 1944. Aphidiinae of North America, p. 23. ♀, ♂.
- Biology: Sekhar, 1957. Ent. Soc. Amer., Ann. 50: 370-375. —Sekhar, 1958. Ent. Soc. Amer., Ann. 51: 1-7. —Sekhar, 1959. Current Sci. 28: 333-335. —Sekhar, 1960. Canad. Jour. Zool. 38: 593-603.
- alaskense** Ashmead. Alaska, Canada.
Praon alaskensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 243. ♂.
- americanum** (Ashmead). Maine, Ind. Host: *Macrosiphum avenae* (F.), *Myzus persicae* (Sulzer), *Rhopalosiphum padi* (L.).
Diaeretus americanus Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 669. ♂.
Diaeretus websteri Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 669. ♂.
Diaeretus brunneiventris Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 670. ♂.
- artemisaphis** Smith. Utah, Wash. Host: *Macrosiphoniella coveni* (Hunter).
Praon artemisaphis Smith, 1944. Aphidiinae of North America, p. 26. ♀.
- cerasaphis** (Fitch). N. Y. Single male in U. S. Natl. Mus. in poor condition; exact placement uncertain.
Trioxys cerasaphis Fitch, 1855 (1854). Agr. Soc. State N. Y., Trans. 14: 842.
- coloradense** Ashmead. Colo., Wash.
Praon coloradensis Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 20. ♂.
- exoletum palitans** Muesebeck. N. J., Del., Md., Ky., Nebr., Kans., Colo., N. Mex., Utah, Ariz., Nev., B. C., Calif.; Mediterranean. Introduced from Southern Europe and Near East.
Host: *Therioaphis riehmii* (Borner), *T. trifolii* (Monell). *P. exoletum exoletum* (Nees) is European.
Praon palitans Muesebeck, 1956. Brooklyn Ent. Soc., Bul. 51: 27. ♀, ♂.
- Taxonomy: Mackauer, 1959. Beitr. z. Ent. 9: 832 (subspecies of *exoletum* Nees). —Stary, 1966. Aphid Parasites of Czechoslovakia, p. 42 (synonym of *exoletum* Nees).
- Biology: Schlinger and Hall, 1959. Jour. Econ. Ent. 52: 154-157. —Schlinger and Hall, 1960. Ent. Soc. Amer., Ann. 53: 144-160. —Finney, *et al.*, 1960. Jour. Econ. Ent. 53: 655-659. —Force and Messenger, 1964. Ecology 45: 706-715. —Force and Messenger, 1965. Ecology 46: 853-859.
- Morphology: Schlinger and Hall, 1960. Ent. Soc. Amer., Ann. 53: 144-160.
- humulaphidis** Ashmead. N. Y., Md., Va., Mich., Ohio, Ark., Tex. Host: *Dactynotus illini* (H. and F.).
Praon humulaphidis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 657. ♀.
Praon virginianensis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 657. ♀.

myzophagum Mackauer. Calif. ?; Europe. Liberated in Calif. but not known to be established.

Introduced from Israel. Host: *Myzus certus* (Wlkr.), *M. persicae* (Sulzer).

Praon volucre myzophagum Mackauer, 1959. Beitr. z. Ent. 9: 847. ♀, ♂.

nanus Baker. Nev. Host: *Rhopalosiphum fitchii* (Sanderson).

Praon nanus Baker, 1909. Pomona Jour. Ent. 1: 23. ♂.

Taxonomy: Mackauer, 1963. Canad. Ent. 95: 925-926 (possibly synonym of *Praon americanum* Ashmead).

negundinis Smith. Canada, Ohio, Iowa. Host: *Periphyllus lyropictus* (Kess.), *P. negundinis* (Thomas).

Praon negundinis Smith, 1944. Aphidiinae of North America, p. 27. ♀, ♂.

occidentale Baker. Canada, northern U. S. Host: *Acyrtosiphon pisum* (Harr.), *A. solani* (Kalt.), *Aphis nasturtii* Kalt., *Macrosiphum euphorbiae* (Thomas), *M. rosae* (L.), *Myzus persicae* (Sulzer).

Praon occidentale Baker, 1909. Pomona Jour. Ent. 1: 23. ♀.

Taxonomy: Mackauer, 1963. Canad. Ent. 95: 926-927. —Mackauer and Finlayson, 1967. Canad. Ent. 99: 1059-1061.

Biology: Schlinger, 1960. Jour. Econ. Ent. 53: 151-154. —Schlinger and Hall, 1960. Ent. Soc. Amer., Ann. 53: 410.

pequodorum Viereck. U. S. and southern Canada. Host: *Acyrtosiphon pisum* (Harr.), *A. solani* (Kalt.).

Praon pequodorum Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22: 259. ♀.

Taxonomy: Mackauer and Finlayson, 1967. Canad. Ent. 99: 1053-1057.

Biology: Shands, et al., 1965. Maine Agr. Expt. Sta., Bul. T19: 1-77. —Halfhill and Dickie, 1972. Environ. Ent. 1: 402-405 (history of releases).

simulans (Provancher). Md., Ont. Host: *Dactynotus ambrosiae* (Thomas), *D. rudbeckiae* (Fitch).

Aphidaria simulans Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 153. ♀, ♂.

Biology: Spencer, 1926. Ent. Soc. Amer., Ann. 19: 119-157.

unicum Smith. Colo., Utah, Wash., Calif. Host: *Aphis spiraeicola* Patch, *A. fabae* Scop., *A. rumicis* L., *Myzus persicae* (Sulzer), *Ovatus crataegarius* (Wlkr.).

Praon unicum Smith, 1944. Aphidiinae of North America, p. 30. ♀, ♂.

Biology: Schlinger, 1960. Jour. Econ. Ent. 53: 151-154. —Schlinger and Hall, 1960. Ent. Soc. Amer., Ann. 53: 411.

volucre (Haliday). Ill.; Europe. Reportedly adventive from England.

Aphidius (*Praon*) *volucre* Haliday, 1833. Ent. Mag. 1: 484. ♀, ♂.

Biology: Mackauer and Stary, 1967. Index World Aphidiidae, pp. 33-34 (host list).

SUBFAMILY APHIDIINAE

All species are solitary endoparasites of larval and adult aphids, and pupation is inside the mummified host. The subfamily is cosmopolitan in distribution.

TRIBE APHIDIINI

SUBTRIBE LYSIPHLEBINA

Genus LYSIPHLEBUS Foerster

Genus LYSIPHLEBUS Subgenus LYSIPHLEBUS Foerster

Lysiphlebus Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 248.

Type-species: *Bracon dissolutus* Nees. Monotypic.

Members of the typical subgenus are not known in North America.

Genus *LYSIPHLEBUS* Subgenus *ADIALYTUS* Foerster

Adialytus Foerster, 1863. Naturh. Ver. Rheinlande, Verh. 19: 249.

Type-species: *Adialytus tenuis* Foerster. Orig. desig.

The host range is apparently restricted to aphids in the subfamilies Chaitophorinae and Thelaxinae (Aphididae).

Taxonomy: Stary, 1960. Acta Soc. Ent. Cech. 57: 244 (redescription). —Stary, 1966. Aphid Parasites of Czechoslovakia, pp. 80-92 (Eur. spp., in *Lysiphlebus*). —Mackauer, 1968. Hym. Cat., part 3, pp. 23-24 (cat. World spp., host list). —Stary, 1975. Annot. Zool. Bot., n. 105, p. 1-9.

arvicola Stary. Canada.; Europe.

Lysiphlebus arvicola Stary, 1961. Polskie Pismo Ent. 31: 98. ♀, ♂.

Lysiphlebus mackaueri Stary, 1961. Acta Faun. Ent. Mus. Natl. Pragae 7: 141. New name for *Lysiphlebus innovatus* Quilis sensu Mackauer (1960. Beitr. z. Ent. 10: 608) nec Quilis (1931. Eos 7: 39).

Lysiphlebus crocinus Mackauer, 1962. Deut. Ent. Gesell., Mitt. 21: 12. ♀, ♂.

fuscicornis (Ashmead). Conn., Ont., Tenn., S. Dak., Mont., Idaho, Calif. Host: *Aphis armoraciae* Cowen, *A. forbesi* Weed.

Lipolexis fuscicornis Ashmead, 1891. Canad. Ent. 23: 7. ♀.

salicaphis (Fitch). N. Y., Ohio, Sask., Colo., Utah, Wash., Calif.; Palearctic. Host: *Chaitophorus populicola* (Thomas), *C. viminalis* (Monell).

Trioxys salicaphis Fitch, 1855 (1854). Agr. Soc. State N. Y., Trans. 14: 841. ♀.

Trioxys populaphis Fitch, 1855 (1854). Agr. Soc. State N. Y., Trans. 14: 841. ♂.

Lipolexis salicaphidis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 671. ♀, ♂.

Aphidius (*Diaeretus*) *laticephalus* Telenga, 1953. Trudy Inst. Zool. Parazit. Tashkent 1: 172. ♀.

Taxonomy: Gahan, 1911. Ent. Soc. Wash., Proc. 12: 182 (as *Diaeretus salicaphis* (Fitch)).

—Smith, 1944. Aphidiinae of North America, p. 102 (as *Diaeretus salicaphis* (Fitch)).

Biology: Schlinger and Hall, 1960. Ent. Soc. Amer., Ann. 53: 409.

Genus *LYSIPHLEBUS* Subgenus *PHLEBUS* Stary

Lysiphlebus subg. *Phlebus* Stary, 1975. Annot. Zool. Bot., n. 105, p. 6.

Type-species: *Aphidius fabarum* Marshall. Orig. desig.

Revision: Gahan, 1911. Md. Agr. Expt. Sta., Bul. 152: 184-189 (No. Amer. spp.). —Smith, 1944. Aphidiinae of North America, pp. 76-84 (No. Amer. spp. as subgenus of *Aphidius*). —Mackauer, 1960. Portici Lab. Ent. Agr., Bol. 18: 230-256 (No. Amer. spp.). —Mackauer, 1960. Beitr. z. Ent. 10: 582-623 (Palearctic spp.).

Taxonomy: Stary, 1961. Acta Faun. Ent. Mus. Natl. Pragae 7: 131-142. —Mackauer, 1961. Beitr. z. Ent. 11: 792-803. —Mackauer, 1968. Hym. Cat., part 3, pp. 24-30 (cat. World spp.). —Stary, 1975. Annot. Zool. Bot., n. 105, p. 1-9.

Biology: Mackauer and Stary, 1967. Index World Aphidiidae, pp. 39-47 (host list).

Morphology: Tremblay, 1964. Portici Lab. Ent. Agr., Bol. 22: 1-122 (mouthparts, genitalia, egg, larvae, cocoon). —Eastop, 1966. Roy. Ent. Soc. London, Proc. (A) 41: 42-44 (mouthparts).

distinctus Mackauer. Idaho, Nev. Host: *Microsiphum acophorum* S. and K., *M. oregonensis* (Wilson).

Lysiphlebus (*Lysiphlebus*) *distinctus* Mackauer, 1960. Portici Lab. Ent. Agr., Bol. 18: 236. ♀, ♂.

Aphidius (*Lysiphlebus*) *knowltoni* Smith, in part, 1944. Aphidiinae of North America, p. 80.

fabarum (Marshall). Calif. ?; Palearctic. Liberated in Calif. but not known to be established.

Introduced from Lebanon. Host: Aphidinae. Parasitic on most species of Aphidinae, on *Myzus-Brachycandus* series and, occasionally on *Macrosiphum*, *Dactynotus*, and related genera.

Aphidius fabarum Marshall, 1896. In Andre, Spec. Hym. Eur. Alg., v. 5, p. 599. ♀, ♂.

- Aphidius cardui* Marshall, 1896. In Andre, Spec. Hym. Eur. Alg., v. 5, p. 593. ♀, ♂.
Aphidius aurantii Pierantoni, 1907. Atti Ist. Sci. Nat. Napoli 59: 2. ♀, ♂.
Aphidius gomezi Quilis, 1930 (1929). Patol. Veg. Ent. Agr., Bol. 4: 55. ♀, ♂.
Aphidius janinii Quilis, 1930 (1929). Patol. Veg. Ent. Agr., Bol. 4: 61. ♀, ♂.
Lysiphlebus innovatus Quilis, 1931. Eos 7: 39. ♀, ♂.
Lysiphlebus moroderi Quilis, 1931. Eos 7: 43. ♀, ♂.
Lysiphlebus fabarum var. *inermis* Quilis, 1931. Eos 7: 46. ♀.

Taxonomy: Mackauer, 1960. Beitr. z. Ent. 10: 598-604, 612-617. — Mackauer, 1961. Beitr. z. Ent. 11: 136-138. Literature records prior to 1960 are of doubtful identity and may pertain to other *Lysiphlebus* species (Mackauer and Stary, 1967, Index World Aphidiidae, p. 42).

Biology: Quilis, 1930. Patol. Veg. Ent. Agr., Bol. 4: 49-64. — Quilis, 1931. Eos 7: 30-46.
 — Ivanova-Kass, 1956. Ent. Obozr. 35: 245-261 (embryology). — Tremblay, 1964. Portici Lab. Ent. Agr., Bol. 22: 1-122. — Mackauer and Stary, 1967. Index World Aphidiidae, pp. 42-42 (host list).

flavidus Gahan. Ohio, Nebr., Colo. Host: *Aphis albipes* Oestl., *A. debilicornis* G. and P., *Aphthargelia symphoricarpi* (Thomas).

Lysiphlebus flavidus Gahan, 1911. Md. Agr. Expt. Sta., Bul. 152: 186. ♀.

knowltoni (Smith). Idaho, Utah, Wash. Host: *Artemisaphis artemisicola* (Wms.), *Microsiphum acophorum* S. and K.

Aphidius (Lysiphlebus) knowltoni Smith, in part, 1944. Aphidiinae of North America, p. 80. ♀, ♂.

testaceipes (Cresson). Very common throughout temperate North America and South America. Host: Aphidiinae. Widely polyphagous; host range includes most species of Aphidiinae, *Myzus-Brachycaudus* series and occasionally *Macrosiphum* and related genera (Mackauer and Stary, 1967. Index World Aphidiidae, p. 45).

Trioxys testaceipes Cresson, 1880. U. S. Dept. Agr. Ann. Rpt. for 1879, p. 208. ♀.

Aphidius citraphidis Ashmead, 1880. Orange Insects, p. 70. ♀, ♂.

Adialytus maidaphidis Garman, 1885. In Forbes, Ill. State Ent., Rpt. 14: 31. ♀, ♂.

Aphidius flavicoxa Ashmead, 1888. Fla. Agr. Expt. Sta., Bul. 2: 23. ♀, ♂.

Aphidaria basilaris Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 396. ♀, ♂.

Lysiphlebus minutus Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 663, 664. ♀, ♂.

Lysiphlebus piceiventris Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 664. ♂, not ♀.

Lysiphlebus curcurbitaphidis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 665. ♀, ♂.

Lysiphlebus eragrostaphidis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 665. ♀, ♂.

Lysiphlebus coquillettii Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 665. ♀, ♂.

Lysiphlebus myzi Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 666. ♀, ♂.

Lysiphlebus gossypii Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 667. ♀, ♂.

Lysiphlebus abutilaphidis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 667. ♀, ♂.

Lysiphlebus tritici Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 668. ♀, ♂.

Lysiphlebus persicaphidis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 668. ♀.

Lysiphlebus baccharaphidis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 668. ♀, ♂.

Aphidius persiaphis Cook, 1891. Mich. Agr. Col., Bul. 73: 12. ♂.

Aphidius (Lysiphlebus) chrysoaphidis Smith, 1944. Aphidiinae of North America, p. 78. ♀, ♂.

Taxonomy: Mackauer, 1960. Portici Lab. Ent. Agr., Bol. 18: 244-249. — Mackauer, 1960. Beitr. z. Ent. 10: 612-617.

Biology: Sekhar, 1957. Ent. Soc. Amer., Ann. 50: 370-375. — Sekhar, 1959. Curr. Sci. 28: 333-335. — Sekhar, 1960. Canad. Jour. Zool. 38: 593-603. — Schlinger and Hall, 1960. Ent. Soc. Amer., Ann. 53: 407-409. — Mackauer and Stary, 1967. Index World Aphidiidae, pp. 45-46 (host list).

utahensis (Smith). Idaho, Utah, Calif. Host: *Macrosiphoniella coweni* (Hunter).

Aphidius (Lysiphlebus) utahensis Smith, 1944. Aphidiinae of North America, p. 83. ♀, ♂.

viburnaphis (Fitch). N. Y. Considered as probably conspecific with *testaceipes* (Cresson) by Mackauer (1960. Portici Lab. Ent. Agr., Bol. 18: 253). Two syntypes in poor condition are in the U. S. National Museum.

Praon viburnaphis Fitch, 1855 (1854). Agr. Soc. State N. Y., Trans. 14: 841.

SUBTRIBE PROTAPHIDIINA

Genus CHAETOPAUESIA Mackauer

Chaetopauesia Mackauer, 1967. Entomophaga 12: 141.

Type-species: *Chaetopauesia talis* Mackauer. Orig. desig.

crassicornis (Ashmead). Ont.

Aphidius crassicornis Ashmead, 1891. Canad. Ent. 23: 5. ♂.

talis Mackauer. Ont.

Aphidius brevicornis Ashmead, 1891. Canad. Ent. 23: 6. ♀. Nomen nudum.

Chaetopauesia talis Mackauer, 1967. Entomophaga 12: 142. ♀.

Genus PAUESIA Quilis

Pauesia Quilis, 1931. Eos 7: 67.

Type-species: *Pauesia albuferensis* Quilis. Orig. desig.

Aphidius subg. *Paraphidius* Stary, 1958. Acta Faun. Ent. Mus. Natl. Pragae 3: 91. New name for *Protaphidius* Ashmead of authors, not Ashmead, 1900.

Type-species: *Aphidius californicus* Ashmead. Orig. desig.

The genus *Pauesia* corresponds to Section II, Pinicolae, of the genus *Aphidius* Nees as defined by Haliday (1834. Ent. Mag. 2: 95). Prior to 1958, the species in *Pauesia* were included in various genera besides *Aphidius*: Szepligeti (1904. In Wytsman, Gen. Ins., fasc. 22, p. 185) placed these species in the genus *Coelonotus* Foerster; Smith (1944. Aphidiinae of North America, pp. 37-49) placed them in *Aphidius* (*Protaphidius*) Ashmead; *Coelonotus* Foerster as used by Thompson (1895. Opusc. Ent. 20: 2334) is a misspelling of *Coelonotus* Foerster. Hosts are restricted to aphids of the subfamily Lachninae. *P. albuferensis* Quilis, 1931, type-species of the genus, is now considered to be a synonym of *Aphidius unilachni* Gahan, 1926.

Revision: Smith, 1944. Aphidiinae of North America, pp. 37-49 (No. Amer. spp.). —Stary, 1960. Acta Faun. Ent. Mus. Natl. Pragae 6: 5-44 (Eur. spp.). —Watanabe and Takada, 1965. Insecta Matsumurana 28: 1-17 (Jap. spp.).

Taxonomy: Fahringer, 1937. Festschr. E. Strand 3: 240-245 (key Eur. spp.). —Mackauer 1961. Beitr. z. Ent. 11: 106-108. —Mackauer, 1968. Hym. Cat., part 3, pp. 31-39 (cat. World spp.).

Biology: Mackauer and Stary, 1967. Index World Aphidiinae, pp. 48-58 (host list).

bicolor (Ashmead). N. J. s. to Fla.; Ohio, Wis. Host: *Cinara cronartii* T. and P., *C. pergandeii* (Wilson), *C. pini* (L.), *C. strobi* (Fitch).

Aphidius bicolor Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 658. ♀.

Aphidius (*Protaphidius*) *scorpinicus* Smith, 1944. Aphidiinae of North America, p. 45. ♀, ♂.

californica (Ashmead). Va., Ont., Ohio, S. Dak., Alta., B. C., Calif. Host: *Schizolachnus piniradiatae* (Davidson), *S. parvus* (Wilson).

Aphidius californicus Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 660. ♀.

gillettei (Gahan). S. C., Ky., La., Ark., Colo. Host: *Cinara* sp.

Aphidius gillettei Gahan, 1911. Md. Agr. Expt. Sta., Bul. 152: 171. ♀.

juniperaphidis (Gahan). Ohio, Colo., Idaho, B. C. Host: *Cinara juniperi* (DeG.), *C. occidentalis* (David.), *C. pulverulens* (G. and P.).

Aphidius juniperaphidis Gahan, 1911. Md. Agr. Expt. Sta., Bul. 152: 174. ♀, ♂.

macrogaster (Ashmead). Ont. Host: *Cinara abieticola* (Cholod.).

Aphidius macrogaster Ashmead, 1891. Canad. Ent. 23: 5. ♂.

nigrovaria (Provancher). Calif. Host: *Cinara* sp.

Aphidius nigrovarius Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 396. ♀.

pinaphidis (Ashmead). Fla., La. Host: *Cinara australis* (Ashmead), *C. longispinosa* Tissot.

Aphidius pinaphidis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 659. Nomen nudum.

Aphidius pinaphidis Ashmead, 1891. Canad. Ent. 23: 6. ♀, ♂.

ponderosae (Muesebeck). B. C., Calif. Host: *Cinara* sp.

Aphidius (*Protaphidius*) *ponderosae* Muesebeck, 1958. Ent. News 69: 141. ♀, ♂.

- procephali** (Ashmead). Pa., D. C., Va., N. C., Ohio, Minn., Nebr., Wash. Host: *Cinara pergandei* (Wilson), *C. abieticola* (Cholod.).
Aphidius procephali Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 659. ♂.
Aphidius (*Protafpidius*) *prociphalis* Ashmead: Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 93. Unjustified emendation.
- salignae** (Watanabe). Western U. S. (teste Mackauer, 1968. Hym. Cat., part 3, p. 37). Host: *Tuberolachnus salignus* (Gmelin).
Aphidius salignae Watanabe, 1939. Insecta Matsumurana 13: 81. ♀, ♂.
- takomaensis** (Smith). Md., Va., N. C., Sask., Colo. Host: *Cinara hottesi* (G. and P.), *C. ponderosae* (Wms.).
Aphidius (*Protafpidius*) *takomaensis* Smith, 1944. Aphidiinae of North America, p. 46. ♀, ♂.
- varigata** (Smith). Colo., B. C., Calif. Host: *Cinara canatra* H. and B., *C. fornacula* Hottes, *C. hottesi* (G. and P.).
Aphidius (*Protafpidius*) *varigatus* Smith, 1944. Aphidiinae of North America, p. 47. ♀.
- xanthothera** (Smith). East. Canada, N. C., S. C., Ala., Ark., Okla. Host: *Cinara carolina* Tissot, *C. pergandei* (Wilson), *C. pinea* (Mord.), *C. strobis* (Fitch), *C. watsoni* Tissot.
Aphidius (*Protafpidius*) *xanthotherus* Smith, 1944. Aphidiinae of North America, p. 48. ♀, ♂.

Genus XENOSTIGMUS Smith

- Aphidius* subg. *Xenostigmus* Smith, 1944. Aphidiinae of North America, p. 36.
 Type-species: *Aphidius bifasciatus* Ashmead. Orig. desig.
- bifasciatus** (Ashmead). Canada, Md., Va., N. C., S. C., Fla., Nebr., Okla., Tex., Utah, Wash., Calif. Host: *Cinara australis* (Ashm.), *C. carolina* Tissot, *C. hottsei* (G. and P.), *C. pseudotaxifoliae* Palmer, *C. taedae* Tissot.
Aphidius bifasciatus Ashmead, 1891. Canad. Ent. 23: 6. ♀.

SUBTRIBE APHIDIINA

Genus EUAPHIDIUS Mackauer

- Aphidius* subg. *Euaphidius* Mackauer, 1961. Beitr. z. Ent. 11: 110.
 Type-species: *Aphidius pterocommae* Ashmead. Orig. desig.
- A small Holarctic genus whose host range is apparently restricted to Chaitophorinae and primitive Aphidinae, mainly *Pterocomma* species.
- Taxonomy: Mackauer, 1961. Beitr. z. Ent. 11: 801 (raised to generic status).
- cingulatus** (Ruthe). Greenland, N. B., Mass., D. C., Mich., Ohio, Iowa, Utah, N. Mex., Calif.; Europe, Iran. Host: *Pterocomma bicolor* (Oest.), *P. populeum* (Kalt.), *P. populifoliae* (Fitch), *P. salicis* (L.), *P. smithiae* (Monell).
Aphidius cingulatus Ruthe, 1859. Stettin. Ent. Ztg. 20: 315. ♀, ♂.
Aphidius gregarius Marshall, 1872. Ent. Monthly Mag. 9: 123. ♀, ♂.
Aphidius pterocommae Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 659. ♂.
Aphidius lachni Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 660. ♀, ♂.
Aphidius pterocommae Marshall, 1896. In Andre, Spec. Hym. Eur. Alg., v. 5, p. 578. ♀.
- setiger** Mackauer. Canada; Europe. Host: *Periphyllus tyropictus* (Kessler), *P. testudinaceus* (Ferne).
Euaphidius setiger Mackauer, 1961. Portici Lab. Ent. Agr., Bol. 19: 273. ♀, ♂.

Genus APHIDIUS Nees

- Incubus* Schrank, 1802. Fauna Boica 2: 315. Suppressed by Internatl. Comn. Zool. Nomencl., Opinion 284, 1954.
 Type-species: *Ichneumon aphidum* L. Monotypic.
- Aphidius* Nees, 1818. Nova Acta Acad. Caes. Leop. Car. 9: 302.
 Type-species: *Aphidius avenae* Haliday. Desig. by Internatl. Comn. Zool. Nomencl., Opinion 284, 1954.

Theracmion Holmgren, 1872. Ofvers. K. Vet. Akad., Forh. 29: 99.

Type-species: *Theracmion arcticus* Holmgren. Monotypic.

A cosmopolitan genus of which many species are of doubtful identity. Host range is wide but mainly in the Aphididae.

Revision: Marshall, 1896. In Andre, Spec. Hym. Eur. Alg., v. 5, pp. 557-610 (Eur. spp.).

—Marshall, 1899. Ent. Soc. Lond., Trans. 1899: 37-71 (British spp.). —Gahan, 1911. Md. Agr. Expt. Sta., Bul. 152: 166-183 (No. Amer. spp.). —Smith, 1944. Aphidiinae of North America, pp. 34-84 (No. Amer. spp.). —Stary, 1966. Aphid Parasites of Czechoslovakia, pp. 83-86 (some Eur. spp.). —Stary and Schlinger, 1967. Rev. Far East Asian Aphidiidae, pp. 11-30 (East Asian spp.).

Taxonomy: Hincks, 1951. Zool. Nomencl., Bul. 4: 18-19 (nomenclature). —Mackauer, 1961.

Beitr. z. Ent. 11: 109-112. —Mackauer, 1968. Hym. Cat., part 3, pp. 42-58 (cat. World spp.). —Stary, 1974. Ztschr. f. Angew. Ent. 77: 141-171.

Biology: Hartley, 1922. Ohio Jour. Sci. 22: 209-237. —Boese, 1936. Ztschr. f. Parasitenk. 8:

243-284. —Ulyett, 1938. Dept. Agr. For. Un. S. Afr., Sci. Bul. 178: 1-28. —Stary, 1966. Aphid Parasites of Czechoslovakia, pp. 51-61.

Morphology: Short, 1952. Roy. Ent. Soc. London, Trans. 103: 80-82 (larvae). —Ivanova-Kasas,

1956. Prob. Sovr. Embryol. 1956: 199-204 (embryology). —Ivanova-Kasas, 1956. Ent. Obozr. 35: 245-261 (embryology). —Sedlag, 1956. Deutch. Zool. Gesell., Verh. 1956: 356-361 (female genitalia). —Wiackowski, 1962. Polski Pismo Ent. 32: 253-310 (egg, larvae, cocoon, adult).

—Eastop, 1966. Roy. Ent. Soc. London, Proc. (A) 41: 42-44 (mouthparts). —Eady, 1969. Roy. Ent. Soc. London, Proc., Ser. B., 38: 165-173 (petiole).

alius Muesebeck. Calif. Host: *Macrosiphum euphorbiae* (Thomas), *M. rosae* (L.).

Aphidius (*Aphidius*) *alius* Muesebeck, 1958. Ent. News 69: 142. ♀, ♂.

Biology: Schlinger, 1960. Jour. Econ. Ent. 53: 151-154. —Schlinger and Hall, 1960. Ent. Soc. Amer., Ann. 53: 405.

atropetiolatus Ashmead. Colo.

Aphidius atropetiolatus Ashmead, 1890. Colo. Biol. Assn., Bul. 1: 20. ♂.

avenaphis (Fitch). D. C., S. C., Ont., Mich., Ohio, Ind., Tenn., Mo., Calif. Host: *Acyrtosiphon solani* (Kalt.), *Macrosiphum euphorbiae* (Thomas), *M. avenae* (F.), *Myzus persicae* (Sulzer), *Rhopalosiphum padi* (L.).

Praon avenaphis Fitch, 1861. N. Y. State Agr. Soc., Trans. 20: 840.

Aphidius xanthus Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 661. ♂.

Aphidius granariaphis Cook, 1890. Canad. Ent. 22: 125. ♀, ♂.

colemani Viereck. Calif. ?; Mediterranean Europe, Asia, Africa, Australia, South America.

Liberated in California (as *platensis*) but not known to be established. Introduced from Brazil.

Aphidius colemani Viereck, 1912. U. S. Natl. Mus., Proc. 42: 141. ♀, ♂.

Aphidius platensis Brethes, 1913. Mus. Nac. Hist. Nat. B. Aires, An. 24: 41. ♀.

Aphidius hubrichi Brethes, 1913. Mus. Nac. Hist. Nat. B. Aires, An. 24: 41. "♀" = ♂.

Aphidius porteri Brethes, 1915. Ann. Zool. Apl. 2: 13. ♂.

Aphidius aphidiphilus Benoit, 1955. Mus. Roy. Congo Belge, Ann. 36: 349. ♀, ♂.

Aphidius Leroyi Benoit, 1955. Mus. Roy. Congo Belge, Ann. 36: 350. ♀.

Aphidius transcaspicus Telenga, 1958. Biol. Zh. Akad. Nauk Uzbekskoi 2: 55. ♀, ♂.

Taxonomy: Stary, 1975. Acta Ent. Bohemoslov. 72: 156-163.

Biology: Millan, 1956. Revta Invest. Agr. Buenos Aires 10: 243-280. —Mackauer and Stary, 1967. Index World Aphidiidae, p. 83-84 (intro. into Calif. as *platensis*). —Stary, 1972.

Orient. Ins. 6: 359-370 (distr. and host range as *platensis*).

coloratus Baker. Pa.

Aphidius coloratus Baker, 1909. Pomona Jour. Ent. 1: 24. ♀.

Taxonomy: Mackauer, 1963. Canad. Ent. 95: 928-930.

coloratus var. **ferruginosus** Baker. Wis. Considered to be a *species dubium* by Mackauer, 1963.

Aphidius coloratus var. **ferruginosus** Baker, 1909. Pomona Col. Jour. Ent. 1: 24. "♀" = ♂.

Taxonomy: Mackauer, 1963. Canad. Ent. 95: 931.

confusus Ashmead. Utah, Ariz., Wash., Calif. Host: *Dactynotus ambrosiae* (Thomas), *D. rudbeckiae* (Fitch), *Macrosiphoniella ludoviciana* (Oestl.), *Macrosiphum rosae* (L.).

Aphidius confusus Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 662. ♀.

Biology: Schlinger, 1960. Jour. Econ. Ent. 53: 151-154. —Schlinger and Hall, 1960. Ent. Soc. Amer., Ann. 53: 405.

delicatus Baker. Nev.

Aphidius delicatus Baker, 1909. Pomona Jour. Ent. 1: 24. ♂.

Taxonomy: Mackauer, 1963. Canad. Ent. 95: 928.

ervi Haliday. N. S. s. to Va. and Tenn., w. to Ont., Nebr., and Kans.; B. C., Wash., Oreg.; Europe, China, Taiwan, N. Afr., Mid. East. Introduced from France, Germany, Poland and Lebanon. However, according to Stary (1974), *ervi* may have occurred in North America prior to these releases. Host: *Acyrthosiphon caraganae* (Cholod.), *A. pisum* (Harr.), *Aphis* sp., *Aulacorthum solani* (Kalt.), *Macrosiphum* spp., *M. euphorbiae* (Thomas), *Microlophium evansi* (Theo.), *Myzus certus* (Walk.), *M. persicae* (Sulzer), *Rhopalosiphum padi* (L.). The exact identity and host range of *ervi* can not be stated for certain until an extensive study of the group is made. The present classification and host list is based on Stary (1974).

Aphidius (*Aphidius*) **ervi** Haliday, 1834. Ent. Mag. 2: 100. ♀, ♂.

Aphidius ulmi Marshall, 1896. In Andre, Spec. Hym. Eur. Alg., v. 5, p. 576. ♀, ♂.

Aphidius medicaginis Marshall, 1898. In Andre, Spec. Hym. Eur. Alg., v. 5bis, p. 249. ♀, ♂.

Aphidius fumipennis Gyorfi, 1958. Acta Zool. Hung. 4: 133. ♂.

Aphidius ervi nigrescens Mackauer, 1962. Beitr. z. Ent. 12: 642. ♀, ♂ (in part).

Aphidius caraganae Stary, 1963. Acta Ent. Mus. Natl. Pragae 55: 603. ♀, ♂.

Aphidius mirotarsi Stary, 1963. Acta Ent. Mus. Natl. Pragae 35: 605. ♀, ♂.

Taxonomy: Mackauer and Finlayson, 1967. Canad. Ent. 99: 1061-1066. —Stary, 1974. Ztschr. f. Angew. Ent. 77: 141-171.

Biology: Dunn, 1949. Bul. Ent. Res. 40: 97-122. —Mackauer, 1962. Ztschr. f. Angew. Ent. 50: 125-131. —Stary, 1962. Zool. Listy 11: 265-278. —Mackauer and Finlayson, 1967. Canad. Ent. 99: 1061-1066. —Mackauer and Campbell, 1972. Ent. Soc. Br. Col., Jour. 69: 54-58. —Halfhill and Dickie, 1972. Environ. Ent. 1: 402-405 (history of releases). —Campbell and Mackauer, 1973. Ztschr. f. Angew. Ent. 74: 47-55. —Stary, 1974. Ztschr. f. Angew. Ent. 77: 141-171.

floridaensis Smith. Fla., Tex. Host: *Aphis gossypii* Glover, *Dactynotus* sp., *D. ambrosiae* (Thomas).

Aphidius (*Aphidius*) **floridaensis** Smith, 1944. Aphidiinae of North America, p. 56. ♀, ♂.

glacialis Ashmead. Alaska.

Aphidius glacialis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 245. ♀.

hortensis Marshall. Ohio, Idaho, Utah, Wash.; Europe. Host: *Liosomaphis berberidis* (Kalt.).

Aphidius hortensis Marshall, 1896. In Andre, Spec. Hym. Eur. Alg., v. 5, p. 590. ♀, ♂.

Aphidius (*Aphidius*) **berberidis** Smith, 1944. Aphidiinae of North America, p. 54. ♀, ♂.

kakimiaphidis Smith. Colo., Utah. Host: *Kakimia cerei* G. and P.

Aphidius (*Aphidius*) **kakimiaphidis** Smith, 1944. Aphidiinae of North America, p. 58. ♀, ♂.

matricariae Haliday. Holarctic. Host: *Aphis fabae* Scopoli, *A. gossypii* Glover, *A. helianthi* Monell, *A. nasturtii* Kalt., *A. rumicis* L., *Acyrthosiphon solani* (Kalt.), *Brachycaudus cardui* (L.), *B. helichrysi* (Kalt.), *Brevicoryne brassicae* (L.), *Dysaphis plantaginea* (Pass.), *Hayhurstia atriplicis* (L.), *Myzus cerasi* (F.), *M. certus* (Wlkr.), *M. ligustri* (Mosley), *M. persicae* (Sulzer), *Neomyzus circumflexus* (Buckton), *Ovatus* sp., *Phorodon*

humuli (Schrank), *Rhopalosiphum padi* (L.), *Roepkea crataegifoliae* (Fitch), *Toxoptera aurantii* (Fonse.).

Aphidius (*Aphidius*) *cirsii* Haliday, 1834. Ent. Mag. 2: 101. ♀. Preocc. by Curtis, 1831.

Aphidius (*Aphidius*) *matricariae* Haliday, 1834. Ent. Mag. 2: 103. ♀.

Aphidius (*Aphidius*) *arundinis* Haliday, 1834. Ent. Mag. 2: 104. ♀.

Aphidius phorodontis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 662. ♀, ♂.

Aphidius polygoni Marshall, 1896. In Andre, Spec. Hym. Eur. Alg., v. 5, p. 602. ♀, ♂.

Aphidius lychnidis Marshall, 1896. In Andre, Spec. Hym. Eur. Alg., v. 5, p. 607. ♂.

Aphidius valentinus Quilis, 1931. Eos 7: 47. ♀.

Aphidius affinis Quilis, 1931. Eos 7: 48. ♀, ♂.

Aphidius arundinis var. *obscuriforme* Quilis, 1931. Eos 7: 50. ♀.

Aphidius renominatus Hincks, 1943. Ent. Monthly Mag. 79: 44. New name for *Aphidius cirsii* Haliday.

Aphidius (*Aphidius*) *nigriteleus* Smith, 1944. Aphidiinae of North America, p. 61. ♀, ♂.

Taxonomy: Schlinger and Mackauer, 1963. Ent. Soc. Amer., Ann. 56: 648-653 (also covers biology, distribution, and host range).

montanus Ashmead. Colo.

Aphidius montanus Ashmead, 1890. Colo. Biol. Assn., Bul. 1: 20. ♂.

nigripes Ashmead. N. B. s. to N. C., w. to Minn. and Kans.; B. C., Wash., Calif. Host:

Acyrtosiphon solani (Kalt.), *Amphorophora* sp., *Aphis nasturtii* Kalt., *Dactynotus ambrosiae* (Thomas), *D. erigeronensis* (Thomas), *Macrosiphum albifrons* Essig, *M. avenae* (F.), *M. creelii* Davis, *M. euphorbiae* (Thomas), *M. liriiodendri* (Monell), *M. rosae* (L.), *Myzus persicae* (Sulzer). Exact host range not established, but apparently a preference for *Macrosiphum* spp. Earlier associations of this species under the name *pulcher* Baker or *ervi pulcher* as a parasite of the pea aphid apparently all refer to *pisivorus* Smith. Specimens used by Smith (1941) to describe *rosae* Haliday in No. Amer. are actually *nigripes*.

Aphidius nigripes Ashmead, 1901. N. Y. State Mus., Bul. 47: 588. ♂.

Aphidius pulcher Baker, 1909. Pomona Jour. Ent. 1: 24. ♀. N. syn.

Taxonomy: Smith, 1941. Aphidiinae of No. Amer. p. 71 (as *rosae* Hal.). —Mackauer, 1963.

Canad. Ent. 95: 931-932 (as *pulcher*). —Stary, 1974. Ztschr. f. Angew. Ent. 77: 141-171 (as *pulcher*).

Biology: Schlinger, 1960. Jour. Econ. Ent. 53: 151-154. —Shands, et al., 1965. Maine Agr.

Expt. Sta., Bul. T19: 1-77. —Sullivan and van den Bosch, 1971. Ent. Soc. Amer., Ann. 64: 389-394.

obscuripes Ashmead. Ont. s. to S. C., w. to N. Dak. and Colo.; Wash., Oreg. Host: *Aphis nasturtii* Kalt., *Acyrtosiphon solani* (Kalt), *Macrosiphum euphorbiae* (Thomas), *M. avenae* (F.), *Rhopalosiphum fitchii* (Sand.), *R. padi* (L.).

Aphidius obscuripes Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 660. ♀, ♂.

ohioensis Smith. N. B., Ohio, Tenn., Ark., Kans., Idaho, Ariz., B. C., Wash., Calif. Host:

Dactynotus ambrosiae (Thomas), *D. rudbeckiae* (Fitch), *D. anomalae* (H. and F.), *D. erigeronensis* (Thomas), *D. illini* (H. and F.), *Macrosiphum euphorbiae* (Thomas).

Aphidius (*Aphidius*) *ohioensis* Smith, 1944. Aphidiinae of North America, p. 63. ♀, ♂.

picipes (Nees). N. J. ?; Europe. Liberated in N. J. but not known to be established. Introduced from Europe. Host: *Myzus persicae* (Sulzer).

Bracon picipes Nees, 1811. Gesell. Naturf. Freunde Berlin, Mag. 5: 28. ♀.

pisivorus Smith. No. Amer. Host: *Acyrtosiphon pisum* (Harris). Exact host range is not established for this species; earlier records of hosts other than the pea aphid apparently refer to *nigripes* Ashm. This species has erroneously been considered a synonym of *pulcher*; also, most of the specimens used by Smith (1941) to describe *nigripes* are actually *pisivorus*.

Aphidius pisivorus Smith, 1941. Ent. Soc. Amer., Ann. 34: 537. ♀, ♂.

Taxonomy: Smith, 1941. Aphidiinae of No. Amer., p. 60 (as *nigripes* in part). —Mackauer and Finlayson, 1967. Canad. Ent. 99: 1066-1070 (as *ervi pulcher*). —Stary, 1974. Ztschr. f. Angew. Ent. 77: 141-171.

- Biology: Cooke, 1963. U. S. Dept. Agr., Tech. Bul. 1287: 1-48 (as *pulcher*). — Mackauer and Finlayson, 1967. Canad. Ent. 99: 1066-1070 (as *ervi pulcher*). — Berry, 1969. Ent. Soc. Amer., Ann. 62: 1185-1189.
- polygonaphis** (Fitch). Que., N. B. s. to Fla. and La., w. to Wis. and Kans.; Utah. Host: *Dactynotus ambrosiae* (Thomas), *D. rudbeckiae* (Fitch), *D. luteola* (Wms.), *D. taraxaci* (Kalt.), *Macrosiphum euphorbiae* (Thomas), *M. liriiodendri* (Monell).
Praon polygonaphis Fitch, 1855 (1854). N. Y. State Agr. Soc., Trans. 14: 840. ♀.
Aphidius canadensis Provancher, 1881. Nat. Canad. 12: 204. ♀.
Aphidius obscurus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 152. ♂.
Aphidius pallidus Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 661. ♀.
Aphidius nigriceps Ashmead, 1891. Canad. Ent. 23: 6. ♂.
Lysiphlebus succineus Viereck, 1904. Kans. Acad. Sci., Trans. 19: 282. ♀.
- propinquus** Ashmead. Colo., Idaho, Calif., Alaska.
Aphidius propinquus Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 245. ♂.
Aphidius frigidus Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 246. ♀, ♂.
- ribis** Haliday. Northern U. S., southern Canada; Europe. Host: *Cryptomyzus ribis* (L.).
Aphidius (*Aphidius*) *ribis* Haliday, 1834. Ent. Mag. 2: 104. ♀.
Lysiphlebus ribaphidis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 664. ♀.
Aphidius scobiosae Marshall, 1896. In Andre, Spec. Hym. Eur. Alg., v. 5, p. 596. ♀, ♂.
Aphidius ribis Ashmead, 1898. Ent. Soc. Wash., Proc. 4: 167. ♀, ♂.
- Biology: Wheeler, 1923. Ent. Soc. Amer., Ann. 16: 1-29. — Mackauer, 1958. Ztschr. f. Angew. Ent. 43: 282-285. — Schlinger and Hall, 1960. Ent. Soc. Amer., Ann. 53: 407.
- rosae** Haliday. Holarctic. Host: *Macrosiphum rosae* (L.), *M. liriiodendri* (Monell).
Aphidius (*Aphidius*) *rosae* Haliday, 1834. Ent. Mag. 2: 97. ♀, ♂.
Aphidius rosarum Nees, 1834. Hym. Ichn. Aff. Monog., v. 1, p. 19. ♀, ♂.
Aphidius xanthostoma Bouche, 1834. Naturgesch. d. Ins. v. 1, p. 163. ♀, ♂.
Aphidius cancellatus Buckton, 1876. Monog. Brit. Aphides, v. 1, p. 111. ♀.
- rubifolii** Mackauer. B. C. Host: *Masonaphis maxima* Mason.
Aphidius rubifolii Mackauer, 1968. Ent. Soc. B. C., Jour. 65: 34. ♀, ♂.
- salicis** Haliday. N. B., Ont., Calif.; Palearctic. Host: *Cavariella aegopodii* (Scopoli), *C. pastinacae* (L.), *Hyadaphis foeniculi* (Pass.).
Aphidius (*Aphidius*) *salicis* Haliday, 1834. Ent. Mag. 2: 102. ♀, ♂.
Aphidius restrictus Nees, 1834. Hym. Ichn. Aff. Monog., v. 1, p. 22. ♀.
Aphidius duodecimarticulatus Ratzeburg, 1852. Ichn. d. Forstins., v. 3, p. 62. ♀.
Aphidius dauci Marshall, 1896. In Andre, Spec. Hym. Eur. Alg., v. 5, p. 601. ♀, ♂.
- schimitscheki** (Stary). B. C., Oreg.; Europe. Host: *Elatobium abietinum* Wlkr.
Lysaphidius schimitscheki Stary, 1960. Polskie Pismo Ent. 30: 363. ♀, ♂.
- Biology: von Scheller, 1963. Ztschr. f. Angew. Ent. 51: 258-284 (bionomics, as *Aphidius* (*Lysiphlebus*) sp.). — Kloft, et al., 1964. Ztschr. f. Angew. Ent. 55: 180-181 (geographical distribution).
- sicarius** Mackauer. N. B.; Palearctic. Host: *Betulaphis quadrituberculata* (Kalt.), *Calaphis* sp.
Aphidius sicarius Mackauer, 1961. Portici Lab. Ent. Agr., Bol. 19: 281. ♀, ♂.
Lysaphidius callipterinellae Takada, 1966. Insecta Matsumurana 28: 129. ♀, ♂.
- smithi** Sharma and Subba Rao. Apparently widely distributed in U. S. and Canada; India, Pakistan. Introduced from India. Host: *Acyrtosiphon pisum* (Harris), *Myzus persicae* (Sulzer) (in laboratory). Exact host range not established.
Aphidius (*Aphidius*) *smithi* Sharma and Subba Rao, 1959 (1958). Indian Jour. Ent. 20: 183. ♀, ♂.
- Taxonomy: Mackauer and Finlayson, 1967. Canad. Ent. 99: 1070-1072. — Stary, 1974. Ztschr. f. Angew. Ent. 77: 141-171.
- Biology: Hagen and Schlinger, 1960. Calif. Agr. 14: 5-6. — Wiakowski, 1960. Acad. Polon. Sci., Bul. 8: 503-508. — Wiakowski, 1962. Polskie Pismo Ent. 32: 253-310. — Mackauer and Bisdee, 1965. Ent. Soc. Ont., Proc. 95: 121-124. — Angalet and Coles, 1966. Jour. Econ. Ent. 59: 769-770. — Schlinger, et al., 1966. Ecology 47: 1049-1055. — van den Bosch, et al., 1967.

Ecology 48: 993-1000. —Clancy, 1967. Jour. Econ. Ent. 60: 1743. —Fox, *et al.*, 1967. Ent. Soc. Amer., Ann. 60: 1083-1087. —Thurston and Pass, 1967. Ent. Soc. Amer., Ann. 60: 708-709. —Mackauer, 1968. Entomophaga 13: 281-287. —Mackauer, 1970. Ent. Soc. Amer., Ann. 63: 342-343. —Stary, 1970. Lab. Ent. Agr. Portici, Boll. 28: 19-34. —Tamaki, *et al.*, 1970. Ent. Soc. Amer., Ann. 63: 973-980. —Pass and Par, 1971. Jour. Econ. Ent. 64: 1150-1153. —Stary, 1971. Ent. Soc. Fr., Ann. (N. S.) 7: 351-355. —Halfhill and Dickie, 1972. Environ. Ent. 1: 402-405 (history of releases). —Mackauer and Campbell, 1972. Environ. Ent. 69: 55-57. —Campbell and Mackauer, 1973. Ztschr. f. Angew. Ent. 74: 47-55. —Halfhill and Featherston, 1973. Environ. Ent. 2: 469-472. —Stary, 1974. Ztschr. f. Angew. Ent. 77: 141-171.

NOMINA NUDA IN APHIDIUS NEES

Aphidius fletcheri Ashmead, 1900. In Fletcher, Ent. Soc. Ont., Rpt. 30: 107.

Aphidius washingtonensis Ashmead, 1900. In Johnson, Can. Ent. 32: 60.

Genus LYSAPHIDUS Smith

Aphidius subg. *Lysaphidus* Smith, 1944. Aphidiinae of North America, p. 72.

Type-species: *Aphidius (Lysaphidus) adelocarinus* Smith. Orig. desig.

Revision: Smith, 1944. Aphidiinae of North America, pp. 72-76 (No. Amer. spp.). —Stary, 1960. Polskie Pismo Ent. 30: 357-366 (Eur. spp.). —Stary, 1966. Aphid Parasites of Czechoslovakia, pp. 88-89 (Czech. spp.). —Takada, 1966. Insecta Matsumurana 38: 127-130 (Jap. spp.).

Taxonomy: Mackauer, 1968. Hym. Cat., part 3, pp. 59-60 (cat. World spp.).

Biology: Mackauer and Stary, 1967. Index World Aphidiidae, pp. 82-85 (host list).

adelocarinus (Smith). Idaho, Utah, Calif. Host: *Capitophorus shepherdiae* G. and B., *Pleotrichophorus glandulosus* (Kalt.), *Pseudoepameibaphis glauca* G. and P., *P. xenotrichus* K. and S.

Aphidius (Lysaphidus) adelocarinus Smith, 1944. Aphidiinae of North America, p. 73. ♀, ♂.

multiarticulatus (Ashmead). Ind., Okla.

Lysiphlebus multiarticulatus Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 664. ♂.

ramithyrus (Smith). Utah, Calif. Host: *Pleotrichophorus gregarius* (Knowl.), *P. pseudoglandulosus* (Palmer).

Aphidius (Aphidus) ramithyrus Smith, 1944. Aphidiinae of North America, p. 75. ♀, ♂.

rosaphidis (Smith). N. B., N. J., N. C., Ohio. Host: *Chaetosiphon* sp. *C. fragaefolii* (Ckll.), *C. potentillae* (Wlkr.), *C. thomasi* H. R. L.

Aphidius (Lysaphidus) rosaphidis Smith, 1944. Aphidiinae of North America, p. 75. ♀, ♂.

Genus DIAERETIELLA Stary

Diaeretiella Stary, 1960. Acta Soc. Ent. Cechosl. 57: 242.

Type-species: *Aphidius rapae* M'Intosh. Orig. desig.

Prior to 1960, species in *Diaeretiella* were included mainly in *Aphidius* Nees and *Diaeretus* Foerster. At the present, the genus is composed of one cosmopolitan species.

Taxonomy: Stary, 1960. Acta Soc. Ent. Cechosl. 57: 238-239, 242-243. —Stary, 1961. Acta Ent. Mus. Natl. Praeae 34: 383-397. —Mackauer, 1961. Beitr. z. Ent. 11: 801. —Mackauer, 1964. Beitr. z. Ent. 14: 53-58.

rapae (M'Intosh). Cosmopolitan. Host: *Aphis craccivora* Koch, *A. fabae* Scop., *A. gossypii* Glover, *A. nasturtii* Kalt., *A. pomi* DeG., *A. rumicis* L., *Brachycolus asparagi* Mord., *Brachycaudus helichrysi* (Kalt.), *B. rumicicolens* (Patch), *Brevicoryne brassicae* (L.), *Capitaphorus* sp., *Dactynotus* sp., *Diuraphis noxius* (Mord.), *Hayhurstia atriplicis* (L.), *Hyadaphis foeniculi* (Pass.), *Lipaphis erysimi* (Kalt.), *Macrosiphum euphorbiae* (Thomas), *Myzus certus* (Wlkr.), *M. persicae* (Sulzer), *Protaphis* sp., *Rhopalosiphum fitchii* (Sand.), *R. maidis* (Fitch), *R. padi* (L.), *Schizaphis graminum* (Rond.). This is one of the more important economic species in the Aphidiidae. Although it has a wide host

range, including most species of Aphididae but with a preference for the *Myzus-Brachycaudus* series, it is largely responsible for the natural control of its main host, the cabbage aphid, *Brevicoryne brassicae* (L.).

Aphidius rapae M'Intosh, 1855. Book of the Garden, v. 2, p. 194. ♀.

Aphidius (*Trionyx*) *rapae* Curtis, 1860. farm Ins., p. 73. ♀. Preocc. by M'Intosh, 1855.

Diaeretus chenopodii Foerster, 1867. In Kirchner, Cat. Hym. Eur., p. 125. Nomen nudum.

Trioxys piceus Cresson, 1880. U. S. Dept. Agr. Ann. Rpt. for 1879, p. 260. ♀, ♂.

Lipolexis chenopodiaphidis Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 671. ♀, ♂.

Diaeretus ferruginipes Ashmead, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 61. Nomen nudum.

Aphidius brassicae Marshall, 1896. In Andre, Spec. Hym. Eur. Alg., v. 5, p. 597. ♀, ♂.

Diaeretus californicus Baker, 1909. Pomona Jour. Ent. 1: 25. ♀.

Lysiphlebus crawfordi Rohwer, 1909. Amer. Ent. Soc., Trans. 35: 135. ♀, ♂.

Diaeretus nipponensis Viereck, 1911. U. S. Natl. Mus., Proc. 40: 182. ♀, ♂.

Aphidius (*Diaeretus*) *obsoletus* Kurdjumov, 1913. ent. Obozr. 13: 25. ♀, ♂.

Diaeretus napus Quilis, 1931. Eos 7: 71. ♀.

Diaeretus croaticus Quilis, 1934. Eos 10: 8. ♀, ♂.

Diaeretus plesiorapae Blanchard, 1940. Rev. Chil. Hist. Nat. 44: 45. ♀, ♂.

Diaeretus aphidae Mukerji and Chatterjee, 1949. 36th Indian Sci. Cong., Proc. 3: 193.

Nomen nudum.

Diaeretus aphidum Mukerji and Chatterjee, 1950. Roy. Ent. Soc. London, Proc. (B) 19: 4. ♀, ♂.

Biology: Wheeler, 1923. Ent. Soc. Amer., Ann. 16: 17-19. —Schlinger and Hall, 1960. Ent. Soc. Amer., Ann. 53: 409. —Pimental, 1961. Jour. Econ. Ent. 54: 885-888. —Shands, *et al.*, 1965. Maine Agr. Expt. Sta., Bul. T19: 61-62.

TRIBE TRIOXINI

SUBTRIBE MONOCTONINA

Genus MONOCTONUS Haliday

Genus MONOCTONUS Subgenus MONOCTONUS Haliday

Aphidius subg. *Monoctonus* Haliday, 1833. Ent. Mag. 1: 487.

Type-species: *Aphidius* (*Monoctonus*) *caricis* Haliday. Monotypic.

Monoctonus subg. *Paramonoctonus* Stary, 1959. Acta Soc. Ent. Cechosl. 56: 238.

Type-species: *Monoctonus* (*Paramonoctonus*) *angustivalvus* Stary. Orig. desig.

This genus includes Section I, Falcigeri, of the genus *Aphidius* Nees as defined by Haliday (1834. Ent. Mag. 2: 94). These parasites seem to prefer the smaller host instars in the Aphidoidea, mainly subfamily Aphidinae.

Revision: Smith, 1944. Aphidiinae of North America, pp. 33-34 (No. Amer. spp.). —Stary, 1959. Acta Soc. Ent. Cechosl. 56: 237-250 (Eur. spp.). —Stary, 1966. Aphid Parasites of Czechoslovakia, pp. 70-72 (Czech. spp.). —Stary and Schlinger, 1967. Rev. Far East Asian Aphidiidae, pp. 77-81 (East Asian spp.).

Taxonomy: Mackauer, 1959. Senckenberg. Biol. 40: 179-180 (subgenera). —Mackauer, 1968. Hym. Cat., part 3, pp. 63-66 (cat. World spp.). —Stary and Smith, 1976. Ent. Soc. Wash., Proc. 78: 171-175 (distr., hosts, nomenclature).

Biology: Mackauer and Stary, 1967. Index World Aphidiidae, pp. 89-92 (host list).

caricis (Haliday). Maine, N. C., Minn., N. Dak., Wash.; Europe. Host: *Aulacorthum solani* (Katl.), *Pseudacaulella rubida* (Borner).

Aphidius (*Monoctonus*) *caricis* Haliday, 1833. Ent. Mag. 1: 261. ♀, ♂.

crepidis (Haliday). N. B., Que.; Europe. Host: *Nasonovia ribisnigri* (Mosley).

Aphidius (*Aphidius*) *crepidis* Haliday, 1834. Ent. Mag. 2: 94. ♀, ♂.

Aphidius tuberculatus Wesmael, 1835. Nouv. Mem. Acad. Sci. Bruxelles 9: 80. ♀.

Monoctonus paludum Marshall, 1896. In Andre, Spec. Hym. Eur. Alg., v. 5, p. 548. ♀.

- Biology: Griffiths, 1960. Bul. Ent. Res. 51: 303-319. —Griffiths, 1961. Bul. Ent. Res. 52: 147-163. —Mackauer, 1962. Canad. Ent. 94: 1089-1093.
- nervosus* (Haliday). Mich., Oreg., Calif., Alaska; Europe, Asia. Host: *Acyrtosiphon pisum* (Harris), *Amphorophora rubitoxica* Knowl., *Aphis rumicis* L., *Macrosiphum californicum* (Clarke), *M. euphorbiae* (Thomas), *Masonaphis grindeliae* Wms., *Myzus ornatus* Laing, *M. persicae* (Sulzer), *Rhopalosiphum padi* (L.), *Sitobion fragariae* (Wlkr.).
- Aphidius* (*Monoctonus*) *nervosus* Haliday, 1833. Ent. Mag. 1: 488. ♀, ♂.
- Aphidius paulensis* Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 246. ♀, ♂.
- Monoctonus secundus* Viereck, 1915. Calif. State Comm. Hort. Monthly Bul. 4: 28. ♀, ♂.
- Taxonomy: Stary, 1974. Ztschr. Angew. Ent. 75: 212-224.
- Biology: Calvert and van den Bosch, 1972. Ent. Soc. Amer., Ann. 65: 422-432, 773-779 (host range and specificity, biology, as *paulensis*). —Calvert, 1973. Ent. Soc. Amer., Ann. 66: 28-33 (host selection, as *paulensis*).

Genus MONOCTONUS Subgenus HARKERIA Haliday

- Harkeria* Cameron, 1900. Ann. Mag. Nat. Hist. 6: 537.
- Type-species: *Harkeria rufa* Cameron. Monotypic.
- rufus* (Cameron). Maine, Pa.; Europe.
- Harkeria rufa* Cameron, 1900. Ann. Mag. Nat. Hist. 6: 538. ♀.
- Taxonomy: Stary and Smith, 1976. Ent. Soc. Wash., Proc. 78: 173-174.

SUBTRIBE TRIOXINA

Genus BOREOGALBA Mackauer

- Boreogalba* Mackauer, 1962. Canad. Ent. 94: 1107.
- Type-species: *Boreogalba gladifer* Mackauer. Orig. desig.
- gladifer* Mackauer. Northeastern Canada, Alaska.
- Boreogalba gladifer* Mackauer, 1962. Canad. Ent. 94: 1108. ♀.

Genus TRIOXYS Haliday

Genus TRIOXYS Subgenus BETULOXYS Mackauer

- Trioxys* subg. *Betuloxys* Mackauer, 1960. Beitr. z. Ent. 10: 139.
- Type-species: *Trioxys compressicornis* Ruthe. Orig. desig.
- compressicornis* Ruthe. Eastern Canada; Europe. Host: *Eucraphis* sp., *E. punctipennis* (Zett.).
- Trioxys compressicornis* Ruthe, 1859. Stett. Ent. Ztg. 20: 314. ♀.
- Trioxys testaceus* Stelfox, 1948. Ent. Monthly Mag. 84: 102. ♀.

Genus TRIOXYS Subgenus TRIOXYS Haliday

- Aphidius* subg. *Trioxys* Haliday, 1833. Ent. Mag. 1: 488.
- Type-species: *Aphidius cirsii* Curtis. Monotypic.
- Nevropenes* Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 153.
- Type-species: *Nevropenes ovalis* Provancher. Monotypic.
- Bioxys* Stary and Schlinger, 1967. Rev. Far East Asian Aphidiidae, p. 32.
- Type-species: *Bioxys japonicus* Stary and Schlinger. Orig. desig.
- Revision: Gahan, 1911. Md. Agr. Expt. Sta., Bul. 152: 193-196 (No. Amer. spp.). —Smith, 1944. Aphidiinae of North America, pp. 84-98 (No. Amer. spp.). —Mackauer, 1959. Beitr. z. Ent. 9: 144-179 (Eur. spp.). —Stary, 1966. Aphid parasites of Czechoslovakia, pp. 72-79, 89-91 (Czech. spp.). —Takada, 1966. Insecta Matsumurana 29: 23-36 (Jap. spp.). —Takada, 1968. Insecta Matsumurana 30: 110-116 (Jap. spp.). —Stary and Schlinger, 1967. Rev. Far East Asian Aphidiidae, pp. 32-33, 107-128 (East Asian spp.).

- Taxonomy:** Mackauer, 1960. Beitr. z. Ent. 10: 137-160. — Mackauer, 1965. Canad. Ent. 97: 225-231. — Mackauer, 1968. Hym. Cat., part 3, pp. 68-78 (cat. World spp.).
- Biology:** Schlinger and Hall, 1961. Ent. Soc. Amer., Ann. 54: 34-45. — Mackauer and Stary, 1967. Index World Aphidiidae, pp. 94-101 (host list).
- Morphology:** Schlinger and Hall, 1961. Ent. Soc. Amer., Ann. 54: 34-45 (egg, larvae, adult). — Eastop, 1966. Roy. Ent. Soc. London, Proc. (A) 41: 42-44 (mouthparts).
- americeris** Smith. Eastern Canada, Md., Fla., Ohio, Tenn., Mo. Host: *Drepanaphis acerifoliae* (Thomas), *D. monelli* (Davis).
- Trioxys (Trioxys) americeris* Smith, 1944. Aphidiinae of North America, p. 87. ♀, ♂.
- betulae** Marshall. N. B., N. H., Que., Ont.; Palearctic. Host: *Calaphis* sp., *C. betulae-coleus* (Fitch), *Symydobius oblongus* (von Heyden).
- Trioxys betulae* Marshall, 1896. In Andre, Spec. Hym. Eur. Alg., v. 5, p. 553. ♀.
- Taxonomy:** Mackauer, 1965. Canad. Ent. 97: 226-227.
- bonnevillei** Smith. Idaho, Utah. Host: *Plectrichophorus bitrichus* (K. and S.), *P. glandulosus* (Kalt.), *P. oestlundii* (Knowl.), *P. pseudoglandulosus* (Palmer), *Pseudoepameibaphis glauca* G. and P.
- Trioxys (Trioxys) bonnevillei* Smith, 1944. Aphidiinae of North America, p. 88. ♀, ♂.
- complanatus** Quilis. Canada, Ky., Wis., Minn., Iowa, Ark., Nebr., N. Mex., Utah, Ariz., Nev., Calif.; Mex., Europe, Middle East. Introduced from Southern Europe and Middle East. Host: *Therioaphis riehi* (Borner), *T. trifolii* (Monell).
- Trioxys complanatus* Quilis, 1931. Eos 7: 78. ♀, ♂.
- Trioxys utilis* Muesebeck, 1956. Brooklyn Ent. Soc., Bul. 51: 26. ♀, ♂.
- Taxonomy:** Mackauer, 1959. Beitr. z. Ent. 9: 167-170 (*pallidus* group). — Mackauer, 1961. Beitr. z. Ent. 11: 147 (as *pallidus* Haliday). — Mackauer, 1962. Beitr. z. Ent. 12: 653 (synonymy). — Mackauer, 1967. Entomophaga 12: 144 (key to *pallidus* group).
- Biology:** van den Bosch, *et al.*, 1957. Jour. Econ. Ent. 50: 352-356. — van den Bosch, *et al.*, 1959. Jour. Econ. Ent. 52: 136-154. — Finney, *et al.*, 1960. Jour. Econ. Ent. 53: 655-659. — Schlinger and Hall, 1961. Ent. Soc. Amer., Ann. 54: 34-45. — Hall, *et al.*, 1962. Ent. Soc. Amer., Ann. 55: 566-568. — van den Bosch, *et al.*, 1964. Ecology 45: 602-621. — Force and Messenger, 1964. Ent. Soc. Amer., Ann. 57: 405-413. — Force and Messenger, 1964. Ecology 45: 706-715. — Force and Messenger, 1965. Ecology 46: 853-859. Most references are to *utilis* Muesebeck.
- exareolatus** (Viereck). Conn. Host: *Macrosiphum rosae* (L.).
- Aphidius (Trioxys) exareolatus* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22: 260. ♀.
- gahani** Smith. N. J. Morphologically similar *Trioxys* species known from Europe suggest the host range of *gahani* to be restricted to the genus *Chaetosiphon* (Mackauer and Stary, 1967. Index World Aphidiidae, p. 98).
- Trioxys (Trioxys) gahani* Smith, 1944. Aphidiinae of North America, p. 92. ♀, ♂.
- ibis** Mackauer. N. B.; Europe. Host: *Betulaphis quadrituberculata* (Kalt.).
- Trioxys (Pectoxyzys) ibis* Mackauer, 1961. Portici Lab. Ent. Agr., Bol. 19: 288. ♀.
- infrequens** Smith. Western Canada, Colo. Morphologically similar species of *Trioxys* are parasitic on the genus *Titanosiphon* Nevsky or related aphids (Mackauer and Stary, 1967. Index World Aphidiidae, p. 99).
- Trioxys (Trioxys) infrequens* Smith, 1944. Aphidiinae of North America, p. 93. ♀.
- ovalis** (Provancher). Ont.
- Nevropenes ovalis* Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 153. Holotype lost, exact placement uncertain.
- pallidus** (Haliday). Oreg., Calif.; Palearctic. Introduced into Calif. from France. Host: *Chromaphis juglandicola* (Kalt.), *Eucallipterus tiliae* (L.), *Myzocallis coryli* (Goeze), *Tuberculoidea annulatus* (Hartig).
- Aphidius (Trioxys) pallidus* Haliday, 1833. Ent. Mag. 1: 489. ♀.
- Aphidius resolutus* Nees, 1834. Hym. Ich. Aff. Monog., v. 1, p. 24. ♀.
- Aphidius callipteri* Marshall, 1896. In Andre, Spec. Hym. Eur. Alg., v. 5, p. 609. ♂.
- Trioxys pulcher* Gautier and Bonnamour, 1924. Soc. Ent. de France, Bul. 1924: 43. ♀.

Taxonomy: Mackauer, 1959. Beitr. z. Ent. 9: 167-171. — Mackauer, 1961. Beitr. z. Ent. 11: 115-116, 147. — Mackauer, 1962. Beitr. z. Ent. 12: 652-653. — Hall, *et al.*, 1962. Ent. Soc. Amer., Ann. 55: 566-568.

Biology: Fisher, *et al.*, 1959. Diamond Walnut News 41: 18. — Hall, *et al.*, 1962. Ent. Soc. Amer., Ann. 55: 566-568. — van den Bosch, *et al.*, 1962. Jour. Econ. Ent. 55: 857-862. — van den Bosch, *et al.*, 1971. Calif. Agr. 24: 9-10. — Frazer and van den Bosch, 1973. Environ. Ent. 2: 561-568.

Genus BINODOXYS Mackauer

Trioxys subg. *Binodoxys* Mackauer, 1960. Beitr. z. Ent. 10: 141.

Type-species: *Aphidius (Trioxys) angelicae* Haliday. Orig. desig.

Prior to 1961, the species in *Binodoxys* were considered as part of the genus *Trioxys* Haliday. The host range is largely restricted to the aphid subfamily Aphidinae.

Revision: Smith, 1944. Aphidiinae of North America, pp. 84-98 (No. Amer. spp.). — Mackauer, 1959. Beitr. z. Ent. 9: 144-179 (Eur. spp.). — Stary, 1966. Aphid Parasites of Czechoslovakia, pp. 72-79, 89-91 (Czech. spp.). — Takada, 1966. Insecta Matsumurana 29: 23-36 (Jap. spp.). — Stary and Schlinger, 1967. Rev. Far East Asian Aphidiidae, pp. 107-128 (East Asian spp.). All these references are to revisions of species as part of the genus *Trioxys* Haliday.

Taxonomy: Mackauer, 1960. Beitr. z. Ent. 10: 141-148 (subgenera). — Mackauer, 1961. Beitr. z. Ent. 11: 802 (raised to generic status). — Mackauer, 1965. Canad. Ent. 97: 225-231 (notes on No. Amer. spp.). — Mackauer, 1968. Hym. Cat., part 3, pp. 75-80 (cat. World spp.).

Biology: Mackauer and Stary, 1967. Index World Aphidiidae, pp. 102-109 (host list).

angelicae mediterraneus (Mackauer). Calif. ?; Middle East. Liberated in Calif. but not known to be established. Introduced from Israel and Lebanon. Host: *Aphis craccivora* Koch, *A. fabae* Scop., *A. gossypii* Glover, *Toxoptera aurantii* (Fonsc.).

Trioxys (Binodoxys) angelicae mediterraneus Mackauer, 1960. Beitr. z. Ent. 10: 142 (in part). ♀, ♂. According to Mackauer and Stary (1967. Index World Aphidiidae, p. 104) part of the original type series of this species included *angelicae granatensis* (Quilis) which is restricted to the western Mediterranean area.

carolinensis (Smith). Eastern Canada, Mass., N. C. Host: *Aphis oenotherae* Oestl., *A. pomi* DeG.

Trioxys (Trioxys) carolinensis Smith, 1944. Aphidiinae of North America, p. 89. ♀, ♂.

communis (Gahan). Calif. ?; Asia. Liberated in Calif. but not known to be established.

Introduced from Taiwan. Host: *Aphis gossypii* Glover, *Rhopalosiphum* sp.

Trioxys communis Gahan, 1927. U. S. Natl. Mus., Proc. 70: 4. ♀, ♂.

coruscanigrans (Gahan). Colo., Idaho, Utah. Host: *Macrosiphoniella coweni* (Hunter), *M. jonesi* (G. and P.), *M. frigidiae* (Oestl.).

Trioxys coruscanigrans Gahan, 1911. Md. Agr. Expt. Sta., Bul. 152: 195. ♀.

cupressicola (Gahan). Calif. Host: *Siphonotrophia cupressi* (Swain), *S. gravis* (Knowl.).

Trioxys cupressicola Gahan, 1919. U. S. Natl. Mus., Proc. 55: 116. ♀, ♂.

nearctaphidis Mackauer. N. J. Host: *Nearctaphis bakeri* (Cowen).

Binodoxys nearctaphidis Mackauer, 1965. Canad. Ent. 97: 229. ♀, ♂.

palmerae (Smith). Colo. Host: *Macrosiphum mentzeliae* Wilson.

Trioxys (Trioxys) palmerae Smith, 1944. Aphidiinae of North America, p. 94. ♀, ♂.

rhagii (Ashmead). N. J., Ont., Mich. Host: *Dactynotus atripes* (G. and P.).

Trioxys rhagii Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 670. ♀.

Genus ACANTHOCAUDUS Smith

Trioxys subg. *Acanthocaudus* Smith 1944. Aphidiinae of North America, p. 96.

Type-species: *Trioxys (Acanthocaudus) tissoti* Smith. Orig. desig.

The host range of this Nearctic genus is apparently restricted to the aphid genus *Dactynotus* Rafinesque.

Revision: Smith, 1944. Aphidiinae of North America, pp. 96-98.

Taxonomy: Mackauer, 1960. Beitr. z. Ent. 10: 138. — Mackauer, 1961. Ztschr. f. Parasitenk. 20: 586-587.

caudacanthus (Smith). Fla., Wis. Host: *Dactynotus erigeronensis* (Thomas), *D. gravicornis* (Patch).

Trioxys (*Acanthocaudus*) *caudacanthus* Smith, 1944. Aphidiinae of North America, p. 97. ♀, ♂.

schlingeri (Muesebeck). B. C. Host: *Dactynotus ambrosiae* (Thomas).

Trioxys (*Acanthocaudus*) *schlingeri* Muesebeck, 1958. Ent. News 69: 144. ♀, ♂.

tissoti (Smith). Eastern Canada, Fla. Host: *Dactynotus rudbeckiae* (Fitch), *D. russellae* H. R. L.

Trioxys (*Acanthocaudus*) *tissoti* Smith, 1944. Aphidiinae of North America, p. 96. ♀, ♂.

Family HYBRIZONTIDAE

By PAUL M. MARSH

The one genus and two species which comprise this family in North America were placed in the family Braconidae under the subfamily Paxylomatinae in the original catalog. Authors who have published on this group are nearly evenly divided as to whether it should be given family or subfamily status, but I have chosen to treat it as a distinct family.

These wasps are relatively rare and their host relationships have not been satisfactorily established. They are found associated with ants and may be ant parasites; however, one record suggests parasitism of aphids.

Revision: Watanabe, 1946. Matsumushi 1: 24-31 (for World).

Taxonomy: Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 247 (key to genera).

— Marshall, 1891. In Andre, Spec. Hym. Eur. Alg., v. 5, pp. 619-628 (taxonomy, key to

genera). — Ashmead, 1894. Ent. Soc. Wash., Proc. 3: 55-60 (taxonomy, key to genera).

— Marshall, 1899. Ent. Soc. London, Trans. 1899: 73-79 (taxonomy, key to genera).

— Strand, 1914. Ent. Mitt. 3: 27-31 (taxonomy). — Donisthorpe and Wilkinson, 1930. Roy.

Ent. Soc. London, Trans. 78: 87-93 (taxonomy). — Schmiedeknecht, 1930. Hym.

Mitteuropas, pp. 374-375 (key to genera). — Ceballos, 1943. Eos 19: 63-67 (taxonomy).

— Shenefelt, 1969. Hym. Cat., part 4, pp. 1-4 (cat. World spp.). — van Achterberg, 1976.

Ent. Berich. 36: 61-64 (subfamily status).

Biology: Webster, 1914. Jour. Econ. Ent. 7: 403-404 (No. Amer. host records). — Donisthorpe and Wilkinson, 1930. Roy. Ent. Soc. London, Trans. 78: 87-93 (review of biology).

Genus HYBRIZON Fallen

Hybrizon Fallen, 1813. Spec. Nov. Hym. Disp. Meth., p. 19. No species.

Type-species: *Hybrizon latebricola* Nees. By subsequent monotypy.

Paxyllomma Brebisson, 1825. In Lepeletier and Serville, Encycl. Meth., Ins. v. 10, p. 23.

Type-species: *Paxyllomma buccatum* Brebisson. Monotypic.

Plancus Curtis, 1833. Ent. Mag. 1: 188.

Type-species: *Plancus apicalis* Curtis. Monotypic.

Eurypterna Foerster, 1862. Naturh. Ver. Rheinlande, Verh. 19: 247.

Type-species: *Paxyllomma cremieri* Romand. Orig. desig.

Eupachylomma Ashmead, 1894. Ent. Soc. Wash., Proc. 3: 58.

Type-species: *Wesmaelia rileyi* Ashmead. Orig. desig.

Ogkosoma Haupt, 1913. Ent. Gesell. Halle, Mitt. 5-7: 52.

Type-species: *Ogkosoma schwarzi* Haupt. Monotypic.

The names *Paxylloma*, *Paxyllomme*, *Paxyllomma*, *Paxylloma*, and *Pachylomma*, used by various authors, are all to be considered emendations of *Paxyllomma*.

flavocinctus (Ashmead), n. comb. Va.

Eupachylomma flavocincta Ashmead, 1894. Ent. Soc. Wash., Proc. 3: 59. ♂.

rileyi (Ashmead), n. comb. D. C., Va., Mich., Ind., Iowa. Host: *Schizaphis graminum* (Rond.).

Wesmaelia rileyi Ashmead, 1889 (1888). U. S. Natl. Mus., Proc. 11: 641. ♀.

Family ICHNEUMONIDAE

By ROBERT W. CARLSON

Most of the members of this large family are parasites of holometabolous insects. A few species or groups of species parasitize spiders (egg sacs, spiderlings, or adults) or egg sacs of pseudoscorpions. No identified Ichneumonidae are known to be primary parasites of paurometabolous insects (cf. Clancy and Pierce, 1966). Further discussion of host relations is deferred to the introductions pertaining to genera or supergeneric categories. General information on the biology, host selection, or ecology of Ichneumonidae can be found in the discussions of Cushman (1926), Clausen (1940), Townes and Townes (1951, p. 184-185), and Townes (1958, 1962). Additional biological references were cited by Sachtleben (1962c).

According to the estimate of Townes (1969, p. 6) the Nearctic fauna of Ichneumonidae includes slightly more than 8000 species, only 35 percent of which had been described. Of the 27 currently recognized subfamilies, only the Agriotypinae and Collyriinae have no species native to North America (one species of Collyriinae was introduced from Europe).

I have attempted to include most of the species known to have been released in North America for purposes of biological control. In a few cases, I knew from voucher material or had other reasons to suspect that the identifications which had been published in reference to releases were incorrect. When I lacked the information necessary for correcting the identifications of such species, they were excluded from the catalog. None of the species thus excluded are known to be established.

Lists of species synonymy for species not confined to America north of Mexico are as complete as I could make them. No synonyms were intentionally excluded by virtue of having been described from areas outside the geographic scope of this catalog.

Distributions given for species are self-explanatory. In the catalog of Townes and Townes (1951) numerous species which are not particularly common in collections, and some which actually are rather scarce, were cited as having distributions such as "transcont. in Transit. and U. Austr. Zones." Except in a very few cases, distributions of the latter type have been replaced by lists of states and provinces or by bracketing distributions such as: Que. w. to s. B. C., s. to n. Fla., N. Mex., and s. Calif.

In giving the geographic distributions of genera or supergeneric categories, and in some other discussions, I have used the terms Nearctic and Neotropic in reference to distributions in America north of Mexico and south of the United States, respectively. No alternatives were feasible.

Lists of hosts are arranged so that names of taxa belonging to the same family are in alphabetical sequence. The names of the families themselves would have been a very worthwhile addition, and their inclusion would not have been incompatible with the process of computerization. It is hoped that inclusion of them will be allowed in future editions of the catalog.

Although he did not refer to them by number (except on p. 49), Townes, (1969, p. 15-18) discussed the manner in which Opinions 157 and 159 of the International Commission on Zoological Nomenclature came to be published by Hemming (1945). I have looked into the various

aspects of these cases and have found that Townes' statements about their history are correct (see Hemming, 1943). I also learned that Opinion 135, which pertains to suppression of the names of Jurine which were validated in 1801 (including *Cryptus*), has no validity on the same grounds. However, in 1973 I discovered that Opinion 135 is of no consequence with respect to the homonymy of *Cryptus* Fabricius (1804) because the latter would be preoccupied by *Cryptus* Panzer (1804) if *Cryptus* Jurine (1801) had been suppressed. The fact that Panzer's usage of the name *Cryptus* predates the Fabrician usage is demonstrated by Fabricius' (1804, p. 35) citation of fascicle 88 of Panzer's "Faunae insectorum Germanicae", wherein Panzer (1804) validated the name *Cryptus segmentarius*, which is the type-species of *Cryptus* Jurine by subsequent monotypy and which is a synonym of *Arge rustica* (Linnaeus). After pondering this matter for a considerable time, I decided to use the name *Cryptus* Fabricius in the present catalog in spite of its homonymy for the following reasons: (1) the name *Cryptus* Jurine was never applied more than sparingly to sawflies of the genus *Arge* for a variety of reasons, the principal ones being the obscurity of the publication in which *Cryptus* Jurine (1801) appeared and the fact that most authors thought the name had been validated only by Jurine (1807) and treated it either as a junior homonym of *Cryptus* Fabricius or a junior synonym of *Hylotomma* (itself a junior synonym of *Arge*); (2) neither *Cryptus* Jurine nor *Cryptus* Panzer are likely to be hereafter treated as available names by specialists working on Symphyta; (3) the historic significance of the names *Cryptus* and Cryptinae for ichneumonology is secondary only to that of *Ichneumon* and Ichneumonidae.

Fitton and Gauld (1976, p. 249) apparently made independent discovery of the Fabrician citation of Panzer (1804, fasc. 88), and opted in favor of the group name Hemitelinae. I am not certain that the latter will gain wide acceptance among ichneumonid workers, a question which also influenced my decision in favor of *Cryptus* and Cryptinae. In any event, the paper of Fitton and Gauld did not appear until after the computerization of my manuscript for the Cryptinae, and it is not feasible for me to now alter my decision.

I have applied the names *Ichneumon* and *Pimpla* according to the type-species designations of Curtis (1828 and 1839, respectively). I regard application of the names *Pimpla* Fabricius (1804) and *Pimplini* to *Coccygominus* and *Echthromorphini*, respectively (in accordance with the illegal Opinion 159), as a nomenclatorial absurdity of incredible magnitude. Fabricius placed no species of *Coccygominus* in *Pimpla*; he invariably placed them in *Cryptus* in 1804. Thus *Ichneumon instigator* Fabricius (the type-species of *Pimpla* according to Opinion 159) was not one of the species which Fabricius had included in *Pimpla*.

I regard *Ephialtes* Schrank (1802, p. 316) as an available name. Schrank's partial misidentification of the type-species (see his p. 269-270 description of *Ichneumon compunctor* Linnaeus) makes it a case analogous to that of his genus *Paniscus* (see introductory discussion of *Netelia*), except for the fact that *Paniscus* is suppressed as a junior synonym of *Ophion*.

Questions of synonymy of supergeneric names have here been decided in favor of the oldest available supergeneric names having type-genera which are currently valid (i.e. not suppressed as junior objective or subjective synonyms). The resultant usage is largely in agreement with that in the paper by Fitton and Gauld (1976) on the ichneumonid supergeneric names other than those of Ichneumoninae. The most noteworthy differences between their usages and mine pertain to Ephialtini (not used here), Pimplini, and names based upon *Cryptus*.

The following is a discussion of some of the most important publications on Ichneumonidae pertinent to studies of the Nearctic fauna; to a limited extent, some of the authors are also discussed. Biographical data on these and additional authors who published on Ichneumonidae were compiled by Sachtleben (1962b, p. 720-726).

The first real specialist to study Ichneumonidae was Gravenhorst (my reference to him as an ichneumonid specialist should not be misconstrued; he is also well known for his taxonomic work on certain Coleoptera, and he published on subjects other than entomology). In 1815 Gravenhorst published the first sizeable taxonomic paper that dealt strictly with Ichneumonidae. In 1819 he published a conspectus (i.e. outline) of the 1829 work that is the foundation for modern ichneumonology. The appearance of the latter work was preceded by Gravenhorst's (1820) paper on the ichneumonids of the Italian Piedmont and by Thunberg's (1822, 1824) revision of "Ichneumonoidea," (Ichneumonoidea, Gasteruptiidae, and Aulacidae). Thunberg's revision was based largely upon Fabricius (1804), but the nine generic names which Fabricius had proposed for the species Thunberg treated were suppressed by Thunberg as synonyms of *Ichneumon*. This resulted in much homonymy, and Thunberg proposed many replacement names. Fortunately,

ly, most of the replacement names are unavailable by virtue of having been proposed to replace senior homonyms.

Gravenhorst (1829), on the other hand, attempted to redefine the Fabrician genera of Ichneumonidae and give them phyletic meaning by excluding all but a few of the originally included species and adding others. With the exception of *Gelis* Thunberg (1827), Gravenhorst also utilized the generic names which had been proposed by other authors who had preceded him. Although Gravenhorst's generic nomenclature was not altogether sound with respect to present rules (see Townes, 1969, p. 10), many of the nomenclatural problems which surfaced in the early part of the 20th Century were not caused by anything Gravenhorst did (although he is culpable in the cases of *Bassus* and *Xorides*), and could not have been avoided by anything he could have foreseen. In the case of *Pimpla*, Gravenhorst (1819) did not indicate the precise group of species for which he would use the name in his familial (our generic) sense; therefore, Curtis (1828) could not have known that his choice of type-species would not agree with Gravenhorst's (1829) usage.

Townes (1959) described the general condition of the Gravenhorst collection. Additional information on the collection and its labeling were published by Townes (1965).

Foerster (1868) was the next person to publish a major work dealing with the entire family. All of the 489 genera newly described in his 1868 paper had no included species. Foerster intended that his generic names would apply to the European fauna, but the first included species, European or otherwise became the only ones eligible for selection as type-species. In many cases the type-species fixation was by subsequent monotypy (Internatl. Code Zool. Nomencl., art. 69 [A] [ii] [2]). Perkins (1962) dealt with the type-species of the Foerster genera, and except for the few cases in which corrections are made here or elsewhere, or in which species have been referred to Foerster genera since 1962, the type-species I have cited are those cited by Perkins.

Holmgren, Cresson, and Provancher were contemporaries who between 1855 and 1890 published many descriptions of new species of Ichneumonidae, and, in the case of Holmgren, many new genera also. The majority of the new species described by Cresson are Nearctic. Cresson's (1887) synopsis of Hymenoptera of America north of Mexico included keys to the subfamilies and genera of Ichneumonidae and a catalog of the species and their synonyms. Cresson (1916) published a list of species he had described, and he indicated which single specimen was to be regarded as the type for each; thus he selected lectotypes for those cases in which he had described a species from more than one specimen. His 1916 paper also included a list of all the papers he had published on Hymenoptera, but there is no published list which excludes those that do not involve Ichneumonidae. Cresson's (1928) paper (published posthumously) on the types of other authors concerns only those to be found in the collection at the Academy of Natural Sciences of Philadelphia. Therefore, in cases where all the type material of a given species was not deposited at the A. N. S. P., Cresson's citations of individual specimens may not constitute lectotype selection. It is apparent, however, that they were accepted as such by Townes (1944, 1945) and in cases where only one syntype (or only one syntype from the locality indicated as the type locality) was deposited at the A. N. S. P., Townes may technically be the lectotype selector.

Provancher dealt mostly with the Fauna of Canada, most particularly with that of Quebec. He published most of his original descriptions in "le Naturaliste canadien," but in 1883 published a compilation of them. Additions and corrections to the ichneumonid parts of this 1883 compilation were published by Provancher (1886, 1888, 1889). Gahan and Rohwer (1917, 1918) selected lectotypes for many of Provancher's Hymenoptera (except bees). Barron (1975) restudied the Ichneumonidae in the Provancher collections. He located some types not found by Gahan and Rohwer and in some cases rejected lectotypes that Gahan and Rohwer had selected. In most cases, Barron's grounds for rejecting particular Gahan and Rohwer lectotypes seem valid, but in a number of the cases there was no proof that the Gahan and Rohwer lectotypes had not been syntypes. In those cases (which I discuss under the species in question) I have regarded the Gahan and Rohwer lectotypes as being valid. Barron discussed Provancher's life, collections, and methodology; he also tabulated Provancher's publications on Ichneumonidae (p. 414).

Holmgren dealt mainly with the fauna of Sweden, but did describe six species from California (Holmgren, 1869a) and seven from Greenland (Holmgren, 1869b, 1872). According to information published by Persson (1971) all of the California species were probably collected in the vicinity of San Francisco.

Thomson published on Ichneumonidae between 1783 and 1897, mostly in his "Opuscula en-

tomologica"; the latter has continuous pagination, but is in most other respects a serial publication, and in this catalog I have bibliographically treated it as such. Thomson was an important adopter of Foerster names. In adopting them, however, he often altered their terminations (see Perkins, 1962, p. 387-390). The Thomson spellings have most recently been treated as emendations (see Walkley, 1958, p. 57; Perkins, 1962, p. 387; Townes, 1969, p. 13-14), and I have cited them as such in this catalog. However, Thomson never cited the original spellings in any of these cases, and although it is obvious in most cases that his spellings were deliberate, they technically should be treated as lapses. Thomson was good at finding characters for distinguishing genera, and also seems to have been very talented at distinguishing closely related species. His ability in the latter respect, at least, seems to have been much greater than that of any of his contemporaries who worked on Ichneumonidae. The weaknesses in Thomson's work stem from the fact that he apparently never traveled to study the collections even of prior Scandinavian workers (e.g. Holmgren, Thunberg, Woldstedt), but instead ignored their names (i.e. in the case of Thunberg) or attempted to identify their species from their descriptions. Many of Thomson's errors in the identification of the species of others are being corrected in current papers.

Ashmead published on Ichneumonidae between 1888 and 1906. His 1900 treatment of the Ichneumonoidea was hastily contrived and full of errors. It is based largely upon the generic keys of Foerster and, with respect to Ichneumonidae, is significant mostly for its fixation of some type-species and for the validation of new generic and specific names. Some of the names validated by Ashmead (1900) were discussed by Cushman (1942). Crawford (1900) published a list of Ashmead's entomological papers and an index to the generic names of Ashmead; there is no published list of only those Ashmead papers which involve Ichneumonidae.

The ichneumonid part (1901-1902) of Dalla Torre's catalog of Hymenoptera is, for the most part, bibliographically accurate and nearly complete. Those inaccuracies which are found in his catalog appear to have resulted from the fact that he either did not have all of the primary literature available to him or did not have time to check it. He cannot be faulted on either account, but those who can feasibly check his cataloging of older works probably would be wise in doing so.

Viereck published a significant number of papers on Ichneumonidae and other Hymenoptera between 1902 and 1928, but is probably best known for his publications on the type-species of Ichneumonoidea (1914, 1921) and the Hymenoptera of Connecticut (1917, with other collaborating authors). His work on the ichneumonoid type-species was based largely upon Dalla Torre's catalog; some of his oversights of first inclusions of species in ichneumonid genera of Foerster could have been avoided if he had studied Dalla Torre's catalog more carefully. Viereck was not a careful worker, however, and the characters he used for distinguishing what he called genera and species were poorly chosen. Consequently, his 1917 treatment of the Ichneumonidae in Hymenoptera of Connecticut has served only to befuddle or mislead those who have attempted to use it. Apparently, there is no published list of Viereck's publications.

Roman (Sweden) and Cushman (U. S. A.) were specialists who published numerous papers on Ichneumonidae over periods of time that were largely overlapping (1903-1940 and 1913-1947, respectively). I have cited below the four taxonomic papers of Cushman (1921 [with Gahan], 1922, 1928, 1942) which deal with Ichneumonidae in a more or less general fashion. A complete listing of Cushman's publications was given by Townes (1957).

Roman (1912, 1932, 1936) published important papers on ichneumonid type specimens of Thunberg and Linnaeus. His papers on the Ichneumonidae of Greenland are some of the most recent ones on the subject; these and other papers on Greenland Ichneumonidae were cited by Sachtleben (1962c, p. 923). Sachtleben (1962a, p. 171-173) listed most of Roman's papers on Ichneumonidae.

The Nearctic catalog of Ichneumonidae by Townes (1944, 1945) differs from the present catalog in showing all the published generic combinations for each species and in citing type localities and type repositories. Those types of Viereck cited in that catalog as being at the Conn. Agr. Expt. Sta. have since been transferred to the U. S. Natl. Museum. Other corrections to the 1944-1945 catalog of Townes were given by Townes (1973, p. 359-369).

The Nearctic catalog of Townes and Townes (1951) did not cite either the *nomina nuda* which had been cited in synonymy by Townes (1944, 1945) or those he had left unplaced (1945, p. 768-770). The *nomina nuda* are reinserted here because they have some historic significance, that significance being greatest when they pertain to specimens which subsequently became types of valid names.

Short's (1959, 1970) study of final-instar larvae was more complete and detailed than that of Beirne (1941), and therefore seems to have had a greater impact upon the classification of Ichneumonidae. Although some specialists who work primarily with adults have recently incorporated larval studies into their taxonomic revisions, information about larvae has come chiefly from scientists, like Dr. Short, who are larval specialists. I believe that the information they have published has in some cases been misused by those who specialize in study of adult specimens. The latter sometimes accord as great a significance to structural characters of the head sclerites of final-instar larvae as to the sum total of the adult structural characters which have been studied. For example, Townes (1969, p. 28-29) based his assertion that Ichneumoninae and Cryptinae (=his Gelinae) are unrelated upon differences between the known larvae of the two groups. Townes believed the fact that "these two subfamilies ... resemble each other to a remarkable degree" ... "to be the result of hunting [for] hosts on foot," a habit shared by many members of both groups, but not all the members of either. The Ichneumoninae are internal pupal and larval-pupal parasites of Lepidoptera, while most of the Cryptinae are presumed to be external parasites of a variety of hosts, including Lepidoptera. The known larvae of these two groups differ accordingly. Because internal parasitism must evolve from external parasitism (or vice versa), I believe that it is illogical to regard the known larval differences as evidence indicating that the Ichneumoninae and Cryptinae are unrelated. I hope that this and similar questions are to be addressed in Dr. Short's revised and greatly expanded work on larvae which is nearly ready for publication (personal commun., J. R. T. Short, 1977).

Sachtleben's (1962a) bibliography of of Palearctic Ichneumonidae is an extremely valuable tool for those interested in the taxonomy or biology of Ichneumonidae. Additions and corrections to this bibliography were published by Sachtleben (1962b, p. 726-731), and Sachtleben (1962c) provided a set of subject indices to the bibliography (e.g. indices to papers on morphology, ecology, physiology, parasitization of individually listed hosts, various taxonomic categories, etc.). It seems likely that in compiling this set of papers Sachtleben would not have found time for verifying dates of publication; this seems to be borne out by my observation regarding dates for various papers of Holmgren, for some of which I have established dates (i.e. years) of publication later than those cited by Sachtleben.

Much new species synonymy was published in the catalogs of Townes, Townes, and Gupta (1961), Townes, Momoi, and Townes (1965) and Townes and Townes (1966, 1973); some improvements in generic and supergeneric classification were also made, particularly in the 1961, 1965, and 1966 catalogs. Many additional changes in classification were made by Townes (1969, 1970a, 1970b, 1971) in his treatment of the genera of the world (except Ichneumoninae). The fact that these works on the genera have been of great importance to the present catalog will be obvious from the fact that I have largely adopted Townes' arrangement of genera and supergeneric categories. However, the arrangement of the taxa in any classification is a superficial matter of secondary importance, and the ultimate value of Townes' volumes on the genera stems from the great amount of new and old real information that they have brought together.

Townes' (1969) estimate of the number of extant ichneumonid species as slightly fewer than 60,500 is rather frequently cited in publication and conversation. In a recent conversation I was told of an anonymous coleopterist who has estimated the size of the Curculionidae to be "100,000 to 250,000" species, and I have also heard claims that the Noctuidae and Chalcidoidea may exceed the Ichneumonidae in size. The fact that no persons have yet assembled the collections or the knowledge of them to allow them to make size estimates of the Noctuidae, Chalcidoidea, or Curculionidae that they are willing to publish would seem to attest to the ability and dedication of both of the Towneses. Uncertainties about the absolute and relative sizes of the groups mentioned will outlive those presently wondering about them. However, our present speculations serve to remind us that the number of persons working on the various aspects of systematics and biology of the taxa in any large insect group is far fewer than the number which can possibly satisfy the demand for information about those taxa.

Taxonomy: Jurine, 1801. *In* Panzer, *Litteratur-Ztg*. Erlangen, *Intelligenzbl.* 1: 163.

—Schränk, 1802. *Fauna Boica*, v. 2, p. 261-319. —Panzer, 1804. *Faunae Ins. German.*, fasc. 88, pl. 17. —Fabricius, 1804. *Systema Piezatorum*, p. 35, 54-101, 112-123, 126-140. —Jurine, 1807. *Nouv. Meth. Class. Hym. Dipt.* v. 1, p. 49-51, 98-115, pl. 3, 6, 8. —Gravenhorst, 1815. *Monog. Ichn. Pedestrum*, VIII and 110 p. —Gravenhorst, 1819 (1818). *Nova Acta Leopoldina* 9: 281-298. —Gravenhorst, 1820. *Acad. Sci. Torino, Mem.* 24: 275-388.

- Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 249-281 (key); 9: 285-368. —Thunberg, 1827. Soc. Sci. Upsala, Nova Acta 9: 199-204 (*Gelis* described).
- Curtis, 1828. Brit. Ent., v. 5, pl. 214 (type-species design. for *Pimpla*). —Gravenhorst, 1829. Ichn. Europaea, 3 v., xxxi and 2916 p. —Curtis, 1839. Brit. Ent., v. 16, pl. 728 (type-species design. for *Ichneumon*). —Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 135-221. —Holmgren, 1869a (1868). Eug. Resa, pt. 2 (Zool.), sect. 1 (Ins.), p. 391-442.
- Holmgren, 1869b. Svenska Vetensk.-Akad. Handl. (n. f.) 8 (5): 1-56. —Holmgren, 1872. Svenska Vetensk.-Akad., Ofvers. af ... Forhandl. 29: 97-105. —Thomson, 1873-1897. Opusc. Ent. 5: 455-527 (1873); 6: 589-612 (1874); 8: 732-777 (1877); 9: 850-936 (1883); 10: 939-1040 (1884); 11: 1043-1182 (1887); 12: 1185-1318 (1888); 13: 1321-1438 (1889); 14: 1441-1534 (1890); 15: 1601-1656 (1891); 16: 1752-1773 (1892); 17: 1862-1886 (1892); 18: 1889-1967 (1893); 19: 1971-2137 (1894); 21: 2343-2404 (1896); 22: 2407-2450 (1897); —Provancher, 1883. Petite Faune Ent. Canada, v. 2, p. 249-490, 752-803 (addit. et corr.), 819-830 (index).
- Provancher, 1886; 1888; 1889. Addit. Corr. Faune Ent. Canada Hym., p. 29-121; 356-370 (sup. aux addit.); 445-475 (index), errata. —Cresson, 1887. Amer. Ent. Soc. Trans., sup. vol. (for 1887), p. 38-52 (keys), 183-221 (catalog). —Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 9-103, 104, 151-152, 161-190. —Dalla Torre, 1901; 1902. Cat. Hym., v. 3, pt. 1, p. 10-544; pt. 2, p. 545-1058, 1059. —Schmiedeknecht, 1902-1927; 1928-1936. Opusc. Ichn., 5 v., 44 fasc., 3570 p.; sup., 1 v., 25 fasc., 1875 p. —Crawford, 1909. Ent. Soc. Wash., Proc. 10: 126-156 (biog. and bibliog. of Ashmead). —Roman, 1912. Zool. Bidr. Uppsala 1: 231-293. —Viereck, 1914. U. S. Natl. Mus., Bul. 83, 186 p. —Morice and Durrant, 1915. Ent. Soc. London, Trans. 63: 339-370, 372-375, 388-390 (scholarly discussion of Jurine, 1801). —Cresson, 1916. Amer. Ent. Soc., Mem. 1: 12-64, 135-140. —Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 243-360. —Gahan and Rohwer, 1917; 1918. Canad. Ent. 49: 298-308, 331-336, 391-400, 427-433; 50: 28-33, 101-106, 133-137, 166-171, 196-201. —Viereck, 1918; 1919. Biol. Soc. Wash., Proc. 31: 69-74; 32: 45, 198 (supergeneric names). —Cushman and Gahan, 1921. Ent. Soc. Wash., Proc. 23: 153-171 (Say's species of Ichneumonidae). —Viereck, 1921. U. S. Natl. Mus., Proc. 59: 129-150 (sup. to Viereck, 1914). —Cushman, 1922. U. S. Natl. Mus., Proc. 61 (8): 1-30. —Cresson, 1928. Amer. Ent. Soc., Mem. 5: 11-26. —Cushman, 1928. In Leonard, N. Y. (Cornell) Agr. Expt. Sta., Mem. 101: 920-960 (N. Y. list, Ichneumonidae). —Roman, 1932. Ent. Tidskr. 53: 1-16 (Linnaean types). —Roman, 1933. Ent. Tidskr. 54: 37-39 (type-species of some old ichneumonid genera). —Roman, 1936. Ent. Tidskr. 57: 1-5 (ichneumonid types of Linnaeus in Stockholm Mus.). —Hemming, 1939. Internatl. Comm. Zool. Nomencl., Opinions and Declarations 2: 9-12 (Opinion 135). —Beirne, 1941. Soc. Brit. Ent., Trans. 7: 124-190. —Cushman, 1942. U. S. Natl. Mus., Proc. 92: 277-289. —Hemming, 1943. Bul. Zool. Nomencl. 1: 70-86. —Townes, 1944; 1945. Amer. Ent. Soc., Mem. 11 (1): 1-477; 11 (2): 478-925. —Hemming, 1945. Internatl. Comm. Zool. Nomencl., Opinions and Declarations 2: 253-260, 277-289 (Opinions 157 and 159). —Townes and Townes, 1951. In Muesebeck, et al., U. S. Dept. Agr., Agr. Monog. 2: 184-409.
- Townes, 1957. Ent. Soc. Wash., Proc. 59: 248-254 (bibliog. of Cushman's papers).
- Walkley, 1958. In Krombein, U. S. Dept. Agr., Agr. Monog. 2, sup. 1, p. 36-62. —Townes, 1959. Ent. Soc. Wash., Proc. 61: 76-78. —Hopper, 1959. Ent. Soc. Wash., Proc. 61: 155-172 (pronunciation and derivation of generic names of Nearctic Ichneumonidae). —Short, 1959. U. S. Natl. Mus., Proc. 110: 391-511 (final-instar larvae). —Townes, 1961. Ent. Soc. Wash., Proc. 63: 103-113 (types of Nearctic ichneumonids in European museums). —Townes, Townes, and Gupta, 1961. Amer. Ent. Inst., Mem. 1: iv and 522 p. (Indo-Australian catalog). —Sachtleben, 1962a. Beitr. z. Ent. 12: 1-242 (bibliog. Palearctic Ichneumonidae). —Perkins, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 11: 385-483. —Sachtleben, 1962b. Beitr. z. Ent. 12: 720-731 (biographies, necrologies, and additions to Sachtleben, 1962a). —Sachtleben, 1962c. Beitr. z. Ent. 12: 915-939 (indices to Sachtleben, 1962a). —Townes, Momoi, and Townes, 1965. Amer. Ent. Inst., Mem. 5: v and 661 p. (Eastern Palearctic catalog). —Townes and Townes, 1966. Amer. Ent. Inst., Mem. 8: iii and 367 p. (Neotropical catalog). —Walkley, 1967. In Krombein and Burks, et al., U. S. Dept. Agr., Agr. Monog. 2, sup. 2, p. 60-213.
- Townes, 1969-1971. Amer. Ent. Inst., Mem. 11: ii and 300 p. (1969); 12: iv and 537 p. (1970 [1969]); 13: ii and 307 p. (1970 [1969]); 17: iii and 372 p. (1971) (genera of world, except Ichneumoninae). —Short, 1970. Roy. Ent. Soc. London, Trans. 122: 185-210 (sup. to Short, 1959). —Persson, 1971. Ent. Tidskr. 92: 164-172 (discussion of voyage of Eug. Resa; see Holmgren, 1869a). —Townes and Townes, 1973. Amer. Ent. Inst., Mem. 19: iv and 416

- p. (Ethiopian catalog). — Barron, 1975. Nat. Canad. 102: 387-591 (types of Provancher).
 — Fitton and Gauld, 1976. Systematic Ent. 1: 247-258 (suprageneric names, except those of Ichneumoninae).
 Biology: Cushman, 1926. Ent. Soc. Wash., Proc. 28: 5-6, 29-51. — Clausen, 1940. Entomophagous Insects, p. 61-98. — Townes and Townes, 1951. In Muesebeck, *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 184-185. — Townes, 1958. Jour. Econ. Ent. 51: 650-652.
 — Townes, 1962. Verh. XI Internatl. Kong. f. Ent. Wien 1960, v. 2, p. 738-741.
 — Sachtleben, 1962c. Beitr. z. Ent. 12: 924-939 (various biological indices to Sachtleben 1962a [see taxonomy refs.]). — Clancy and Pierce, 1966. Jour. Econ. Ent. 59: 855, 857.
 Morphology: Peck, 1937. Canad. Jour. Res., Sect. D: Zool. Sci. 15: 221-274 — Sachtleben, 1962c. Beitr. z. Ent. 12: 923-924 (morphology indices to Sachtleben, 1962a [see taxonomy refs.]).

SUBFAMILY PIMPLINAE

- Revision: Townes and Townes (*et al.*), 1960. U. S. Natl. Mus. Bul. 216 (pt. 2): 3-436.
 Taxonomy: Cushman, 1921. U. S. Natl. Mus., Proc. 60 (4): 1-6 (key to tribes). — Oehlke, 1964. Ent. Abhandl. 29 (10): 533-590 (keys to Palearctic tribes and genera). — Finlayson, 1967. Canad. Ent. 99 (1): 1-8 (final-instar larvae). — Oehlke, 1967. In Ferriere and Vecht, Hym. Cat., pt. 2, 49 pp. (catalog, western Palearctic species). — Aubert, 1969. Ichn. Ouest-Pal. et Leurs Hotes, pt. 1, 302 p. (catalog). — Townes, 1969. Amer. Ent. Inst., Mem. 11: 59-142 (genera of world).
 Morphology: Pratt, 1939. Ent. Soc. Amer., Ann. 32: 727-742.

TRIBE PIMPLINI

- Taxonomy: Perkins, 1943. Ann. and Mag. Nat. Hist. (ser. 11) 10: 249-273.

Genus EXERISTES Foerster

- Exeristes* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 164.
 Type-species: *Pimpla roborator* Gravenhorst. Monotypically included and desig. by Schmiedeknecht, 1888.
Eremochila Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 165.
 Type-species: *Pimpla ruficollis* Gravenhorst. Monotypically included and desig. by Schmiedeknecht, 1888.

Members of this genus are usually parasites of Pyralidae or Olethreutidae.

- comstockii** (Cresson). Southern Que., s. to Fla., w. to B. C. and Calif. Host: *Barbara colfaxiana siskiyouana* (Kft.), *B. colfaxiana taxifoliella* (Bsk.), *Eucosma monitorana* Heinr., *Laspeyresia caryana* (Fitch), *L. cupressana* (Kft.)?, *L. toreuta* (Grt.), *L. youngana* (Kft.), *Petrova albicapitana* (Bsk.), *P. comstockiana* (Fern.), *Rhyacionia buoliana* (D. and S.), *R. frustrana* (Com.), *R. rigidana* (Fern.), *Dioryctria amatella* (Hulst), *D. auranticella* (Grt.), *D. clariolaris* (Wlk.), *D. disculsa* Heinr., *D. zimmermanni* (Grt.), *Choristoneura fumiferana* (Clem.).
Ephialtes Comstockii Cresson, 1880. In Comstock, U. S. Dept. Agr., Ann. Rpt. for 1879, p. 235. ♀.
 Biology: Cushman, 1927. Jour. Agr. Res. 34: 616. — Miller, 1953. Ohio Jour. Sci. 53 (1): 60. — Arthur, 1963. Canad. Ent. 95: 1079-1085.
roborator (Fabricius). Eurasia. Introduced but never established in Ontario (1957-1958) and various points in the U. S. (1924-1932). Host: *Ostrinia nubilalis* Hbn., *Rhyacionia buoliana* (D. and S.). The hosts listed were the target species for introductions into North America, but other hosts have been recorded in Europe.
Ichneumon roborator Fabricius, 1793. Ent. System., v. 2, p. 170. ♀.
Pimpla longicauda Brulle, 1833, (1832). Exped. Sci. de Moree, v. 2, p. 379. ♀.
Xorides aegypticus Walker, 1871. List Hym. Coll. ... Red Sea and Arabia, p. 3. ♀.
Pimpla flavipennis Rudow, 1883. Ent. Nachr. 9: 234. ♀.
Pimpla nodosa Rudow, 1883. Ent. Nachr. 9: 235. ♀.

- Pimpla robusta* Rudow, 1883. Ent. Nachr. 9: 238. ♀.
Pimpla Schmiedeknechti Kriechbaumer, 1888. Ent. Nachr. 14: 339. ♀.
Pimpla brachycera Thomson, 1895. Opusc. Ent. 19: 2126. ♀.
Pimpla punctata Thomson, 1895. Opusc. Ent. 19: 2126. ♀.
Pimpla blattifera Tosquinet, 1896. Soc. Ent. Belg., Mem. 5: 310. ♀.
Pimpla schmiedeknechti Dalla Torre, 1901. Cat. Hym., v. 3, p. 449. Emend.
Pimpla roboratrix Schulz, 1906. Spolia Hym., p. 104. Emend.
Pimpla pyraustae Okamoto, 1921. Hokkaido Agr. Expt. Sta. Bul. 12: 15. ♂.

Biology: Fox, 1927. Natl. Res. Council, Rpt. 21, Ottawa, 58 pp. — Timon-David, 1931. Soc. de Biol. [Paris], Compt. Rend. 106: 829-831. — Baker and Jones, 1934. U. S. Dept. Agr., Tech. Bul. 460: 1-26.

ruficollis (Gravenhorst). Europe. Introduced in Conn. and N. Y. in 1935-1936 and 7 times in Ontario between 1933 and 1957 without becoming established. Host: *Rhyacionia buoliana* (D. and S.). Other hosts are known in Europe, but *R. buoliana* was the target species for introductions in N. Amer.

- Pimpla ruficollis* Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 153. ♀.
Pimpla variegata Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 118. ♀.

Biology: Thorpe, 1930. Bul. Ent. Res. 21: 395. — Thorpe and Caudle, 1939. Parasitology 30: 523-528. — Juillet, 1959. Canad. Ent. 91: 709-719.

Genus SCAMBUS Hartig

Revision: Walley, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 14-79.

Genus SCAMBUS Subgenus ENDROMOPODA Hellen

Endromopoda Hellen, 1939. Notulae Ent. 19: 56.

Type-species: *Pimpla melanopyga* Gravenhorst. Orig. design.

detritus (Holmgren). N. B. to s. B. C., s. to Ohio and Calif.; Europe. Host: *Cephus cinctus* Nort., *C. pygmaeus* (L.), *Trachelus tavidus* (F.).

Pimpla detrita Holmgren, 1860. Svenska Vetensk.-Akad. Handl. (ser. 4), 3(10): 23. ♂, ♀.

Biology: Salt, 1931. Bul. Ent. Res. 22: 519-526. — Holmes, 1953. Canad. Ent. 85: 339.

lithocolletidis (Ashmead). Calif. Host: *Lithocolletis* sp. This is a new subgeneric placement. The host was reared from *Grindelia robusta* Nutt.

Pimpla lithocolletidis Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 447. ♂.

productus Walley. N. S., s. to R. I., w. to Alaska and Calif.

Scambus (Endromopoda) productus Walley, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 23. ♂, ♀.

rubescens Walley. Western N. Y., w. to Sask., s. to Kans. and Wyo.

Scambus (Endromopoda) rubescens Walley, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 19. ♂, ♀.

Genus SCAMBUS Subgenus LISSOSCAMBUS Walley

Scambus subg. *Lissoscambus* Walley, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 25.

Type-species: *Scambus (Lissoscambus) arizonensis* Walley. Orig. design.

arizonensis Walley. Colo., Ariz.; Mexico.

Scambus (Lissoscambus) arizonensis Walley, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 25. ♂, ♀.

Genus SCAMBUS Subgenus ATELEOPHADNUS Cameron

Ateleophadnus Cameron, 1905. Invertebrata Pacifica 1: 127.

Type-species: *Ateleophadnus bicarinata* Cameron. Monotypic.

deceptor Walley. Que., s. to N. Y., w. to B. C. and Colo.

Scambus (Ateleophadnus) deceptor Walley, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 35. ♂, ♀.

- granulosus** Walley. N. S., s. to S. C., w. to N. W. T. and Calif. Host: *Mompha eloisella* (Clem.).
Scambus (Atelophadnus) granulosus Walley, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 31. ♂, ♀.
- pterothori** (Ashmead). Northern N. S., s. to S. C., w. to Alaska and Calif. Host: *Periploca ceanothiella* (Cosens), *Gnorimoschema gallaeasteriella* (Kell.), *G. gallaeolidaginus* (Riley), *Mompha eloisella* (Clem.), *Achatodes zeae* (Harris), *Ancylics comptana* (Froel.), *Epiblema otiosanum* (Clem.), *E. scudderianum* (Clem.), *E. strenuanum* (Wlk.), *Grapholitha molesta* (Bsk.), *Laspeyresia pomonella* (L.), *Proteoteras aesculana* Riley, *Platyptilia carduidactyla* (Riley), *P. williamsi* (Grin.), *Ostrinia nubilalis* (Hbn.), *Mononychus vulpeculus* (F.), *Ametastegia glabrata* (Fallen).
Pimpla pterophori Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 445. ♀.
Colpomera litoralis Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 367. ♂.
Atelophadnus bicarinata Cameron, 1905. Invertebrata Pacifica 1: 128. ♀.
- Biology:** Vinal and Caffrey, 1919. Mass. Agr. Expt. Sta., Bul. 189: 58. — Leiby, 1922. N. Y. Ent. Soc., Jour. 30: 93. — Cushman, 1926. Ent. Soc. Wash., Proc. 28: 33. — Wilder, 1927. Psyche 34: 227-229. — Balduf, 1929. Ohio Jour. Sci. 29: 224-226.

Genus SCAMBUS Subgenus SCAMBUS Hartig

- Scambus* Hartig, 1838. Jahresber. Fortschr. Forstwiss. Forstl. Naturk. 1: 267.
 Type-species: *Scambus sagax* Hartig. Desig. by Viereck, 1914.
- Tromera* Foerster, 1868. Naturh. Ver. Rheinlande, Vehr. 25: 164.
 Type-species: *Pimpla pomorum* Ratzeburg. Monotypically included and desig. by Schmiedeknecht, 1888.
- Epiurus* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 164. Preocc. by Rafinesque, 1815.
 Type-species: *Pimpla calobata* Gravenhorst. Here desig. from two species included by Woldstedt, 1877 (1876).
- Troctocerus* Woldstedt, 1877 (1876). Acad. Imp. des Sci. St. Petersburg, Bul. 22: 296.
 Type-species: *Troctocerus elegans* Woldstedt. Monotypic.
- Pseudopoemenia* Kiss, 1924. Siebenbuerg. Ver. Naturw., Verh. u. Mitt. 72-74: 91.
 Type-species: *Pseudopoemenia annulata* Kiss. Monotypic.
- annulatus** (Kiss), N. S., Que., N. H., N. W. T., Alaska and B. C.; Europe. Host: *Spilonota ocellana* (D. and S.). This species had been misidentified as *Scambus nucum* (Ratzeburg), a synonym of *planatus* Hartig, which is not known from North America.
Pseudopoemenia annulata Kiss, 1924. Siebenbuerg. Ver. Naturw., Verh. u. Mitt. 72-74: 92. ♂.
- Pimpla lativentris* Ulbricht, 1926. Konowia 5: 51. ♂, ♀. Preocc. by Rudow, 1881.
Pimpla trilobata Keler, 1937. Prace Wydz. Chorob. Roslin Panst. Inst. Nauk. Gosp. Wiejsk. w Bydgoszczy 16: 11. ♂, ♀.
- Taxonomy:** Oehlke, 1966. Beitr. z. Ent. 16: 189.
- aplopappi** (Ashmead). Nebr., Colo., N. Mex., Idaho, Ariz., Wash., Calif. Host: *Coleotechnites milleri* (Bsk.), *Etiella zinckenella* (Treit.), *Rhyacionia frustrana bushnelli* (Bsk.), *R. neomexicana* (Dyar), *Stomopteryx nigrella* (Cham.).
Pimpla aplopappi Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 446. ♂.
Scambus euvtrivorus Rohwer, 1915. U. S. Natl. Mus., Proc. 49: 225. ♀.
- atrocoxalis** (Ashmead). Newfoundland (Labrador), N. W. T., Alta., Yukon, Alaska; Sweden.
Epiurus atrocoxalis Ashmead, 1902. Wash. Acad. Sci., Proc. 49: 225. ♂, ♀.
- brevicornis** (Gravenhorst). Newfoundland (Labrador) s. to N. J., w. to Alaska and Calif.; Greenland; Europe. Host: *Anthophila pariana* (Clerck), *Choristoneura rosaceana* (Harris), *Laspeyresia nigricana* (Steph.), *Laspeyresia* sp., *Parlobesia viteana* (Clem.), *Spilonota ocellana* (D. and S.).
Pimpla brevicornis Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 211. ♂, ♀.
Pimpla nigriscaposa Thomson, 1877. Opusc. Ent. 8: 755. ♂, ♀.
Pimpla punctiventris Thomson, 1877. Opusc. Ent. 8: 756. ♂, ♀.
Pimpla (Epiurus) balearica Kriechbaumer, 1894. Ann. Hist. Nat. Madrid 23: 248. ♀.
Epiurus bicoloripes Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 201. ♀.

- Phthorinus anomalus* Morley, 1905. Ent. Soc. London, Trans. 53: 420. ♀.
Pimpla euphrantae Schmiedeknecht, 1914. Ztschr. f. Angew. Ent. 1: 452. ♂, ♀.
Pimpla ameformis Keler, 1937. Prace Wydz. Chorob. Roslin Panst. Inst. Nauk. Gosp. Wiejsk. w Bydgoszczy 16: 10. ♂, ♀.
- Biology: Stuart, 1957. Bul. Ent. Res. 48: 477-488.
- buoliana** (Hartig). Europe. Introduced in Ontario in 1956 and 1958, but apparently without becoming established. Host: *Rhyacionia buoliana* (D. and S.).
Pimpla Buoliana Hartig, 1838. Jahresber. Fortschr. Forstwiss. Forstl. Naturk. 1: 267. ♂, ♀.
Pimpla flavotrochanterata Pfeffer, 1913. Ver. f. Vaterland. Naturk. in Wuerntemb., Jahresh. 69: 314. ♀.
- Biology: Leius, 1960. Canad. Ent. 92: 371. —Leius, 1961. Canad. Ent. 93: 1079. —Leius, 1962. Canad. Ent. 94: 1078. —Leius, 1963. Canad. Ent. 95: 202.
- canadensis** Walley. Northern Que., s. to N. S. and Maine, w. to Alaska and Calif. Host: *Glypta fumiferanae* (Vier.), *Choristoneura confictana* (Wlk.).
Scambus (Scambus) canadensis Walley, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 38. ♂, ♀.
- decorus** Walley. N. S. and Que., s. to Mich., w. to Alaska and Wash. Host: *Amorbia humerosa* (Clem.), *Choristoneura fumiferana* (Clem.), *Coleophora pruniella* Clem., *C. fuscedinella* Zell., *Microsetia stipella* (Hbn.), *Graciliaria* sp., *Paraclemensia acerifoliella* (Clem.), *Phalonia rutilana* (Hbn.), *Spilonota ocellana* (D. and S.).
Scambus (Scambus) decorus Walley, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 38. ♂, ♀.
- dioryctriae** Walley. Sask., Alta. Host: *Dioryctria reniculella* (Grt.).
Scambus (Scambus) dioryctriae Walley, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 61. ♂, ♀.
- foliae** (Cushman). Austria. Introduced in Maine, apparently without becoming established because of small number of individuals released (50 mated females). Host: *Heterarthrus nemoratus* (Fallen).
Epirus foliae Cushman, 1938. Wash. Acad. Sci., Jour. 28: 27. ♂, ♀.
- Biology: Dowden, 1941. U. S. Dept. Agr., Tech. Bul. 757: 8, 9, 11, 16-20.
- hispa** (Harris). N. S. s. to Ala., w. to Alaska and Calif. Host: *Acrobasis betulella* Hulst, A. *comptoniella* Hulst, A. *rubifasciella* Pack., *Anacampis innocuella* (Zell.), *Dryocampa rubicunda* rubicunda (F.), *Anthophila pariana* (Clerck), *Archips rosanus* (L.), *Choristoneura fumiferana* (Clem.), *C. pinus* Free., *Coleophora pruniella* Clem., *Epismus argutanus* (Clem.), *Exartema connectum* McD., *Hedia variegana* (Hbn.), *Acleris minuta* (Rob.), *Grapholitha molesta* (Bsk.), *Tigrioides bicolor* (Grt.), *Malacosoma disstria* Hbn., *Psilocorsis* sp., *Spilonota ocellana* (D. and S.), *Tischeria* sp., *Thyridopteryx ephemeraeformis* (Haw.), *Rhyacionia buoliana* (D. and S.), *Heterarthrus nemoratus* (Fallen), *Metallus rohweri* MacG., *Anoplitis inaequalis* (Weber), *A. rosea* (Weber), *Arthrochlamys bebbianae* Brown, *Xenochalepus dorsalis* (Thun.), *Hyposoter fugitivus* (Say).
- Ichneumon hispa* Harris, 1833. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., p. 587. Nomen nudum.
- Ichneumon hispa* Harris, 1835. Boston Soc. Nat. Hist., Jour. 1: 149-150. ♀.
- Pimpla indagatrix* Cresson, 1870. Amer. Ent. Soc., Trans. 3: 146. ♂.
- Pimpla minuta* Weed, 1887. Ill. State Lab. Nat. Hist., Bul. 3: 41. ♂.
- Pimpla gossypii* Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 445. ♀.
- Scambus (Scambus) tecumseh* Viereck, 1917. Conn. State Geol. and Nat. Hist. Survey Bul. 22: 320. ♀. N. syn. In Walley's revision of *Scambus* this name is incorrectly applied to a species for which no name is apparently available.
- Scambus (Eremochila) indagator* (!) Viereck, 1917. Conn. State Geol. and Nat. Hist. Survey Bul. 22: 322.
- Biology: Porter and Garman, 1923. Conn. (State) Agr. Expt. Sta., Bul. 246: 260. —Balduf, 1926. Canad. Ent. 58: 140. —Cushman, 1927. Jour. Agr. Res. 34: 616. —McConnell, 1928.

- Md. Agr. Exp. Sta., Bul. 298: 180. —Schaffner and Griswold, 1934. U. S. Dept. Agr., Misc. Pub. 188: 143. —Balduf, 1937. Ent. Soc. Wash., Proc. 39: 178. —Arthur, 1963. Canad. Ent. 95 (10): 1085-1086.
- imparis** Walley. Colo., Alta., Utah, B. C., Wash., Calif. Host: *Zelleria haimbachi* Bsk.
Scambus (*Scambus*) *imparis* Walley, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 51. ♂, ♀.
- longicarpus longicarpus** Walley. Que., N. H., Ont., Sask., Alta., Alaska. Host: *Dioryctria reniculella* (Grt.), *Laspeyresia youngana* (Kft.).
Scambus (*Scambus*) *longicarpus longicarpus* Walley, 1960. In Townes and Townes, U. S. Nat. Mus. Bul. 216 (pt. 2): 44. ♂, ♀.
- longicarpus occidentalis** Walley, Mont., Colo., B. C., Wash., Calif.
Scambus (*Scambus*) *longicarpus occidentalis* Walley, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 46. ♂, ♀.
- nigrifrons** (Viereck). P. E. I., N. S., N. B., Mass., Mich. Host: *Orgyia* sp, *O. leucostigma* (J. E. S.).
Pimpla (*Epiurus*) *nigrifrons* Viereck, 1909. Ent. Soc. Wash., Proc. 11: 211. ♂, ♀.
- protentus** Walley. Colo., B. C., Wash. Ecology: The holotype emerged from cones of *Picea sitchensis*. Host: *Laspeyresia* sp.
Scambus (*Scambus*) *protentus* Walley, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 40. ♂, ♀.
Scambus (*Scambus*) *portentus* (!) Walkley, 1967. In Krombein and Burks, U. S. Dept. Agr., Agr. Monog. 2, Sup. 2, p. 63.
- sagax** Hartig. Europe. Introduced in Ontario in 1956 and 1958, apparently without becoming established. Host: *Rhyacionia buoliana* (D. and S.), *Petrova resinella* (L.). The target species for the introductions in Ontario was *R. buoliana*.
Scambus sagax Hartig, 1838. Jahresber. Fortschr. Forstwiss. Forstl. Naturk. 1: 267. ♂, ♀.
Pimpla linearis Ratzeburg, 1844. Ichn. d. Forstins. v. 1, p. 117. ♂, ♀.
Pimpla atrocoxata Pfeffer, 1913. Ver. f. Vaterland. Naturk. in Wuerttemb., Jahresh. 69: 343. ♀.
- Biology: Harris, 1960. Canad. Jour. Zool. 38: 764. —Adlung and Sailer, 1963. Allg. Forst-u. Jagd-Ztg. 134 (9): 232-233.
- subtilis** Walley. Oreg., Nev., Calif.
Scambus (*Scambus*) *subtilis* Walley, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 47. ♀.
- transgressus** (Holmgren). Idaho, s. B. C., Wash., Oreg., Calif. Host: *Grapholitha packardii* (Zell.), *Acleris variana* (Fern.), *Archips rosanus* (L.), *Choristoneura occidentalis* Free., *Anthophila pariana* (Clem.), *Coleophora laricella* (Hbn.).
Pimpla transgressus Holmgren, 1869 (1868). Eug. Resa, pt. 2 (Zool.), sect. 1 (Ins.), p. 405. ♀.
Epiurus innominatus Viereck, 1912. U. S. Natl. Mus., Proc. 42: 149. ♀.

Genus SCAMBUS Subgenus ERYTHROSCAMBUS Walley

- Scambus* subg. *Erythroscambus* Walley, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 77.
Type-species: *Pimpla hirticauda* Provancher. Orig. desig.
- hirticauda** (Provancher). Ariz., B. C., Wash., Calif. Host: *Lithocolletis felinelle* Hein., *Setiostoma fernaldella* Riley, *Gracillaria* sp.
Pimpla hirticauda Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 116. ♀.
Provancher erroneously gave the type locality as Ontario, but Walley (1960) established that Victoria, B. C. is the actual type locality.

Genus CALLIEPHIALTES Ashmead

- Calliephialtes* Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 54.
Type-species: *Pimpla xanthothorax* Ashmead. Monotypic and orig. desig.

- ferrugineus** Cushman. Southern Fla.; Puerto Rico, Cuba. Host: *Hypsipyla grandella* (Zell.), *Pectinophora gossypiella* (Sdrs.). The specimens upon which these host records are based are from Puerto Rico.
Calliephialtes ferrugineus Cushman, 1940. U. S. Natl. Mus., Proc. 88: 362. ♀.
- grapholithae** (Cresson). Mass., s. to Fla., w. to Mich. and Texas. Host: *Acrobasis hebescella* Hulst, *A. juglandis* (LeB.), *A. rubrifasciella* Pack., *Carmenta texana* (Hy. Ed.)?, *Laspeyresia caryana* (Fitch), *Meskea dyspteraria* Grt., *Stigmatophora ceanothiella* Cos., *Thyridopteryx ephemeraeformis* (Haw.), *Megalopyge opercularis* (J. E. S.).
Pimpla grapholithae Cresson, 1890. In Hamilton, Ent. News 1: 50. ♂, ♀.
Pimpla xanthothorax Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 446. ♀.
- Biology: Hamilton, 1890. Ent. News 1: 49 — Nickels, Pierce, and Pinkney, 1950. U. S. Dept. Agr., Tech. Bul. 1011: 12-14.
- Morphology: Peck, 1937. Canad. Jour. Res., Sect. D (Zool. Sci.) 15: 248, 249, 252.
- notandus** (Cresson). Southern Que., s. to Fla., w. to S. B. C. and Calif. Host: *Epiblema desertanum* (Zell.), *E. scudderianum* (Clem.), *E. strenuanum* (Wlk.), "*Gelechia*" sp., *Gnorimoschema baccharisella* Bsk., *G. gallaeasteriella* (Kell.), *G. gallaesolidaginis* (Riley), *Walshia "amorphella"* Clem.
Pimpla notanda Cresson, 1870. Amer. Ent. Soc., Trans. 3: 148. ♂, ♀.
- Biology: Riley, 1877. Mo. State Ent., Ann. Rept. 9: 98. — Leiby, 1922. N. Y. Ent. Soc., Jour. 30: 93.
- thurberiae** Cushman. Southeastern N. Mex., Ariz.; Mexico, Costa Rica. Host: *Anthonomus grandis thurberiae* Pierce, *Disholcaspis* sp., *Acrobasis nuxvorella* Neun., *Antron plumbeum* (Weld).
Calliephialtes thurberiae Cushman, 1915. Ent. Soc. Wash., Proc. 17: 132. ♂, ♀.

Genus PIMPLA Fabricius

- Pimpla* Fabricius, 1804. Systema piezatorum, p. 112.
 Type-species: *Ichneumon manifestator* Linnaeus. Desig. by Curtis, 1828. Members of this genus parasitize aculeate Hymenoptera which nest in wood. My reasons for using the name *Pimpla* rather than *Ephialtes* for this genus are given in the introductory discussion of the Ichneumonidae.
- brevis** (Morley). Que., Ont., Man., Sask., Alta.; Europe. Host: *Megachile* sp., *M. inermis* Prov., *M. nivalis* Friese.
Ephialtes brevis Morley, 1914. Rev. Ichn. Brit. Mus., v. 3, p. 23. ♀.
- decumbens** Townes. Iowa, Colo., B. C., Calif.
Pimpla decumbens Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 102. ♂, ♀.
- macra** (Cresson). N. Y., Colo., Oreg., Calif. Host: *Passaloecus* sp. The host record given by Townes and Townes as "*N. brevicornis*" is a mistake for *Dendroctonus brevicornis* LeC., the pupal cells of which harbored the true host, *Passaloecus* sp.
Ephialtes macer Cresson, 1868. Canad. Ent. 1: 35. ♀.
- spatulata** Townes. Que. s. to N. C., w. to B. C. and Calif.; Europe. Host: *Euodynerus* sp., *Ancistrocerus lineativentris* Cameron.
Pimpla spatulata Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 106. ♂, ♀.

Genus LIOTRYPHON Ashmead

- Liogaster* Kriechbaumer, 1890. Ent. Nachr. 16: 297. Preocc. by Meyer, 1844.
 Type-species: *Liogaster longulus* Kriechbaumer. Monotypic.
- Liotryphon* Ashmead, 1900. Canad. Ent. 30: 368. New name for *Liogaster* Kriechbaumer.
- Apistes* Seyrig, 1927. Eos 3: 221. Preocc. by Fischer, 1823; Cuvier, 1829.
 Type-species: *Apistes perversus* Seyrig. Monotypic. The type-species is regarded as a synonym of *Liotryphon ruficollis* (Desvignes).
- Apistephialtes* Seyrig, 1928. Eos 4: 380. N. name for *Apistes* Seyrig.

Neophialtes Constantineanu and Pisica, 1970. An. Stiintifice Universitatii "Al. I. Cuza" din Iasi, sect. II (Stiinte Nat.) a. Biol. Mong. 2: 18.

Type-species: *Neophialtes foveolatus* Constantineanu and Pisica. Monotypic and orig. desig.

arcticus (Roman). N. W. T., Alaska; Siberia.

Ephialtes arcticus Roman, 1926 (1914). Acad. Imp. des Sci. St. Petersburg, Mem., ser. 8 (cl. Phys. Math.) 29 (7): 6. ♀.

caudatus (Ratzeburg). Europe. Introduced in California in 1904 and 1905 and in the eastern U. S. A. in 1935 and 1936, apparently without becoming permanently established. Host: *Laspeyresia pomonella* (L.).

Pimpla caudata Ratzeburg, 1848. Ichn. d. Forstins., v. 2, p. 92. ♀.

Ephialtes brevisvalvis Hensch, 1929; 1930. Konowia 8: 159; 9: 75, 249. ♂, ♀.

Neophialtes foveolatus Constantineanu and Pisica, 1970. Stiintifice Universitatii "Al. I. Cuza" din Iasi, sect. II (Stiinte Nat.) a. Biol. Monog. 2: 19. ♀.

Taxonomy: Perkins, 1939. Bul. Ent. Res. 30: 307-308.

Biology: Whitaker, 1907. Calif. State Comm. Hort., Bien. Rpt. 2: 231-235.

coracinus (Townes), N. Y., N. J., Md., N. C., Tex.

Apistephialtes coracinus Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 99. ♂, ♀.

dentatus (Townes). Colo., Alta., B. C., Oreg., Calif. Host: *Enoclerus sphegus* (F.), *Thanasimus nigriventris* (LeC.).

Apistephialtes dentatus Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 97. ♂, ♀.

laspeyresiae (Uchida). Japan. Introduced in N. J. from 1934-1936, apparently without becoming established. Host: *Grapholitha molesta* (Bsk.).

Ephialtes laspeyresiae Uchida, 1932. Insecta Matsumurana 6: 160. ♂, ♀.

Biology: Allen, Holloway, and Haeussler, 1940. U. S. Dept. Agr. Cir. 561: 48.

masoni (Townes). Ont., Man., N. W. T., Alta., Alaska, Yukon.

Apistephialtes masoni Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 93. ♀.

nucicola (Cushman). Colo., N. Mex., Ariz., B. C. s. to Calif. Ecology: May parasitize lepidopterous inquilines in the galls of the Hymenoptera listed as hosts. Host: *Andricus* sp., *Atrusca* sp., *Disholcaspis eldoradensis* (Beut.), *Pontania* sp., *Gnorimoschema baccharisella* Bsk., *Laspeyresia pomonella* (L.), *Periploca ceanothiella* (Cosens), *Proteoteras arizonae* Kft., *Walshia amorphella* Clem., *Melissopus latiferreanus* (Wlsm.). *Calliephialtes nucicola* Cushman, 1931. U. S. Natl. Mus., Proc. 79 (14): 5. ♂, ♀.

petulcus (Cresson). Tex.; Mexico.

Pimpla petulca Cresson, 1872. Amer. Ent. Soc., Trans. 4: 165. ♀.

punctulatus (Ratzeburg). Europe. Introduced in Idaho (year unknown), without attempts at recovery; lacking evidence to the contrary, it is here presumed to be unestablished. Host: *Laspeyresia pomonella* (L.). Other hosts are known, but that listed was the target species for the introduction in Idaho.

Pimpla punctulata Ratzeburg, 1848. Ichn. d. Forstins., v. 2, p. 90. ♀.

Ephialtes extensor Taschenberg, 1863. Ztschr. Gesam. Naturw. Halle 21: 255. ♂, ♀. This is the name which was applied to the material imported to Idaho.

Ephialtes discolor Brischke, 1880. Naturf. Gesell. Danzig, Schr. (n. s.) 4 (4): 110. ♂, ♀.

Liogaster longulus Kriechbaumer, 1890. Ent. Nachr. 16: 297. ♀.

Ephialtes macrurus Habermehl, 1916. Ztschr. f. Wiss. Insektenbiol. 12: 163. ♀. Preocc. by Thomson, 1895.

Ephialtes tener Hensch, 1929; 1930. Konowia 8: 140; 9: 75, 245. ♂, ♀.

Ephialtes vernalis Hensch, 1929; 1930. Konowia 8: 152; 9: 76. ♂.

Ephialtes gracilentus Hensch, 1930. Konowia 9: 75. Nomen nudum.

Taxonomy: Perkins, 1939. Bul. Ent. Res. 30: 307-308.

Biology: Lyngnes, 1960. Norsk Ent. Tidsskr. 11: 122-134.

- variatus* (Provancher). Que., N. H. s. to Md., W. Va., w. to Minn. Host: *Canarsia ulmiarrosorella* (Clem.), *Laspeyresia pomonella* (L.), *Grapholitha molesta* (Bsk.).
Ephialtes variatus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 114. ♂.
Pimpla stultor Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 367. ♂.
Calliephialtes benefactor Cushman, 1931. U. S. Natl. Mus., Proc. 79 (14): 6. ♂, ♀.

Genus TOWNESIA Ozols

Townesia Ozols, 1962. Latvijas Ent. 6: 12.

Type-species: *Ephialtes tenuiventris* Holmgren. Monotypic and orig. desig.

tenuiventris (Holmgren). Que. s. to Md., w. to B. C. and Calif.; Eurasia. Ecology: Known to parasitize aculeate Hymenoptera which nest in wood as well as sawflies which occupy abandoned pupal cells of Coleoptera in the bark of trees, particularly *Pinus*. Host: *Trypoxylon figulus* (L.), *Chelostoma maxillosum* (L.), *Xiphydria* sp., *Strongylogaster* sp., *S. lineata* (Christ). Except for *Xiphydria* sp., the preceding host records are European. The record for *Xiphydria* sp. needs confirming, and the host record given in the revision of Townes and Townes (1960) as *Melanophila consputa* LeC. appears to be incorrect according to card file data pertaining to the specimen in question.

Ephialtes tenuiventris Holmgren, 1859. Svenska Vetensk. Akad., Ofvers. af ... Forhandl. 16: 123. Nomen nudum.

Ephialtes tenuiventris Holmgren, 1860. Svenska Vetensk.- Akad., Handl. (ser. 4) 3 (10): 14. ♂, ♀.

Ephialtes geniculatus Brischke, 1864. Phys. Oekonom. Gesell. Koenigsberg, Schr. 5: 179. ♂. Uncertain syn.

Ephialtes pusio Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 111. ♀.

Ephialtes antefurcalis Thomson, 1877. Opusc. Ent. 8: 741. ♀.

Ephialtes pacificus Harrington, 1894. Canad. Ent. 26: 248. ♂, ♀.

Ephialtes incertus Hensch, 1929; 1930. Konowia 8: 149; 9: 76. ♂.

Ephialtes gracilis Hensch, 1930. Konowia 9: 76. Nomen nudum.

Biology: Welke, 1966. Beitr. z. Ent. 9: 261-263.

Genus ANASTELGIS Townes

Anastelgis Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 109.

Type-species: *Anastelgis terminalis* Townes. Orig. desig.

terminalis Townes. Wash., Calif.

Anastelgis terminalis Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 110. ♂, ♀.

Genus DOLICHOMITUS Smith

Closterocerus Hartig, 1847. Naturw. Ver. Harz, Ber., 1846-1847, p. 18. Preocc. by Westwood, 1833.

Type-species: *Closterocerus sericeus* Hartig. Monotypic.

Dolichomitus Smith, 1877. Zool. Soc. London, Proc., p. 411.

Type-species: *Dolichomitus longicauda* Smith. Monotypic.

Mesoephialtes Schmiedeknecht, 1906. Opusc. Ichn., v.3, p. 1014.

Type-species: *Mesoephialtes coracinus* Schmiedeknecht. Monotypic. The type-species is regarded as a subspecies of *Dolichomitus zonatus* (Cresson).

Diclosteroecus Viereck, 1914. U. S. Natl. Mus. Bul. 83: 45. New name for *Closterocerus* Hartig.

Ichneumon subg. *Exeristoidea* Viereck, 1924. Canad. Ent. 56: 202.

Type-species: *Ichneumon (Exeristoidea) watsoni* Viereck. Orig. desig.

Tuberculephialtes Ozols, 1962. Latvijas Ent. 6: 19.

Type-species: *Ichneumon tuberculatus* Geoffroy. Orig. desig.

Members of this genus parasitize woodborers, usually Coleoptera. Ideally, the name *Ephialtes* would apply to this genus (see introductory discussion of the family).

- aciculatus** (Hellen). Que., Yukon, B. C.; Europe. Host: *Tetropium gabrieli* Weise. This is a European host record.
Ephialtes aciculatus Hellen, 1915. Soc. pro Fauna et Flora Fenn., Acta 40: 25. ♀.
Ephialtes nodosus Gyorfi, 1941. Erdeszeti Kiserletek 43: 237, 247. "♂" = ♀.
- Morphology: Noskiewicz and Chudoba, 1951. Polski Pismo Ent. 21: 43-46, 57-58.
- buccatus** Townes. Colo., B. C., Oreg.
Dolichomitius buccatus Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 141. ♀.
- californicus** Townes. Colo., N. Mex., Ariz., Idaho, Utah, B. C. s. to Calif. Host: *Oeme costata* LeC., *Semanotus ligneus* (F.).
Dolichomitius californicus Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 146. ♂, ♀.
- cephalotes** (Holmgren). Que., Sask., Alta.; Europe.
Ephialtes cephalotes Holmgren, 1859. Svenska Vetensk-Akad., Ofvers. af ... Forhandl. 16: 123. Nomen nudum.
Ephialtes cephalotes Holmgren, 1860. Svenska Vetensk.-Akad. Handl. (ser. 4) 3 (10): 13. ♀.
Ephialtes longicauda Mocsary, 1897. Termes. Fuzetek 20: 644. ♀. Preocc. in
Dolichomitius by Smith, 1877.
Ichneumon (*Ezeristioidea*) *watsoni* Viereck, 1924. Canad. Ent. 56: 202. ♀.
- cuspidatus** Townes. Calif. Host: *Monochamus maculosus* Hald.
Dolichomitius cuspidatus Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 120. ♂, ♀.
- dolichosoma** (Viereck). Pa., Md., N. C., S. C., Ga., Ala., Kans., Colo. Ecology: Parasitizes woodborers of angiosperms.
Ephialtes dolichosoma Viereck, 1912. U. S. Natl. Mus., Proc. 42: 637. ♀.
- flexilis** Townes. Man., N. W. T., Yukon.
Dolichomitius flexilis Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 142. ♀.
- foxleei** Townes. N. S. w. to B. C., s. to Colo. and Calif. Host: *Acanthocinus* sp.
Dolichomitius foxleei Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 145. ♀.
- imperator** (Kriechbaumer). N. S. s. to Tenn., w. to Alaska and Calif; Eurasia. Host: *Aseum nitidum* LeC., *Xylotrechus* sp., *Monochamus* sp.
Ephialtes imperator Kriechbaumer, 1854. Stettin. Ent. Ztg. 15: 156. ♀.
Ephialtes occidentalis Cresson, 1865. Ent. Soc. Phila., Proc. 4: 269. ♀.
- irritator** (Fabricius). Maine s. to Ga., w. to Minn. and Tex. Host: *Anoplodera proxima* (Say), *Astyleopus variegatus* (Hald.), *Elaphidionoides incertus* (New.), *E. villosus* (F.), *Graphisurus* sp., *G. fasciatus* (DeG.), *Megacyllene caryae* (Gah.), *M. robiniae* (Forst.), *Obrum rufulum* Gah., *Pachyta lamed* (L.), *Saperda discoidea* F., *Stenocorus lineatus* (Oliv.), *Xylotrechus annosus* (Say), *Melandrya striata* Say, *Synchroa punctata* New., *Cryptorhynchus lapathi* (L.), *Chrysobothris* sp., *Synanthedon tipuliformis* (Clerck).
Ichneumon irritator Fabricius, 1775. Systema Ent., p.336. ♀.
- Biology: Chittenden, 1893. U. S. Dept. Agr., Insect Life 5: 257. — MacAndrews, 1933. Ent. Soc. Ontario, Ann. Rpt. 63: 50.
- Morphology: Pratt, 1939. Ent. Soc. Amer., Ann. 32: 735, 737.
- messor perlongus** (Cresson). N. B. s. to Va., w. to B. C. and Calif. Host: *Buprestis confluenta* Say, *Saperda calcarata* Say, *Saperda inornata* Say, *Xylocrius agassizi* (LeC.). *D. messor messor* Gravenhorst is European.
Ephialtes perlongus Cresson, 1870. Amer. Ent. Soc., Trans. 3: 143. ♂.
Ephialtes gigas Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 110. ♀.
Dolichomitius messor sparsus Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 132, 133. ♂, ♀. N. syn.

- populneus** (Ratzeburg). Ont., Sask., Colo., Wash.; Europe. Host: *Saperda populnea* (L.). This host is recorded from Europe, but one North American specimen has been reared from an unknown borer in *Populus* sp.
Ephialtes populneus Ratzeburg, 1848. Ichn. d. Forstins., v. 2, p. 100. ♂, ♀.
Ephialtes abbreviatus Thomson, 1877. Opusc. Ent. 8: 740. ♂, ♀.
- Taxonomy:** Hinz, 1961. Deut. Ent. Ztschr. (N. F.) 8: 254-255.
- pterelas** (Say). N. B. s. to S. C., w. to B. C. and Oreg.; Europe.
Ichneumon (Pimpla) pterelas Say, 1829. Contrib. Maclurian Lyceum to Arts and Sci. 1: 71. ♀.
Ephialtes discrepans Hensch, 1929; 1930. Konowia 8: 145; 9: 74. ♂.
- Taxonomy:** Cushman and Gahan, 1921. Ent. Soc. Wash., Proc. 23: 166.
- pygmaeus** (Walsh). N. H. s. to N. C., w. to B. C. and Calif. Host: *Plectrura spinicauda* Mann.
Ephialtes pygmaeus Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 111. ♀.
- sericeus** (Hartig). N. B., Que., Ont., Alaska, Yukon, B. C.; Europe. Host: *Tetropium cinnamopterum* Kby.
Closterocerus sericeus Hartig, 1847. Naturw. Ver. Harz, Ber. 1846-1847, p. 18. ♂.
- taeniatus** Townes. Ariz., Calif. Host: *Chrysobothris edwardsii* Horn.
Dolichomitus taeniatus Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 118. ♂, ♀.
- terebrans nubilipennis** (Viereck). N. S. s. to N. C., w. to B. C. and Calif. Host: *Pissodes dubius* Rand., *P. engelmanni* Hopk., *P. fasciatus* LeC., *P. fraseri* Hopk., *P. rotundatus* LeC. *D. terebrans terebrans* (Ratzeburg) occurs in Europe.
Exeristes nubilipennis Viereck, 1912. U. S. Natl. Mus., Proc. 42: 638. ♀.
Exeristes hyalinipennis Viereck, 1912. U. S. Natl. Mus., Proc. 42: 638. ♀.
- Biology:** Taylor, 1929. Ent. Amer. 10: 26-30, 68.
- tuberculatus tuberculatus** (Geoffroy). N. B. s. to N. Y., w. to Alaska and Oreg.; Europe, northern Asia (excluding Japan). Host: *Hylobius pinicola* (Coup.), *Monochamus* sp., *M. scutellatus* (Say). A second subspecies, *D. t. jezoensis* (Uchida), occurs in Japan.
Ichneumon tuberculatus Geoffroy, 1785. In Fourcroy, Ent. Parisiensis, v. 2, p. 385. ♀.
Ichneumon leucopterus Gmelin, 1790. In Linnaeus, Syst. Nat., Ed. 13, p. 2699. ♂ ?
 Uncertain syn.
Ichneumon hyalinus Gmelin, 1790. In Linnaeus, Syst. Nat., Ed. 13, p. 2700. ♀. Uncertain syn.
Ichneumon crispus Christ, 1791. Naturgesch. Class. Nomencl. Ins., p. 364. ♀. Uncertain syn.
Ichneumon fluctuans Christ, 1791. Naturgesch. Class. Nomencl. Ins., p. 365. ♀. Uncertain syn.
Ephialtes parallelus Thomson, 1888. Opusc. Ent. 12: 1248. ♀.
Ephialtes dentiventris Hellen, 1915. Soc. Fauna et Flora Fenn., Acta 40: 29. ♀. Uncertain syn.
Ephialtes pfefferi Habermehl, 1918. Ztschr. f. Wiss. Insektenbiol. 13: 165. ♀.
- Biology:** Stroiyny, 1951. Polskie Pismo Ent. 21: 140-144.
- vitticrus** Townes. Que. s. to Pa., w. to Wis. and Kans.
Dolichomitus vitticrus Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 148. ♂, ♀.

Genus ACROPIMPLA Townes

Selenaspis Roman, 1910. Ent. Tidskr. 31(2-3): 191. Preocc. by Bleeker, 1858; Leonardi, 1898.

Type-species: *Hemipimpla alboscuteellaris* Szepligeti. Orig. desig.

Acropimpla Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 159.

Type-species: *Charitopimpla leucostoma* Cameron. Orig. desig. Walkley (1967; In Krombein and Burks, U. S. Dept. Agr., Agr. Monog. 2, sup. 2, p. 68) states that *Acropimpla* must have the same type-species as *Selenaspis*, but this is incorrect

because Townes did not expressly propose *Acropimpla* as a replacement name for *Selenaspis*.

alboricta (Cresson). Newfoundland (Labrador) s. to S. C., w. to Alaska and Calif. Host: *Acrobasis betulella* Hulst, *Anacampsis* sp., *Archips argyrosipilus* (Wlk.), *Argyrotaenia pinatubana* (Kft.), *Choristoneura fumiferana* (Clem.), *C. rosaceana* (Harris), *Episimus argutatus* (Clem.), *Gracilaria rhoifoliella* Chamb., *Pandemis limitata* (Rob.), *Pantographa limata* G. and R., *Spilonota ocellana* (D. and S.), *Zotheca tranquilla* Grt. *Pimpla alboricta* Cresson, 1870. Amer. Ent. Soc. Trans. 3: 147. ♂. *Pimpla investigatrix* Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 142. ♀.

Biology: Cushman, 1926. Ent. Soc. Wash., Proc. 28: 33.

pronexus Townes. N. B. s. to N. Y., w. to B. C. and Wyo. Host: *Glypta fumiferanae* (Vier.). *Acropimpla pronexus* Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 161. ♀.

Genus GREGOPIMPLA Momoi

Gregopimpla Momoi, 1965. In Townes, Momoi, and Townes, Amer. Ent. Inst., Mem. 5: 601.

Type-species: *Pimpla kuwanae* Viereck. Orig. desig.

According to Momoi (1965), members of this genus are usually gregarious parasites of Lepidoptera which spin cocoons.

inquisitor (Scopoli). Europe. Introduced in Ont. in 1955 for control of the native *Choristoneura fumiferana* (Clem.). Only a small number of individuals (38) were released, which would seem to have precluded establishment.

Ichneumon inquisitor Scopoli, 1763. Ent. Carn., p. 286. ♀.

Ichneumon scanicus Geoffroy, 1785. In Fourcroy, Ent. Parisiensis, v. 2, p. 416. ♀.

Ichneumon albipes Gmelin, 1790. In Linnaeus, Syst. Nat., Ed. 13, v. 1, p. 2701. ♂.

Ichneumon variegatus Gmelin, 1790. In Linnaeus, Syst. Nat., Ed. 13, v. 1, p. 2701. ♂.

Preocc. by Schrank, 1785.

Ichneumon aurifrons Gmelin, 1790. In Linnaeus, Syst. Nat., Ed. 13, v. 1, p. 2702. ♀.

Ichneumon annulatus Gmelin, 1790. In Linnaeus, Syst. Nat., Ed. 13, v. 1, p. 2702. ♀.

Ichneumon pennator Fabricius, 1793. Ent. System., v. 2, p. 171. ♀. Preocc. by Fabricius, 1793, p. 155.

Ichneumon pinnator Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 274; 9: 348. N. name for *I. pennator* Fabricius, 1793, p. 155.

Pimpla flavipes Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 197. ♂.

Pimpla pini Hartig, 1838. Jahresber. Fortschr. Forstw. 1: 253. ♂, ♀.

Pimpla pudibundae Ratzeburg, 1848. Ichn. d. Forstins., v. 2, p. 167. ♂, ♀.

Pimpla inquisitrix Schulz, 1906. Spolia Hym., p. 104. Emend.

Genus ISEROPUS Foerster

Iseropus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 164.

Type-species: *Ichneumon graminellae* Schrank. By subsequent monotypy from inclusion by Woldstedt, 1877. The type-species is considered to be a synonym of *Iseropus stercorator* (F.).

Cnemopimpla Cameron, 1903. Entomologist 36: 159.

Type-species: *Cnemopimpla pilosa* Cameron. Monotypic.

Members of this genus are gregarious parasites of insects (usually Lepidoptera) which spin flimsy cocoons. One to twenty adults may emerge from one host cocoon.

californiensis Cushman. Colo., N. Mex., Calif. Host: *Malacosoma californicum californicum* (Pack.), *M. c. fragile* Stretch, *M. c. pluviale* Dyar, *Malacosoma* sp.

Iseropus californiensis Cushman, 1940. Ent. Soc. Wash., Proc. 42: 58. ♂, ♀. In his key, Cushman used the variant spelling "californicus."

- coelebs* (Walsh). N. B. s. to Fla., w. to Minn. and Tex. Host: *Orgyia leucostigma* (J. E. S.), *Orgyia* sp., *Malacosoma americanum* (F.), *M. dissτρια* Hbn., "*Olene*" sp., *Metallus rohweri* MacG.
Ichneumon inquisitor Say, 1829. Contrib. Maclurian Lyceum to Arts and Sci. 1: 71. ♀.
 Preocc. by Scopoli, 1763.
Pimpla coelebs Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 141. ♂.
Pimpla inquisitoriella Dalla Torre, 1901. Cat. Hym., v. 3, p. 435. N. name for *I. inquisitor* Say.
 Biology: Howard, 1897. U. S. Dept. Agr., Div. Ent. Bul. 7: 16. —Howard, 1897. U. S. Dept. Agr., Div. Ent. Tech. Ser. 5: 8-17, 23, 31, 54. —Howard, 1898. Ent. Soc. Ont., Ann. Rept. 28: 88. —Fiske, 1903. N. H. Agr. Expt. Sta., Tech. Bul. 6: 198-200. —Cushman, 1926. Ent. Soc. Wash., Proc. 28: 33. —Schaffner and Griswold, 1934. U. S. Dept. Agr., Misc. Pub. 188: 143.
 Morphology: Peck, 1937. Canad. Jour. Res., Sect. D (Zool. Sci.) 15: 245-246. —Pratt, 1939. Ent. Soc. Amer., Ann. 32: 735.
stercorator orgyiae (Ashmead). N. S. s. to Md., w. to Alaska and Calif. Host: *Choristoneura rosaceana* (Harr.), *Ctenucha virginica* (Charp.), *Halisidota* sp., *Orgyia* sp., *O. leucostigma* (J. E. S.), *O. vetusta* (Bdv.), *Malacosoma* sp., *M. dissτρια* Hbn., *Simyra henrici* (Grt.). *Iseropus stercorator stercorator* (Fabricius) occurs in Europe.
Pimpla orgyiae Riley, 1891. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 462. Nomen nudum.
Ictoplectis (!) *orgyiae* Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 213. ♀.
Pimpla (*Epiurus*) *brunneifrons* Viereck, 1909. Ent. News 20: 291. ♂, ♀.
Iseropus brunneifrons septentrionalis Cushman, 1940. Ent. Soc. Wash., Proc. 42: 56. ♂, ♀.
 Biology: Patch, 1921. Maine Agr. Expt. Sta., Bul. 302: 318. (as *coelebs*, misdet.).

Genus TROMATOBIA Foerster

- Tromatobia* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 164.
 Type-species: *Pimpla variabilis* Holmgren. Desig. by Ashmead, 1900 from ten species included by Schmiedeknecht, 1888.
Austropimpla Brethes, 1913. Buenos Aires, Mus. Nac. de Hist. Nat., An. 24: 40.
 Type-species: *Austropimpla huebrii* Brethes. Monotypic and orig. desig. Members of this genus are gregarious parasites of spider egg cocoons.
notator (Fabricius). N. C., Ga., Fla.; Cuba, Puerto Rico, Haiti, Guyana? Host: *Argiope argentata* (F.), *Glyptocranium cornigerum* (Hentz). The species was reared from the latter host in Fla., from the former in Puerto Rico.
Pimpla notator Fabricius, 1804. Systema Piezatorum, p. 115. ♀.
Clistopyga? *lateralis* Cresson, 1865. Ent. Soc. Phila., Proc. 4: 34. ♂, ♀.
Ephialtes Cressoni Dewitz, 1881. Berlin. Ent. Ztschr. 25: 205. ♀.
Pimpla notatrix Schulz, 1906. Spolia Hym., p. 104. Emend.
ovivora (Boheman). N. S. s. to S. C., w. to Alaska and Calif.; Mexico, Hawaii, Europe, n. Asia.
 Host: *Araneus diadema* L., *A. solitarius* (Emrtn.), *Argiope avara* Thor., *A. argentata* (F.), *Cyrtophora californiensis* Keys.
Pimpla ovivora Boheman, 1821. Svenska Vetensk.-Akad. Handl. (ser. 3) 9: 336. ♂, ♀.
Ichneumon vezatorius Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 281; 9: 368. [female].
Ichneumon armillatorius Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 281; 9: 368. [male].
Pimpla angens Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 162. ♂, ♀.
Pimpla scriptifrons Cresson, 1870. Amer. Ent. Soc., Trans. 3: 148. ♀.
Pimpla vidua Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 140. ♀.
Pimpla parallela Thomson, 1877. Opusc. Ent. 8: 752. ♀.
Pimpla albipes Brischke, 1891. Naturf. Gesell. Danzig, Schr. (n. s.) 7 (4): 63. ♂. Synonymy uncertain.
Pimpla defensor Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 267. ♀.
Pimpla defensatrix Schulz, 1906. Spolia Hym., p. 104. Emend.
Pimpla landerensis Viereck, 1906. Amer. Ent. Soc., Trans. 32: 243. ♀.

Apechthis rugulosa Morley, 1914. Rev. Ichn. Brit. Mus., v. 3, p. 34. ♀.

Biology: Nielsen, 1923. Ent. Meddel. 14: 194-195. — Shaw, 1930. N. Y. Ent. Soc., Jour. 38: 465.
rufopectus (Cresson). Maine s. to Fla., w. to Iowa and Tex. Host: *Argiope aurantia* (Lucas), *A. trifasciata* (Forsk.), *Epeira* sp. Townes (1960) treated *rufopectus* as a subspecies of *ovivora*, but the geographical range of *ovivora* extends throughout most of that of *rufopectus*. Morphological and biological differences discussed by Townes also indicate that these two taxa should be treated as separate species.

Pimpla rufopectus Cresson, 1870. Amer. Ent. Soc., Trans. 3: 148. ♀.

Biology: Champlain, 1922. Psyche 29: 97.

Morphology: Pratt, 1939. Ent. Soc. Amer., Ann. 32: 735.

variabilis (Holmgren). N. S. s. to Fla., w. to Alaska and Calif.; Europe; n. Asia.

Pimpla abdominalis Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 99. ♂.

Preocc. by Gravenhorst, 1829.

Pimpla variabilis Holmgren, 1856 (1854). Svenska Vetensk.-Akad. Handl. 75: 88. ♂, ♀.

Pimpla rufovariata Cresson, 1870. Amer. Ent. Soc., Trans. 3: 149. ♀.

Polysphincta cingulata Provancher, 1875. Nat. Canad. 3: 141. ♀.

Pimpla epeirae Bignell, 1893. Ent. Monthly Mag. 29: 37. ♂, ♀.

Pimpla rufovariegata (!) Dalla Torre, 1901. Cat. Hym., v. 3, p. 448. Lapsus for *rufovariata* Cresson.

Pimpla hibernica Morley, 1908. Ichn. Britannica, v. 3, p. 60. ♂, ♀.

Pimpla variabilis var. *ruficoxa* Kokujev, 1913. Russ. Ent. Obozr. (Rev. Russe d'Ent.) 13: 167. ♀.

Polysphincta forsiusi Hellen, 1915. Soc. pro Fauna et Flora Fenn., Acta 40: 45. ♂, ♀.

Tromatobia sapporensis Uchida, 1928. Hokkaido Imp. Univ., Faculty Agr., Jour. 25: 54. ♂, ♀.

zonata (Davis). Mass. s. to Fla., w. to Ohio, Ill., and Tex. Host: *Epeira undata* (Oliv.).

Clistopyga zonata Davis, 1895. Ent. News 6: 198. ♀.

Biology: Hubbell, 1932. Ent. Soc. Amer. Ann. 35: 504.

Genus ZAGLYPTUS Foerster

Zaglyptus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 166.

Type-species: *Polysphincta varipes* Gravenhorst. By subsequent monotypy from inclusion by Woldstedt, 1877.

Members of this genus parasitize spider egg cocoons and adults, sometimes simultaneously.

Biology: Nielsen, 1935. Ent. Meddel. 19: 206-215.

arizonicus Townes. Ariz.

Zaglyptus arizonicus Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 192. ♀.

pictilis Townes. Ga., Ala., Fla.; Cuba?

Zaglyptus pictilis Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 194. ♂, ♀.

varipes incompletus (Cresson). N. S. s. to Fla., w. to Alaska and Calif. *Z. varipes varipes* (Gravenhorst) occurs in Europe.

Pimpla incompleta Cresson, 1870. Amer. Ent. Soc., Trans. 3: 147. ♀.

Pimpla animosa Cresson, 1872. Amer. Ent. Soc., Trans. 4: 165. ♀.

Polysphincta Rubricapensis Provancher, 1873. Nat. Canad. 5: 470. ♀.

Cylloceria Lemoinei Provancher, 1873. Nat. Canad. 5: 471. ♂.

Polysphincta pimploides Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 145. ♀.

Polysphincta rufigaster Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 447. ♀.

Polysphincta spinosa Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 368. ♀.

Genus CLISTOPYGA Gravenhorst

Clistopyga Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 132.

Type-species: *Ichneumon incitator* Fabricius. Desig. by Westwood, 1840.

Ichneumonoglypta Blanchard, 1941. Soc. Ent. Argentina, Rev. 11: 9.

Type-species: *Ichneumonoglypta lopez-richinii* Blanchard. Monotypic and orig. desig.

Hymenomacropyga Uchida, 1941. Insecta Matsumurana 15 (3): 116.

Type-species: *Hymenomacropyga latifrontalis* Uchida. Monotypic and orig. desig.

The systematic position of *Clistopyga* within the Pimplinae has been unsettled. Meager evidence seems to indicate that *Clistopyga* spp. are parasitic upon egg sacs of species of spiders which place their egg sacs in crevices. Townes (1960) seems to have given special emphasis to this fact in removing *Clistopyga* from the Polysphinctini and placing it, along with *Tromatobia* and *Zaglyptus*, marginally within the Pimplini.

Biology: Nielsen, 1929. Ent. Meddel. 16: 366-368.

alutaria Townes. Ont., Del., N. C., Fla., Wis.

Clistopyga alutaria Townes, 1960. In Townes and Townes, U. S. Natl. Mus., Bul. 216 (pt. 2): 200. ♂, ♀.

atrata Cushman. Ariz., Oreg., Calif.

Clistopyga atrata Cushman, 1921. U. S. Natl. Mus., Proc. 60 (4): 14. ♂, ♀.

canadensis Provancher. N. S. s. to Pa., w. to Alta. and Colo.; Europe.

Polysphincta acuta Provancher, 1880. Nat. Canad. 12: 44. ♀.

Clistopyga Canadensis Provancher, 1880. Nat. Canad. 12: 46. ♀.

Clistopyga sauberi Brauns, 1898. Ver. Freunde Naturgesch. Mecklenburg, Arch. 51: 70. ♀.

maculifrons Cushman. Mass. s. to N. C., w. to Minn. and Tex.

Clistopyga maculifrons Cushman, 1921. U. S. Natl. Mus., Proc. 60 (4): 12. ♀.

manni Cushman. N. Mex., B. C., Calif. Host: *Agelenopsis* sp.; salticid spider.

Clistopyga manni Cushman, 1921. U. S. Natl. Mus., Proc. 60 (4): 12. ♀.

nigrifrons Cushman. B. C., Calif. Host: Spider eggs. Notes in the U. S. Natl. Mus. indicate that Cushman's type-specimens were definitely reared from the egg sac of a spider, although the specimens are labeled as "on spider nest."

Clistopyga nigrifrons Cushman, 1921. U. S. Natl. Mus., Proc. 60 (4): 11. ♀.

recurva (Say). N. J. s. to Fla., w. to Mo. and Tex.

Anomalon recurvus Say, 1836. Boston Jour. Nat. Hist. 1: 243. ♂, ♀.

Clistopyga annulipes Cresson, 1870. Amer. Ent. Soc., Trans. 3: 150. ♀.

Clistopyga pulchripicta Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 448. ♀.

Genus ALOPHOSTERNUM Cushman

Alophosternum Cushman, 1933. U. S. Natl. Mus., Proc. 82: 7.

Type-species: *Alophosternum foliicola* Cushman. Monotypic and orig. desig.

foliicola Cushman. Maine, Mass., Calif. Host: *Xenochalepus dorsalis* (Thun.), *Cameraria aceriella*? Clem., *C. corylisella* (Chamb.), *Paraclemensia acerifoliella* (Fitch).

Alophosternum foliicola Cushman, 1933. U. S. Natl. Mus., Proc. 82: 8. ♂, ♀.

TRIBE POLYSPHINCTINI

Members of this tribe are parasitic upon spiders. The larvae feed externally and solitarily, extracting the "juices" of an individual spider which remains active until the polysphinctine larva matures.

Biology: Nielsen, 1928-1937. Ent. Meddel. 14: 137-205 (1923); 16: 152-155 (1928), 366-368 (1929); 19: 192-215 (1935); 20: 25-28 (1937).

Genus DREISBACHIA Townes

Laufeia Tosquinet, 1903. Soc. Ent. de Belg., Mem. 10: 381. Preocc. by Simon, 1889.

Type-species: *Laufeia mira* Tosquinet. Monotypic.

Dreisbachia Townes, 1962. Ent. Soc. Wash., Proc. 64 (1): 38. N. name for *Laufeia* Tosquinet.

- navajo** (Townes). Ariz.; Honduras. Ecology: Found along streams at an elevation of 5000 ft. in Arizona; a spider of the genus *Pisaurina* was common along these streams.
Laufeia navajo Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 223. ♂, ♀.
- slossonae** (Davis). N. B. s. to N. C., w. to Alaska and Calif.
Polysphincta slossonae Davis, 1895. In Slosson, Ent. News 6: 317. Nomen nudum.
Polysphincta slossonae Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 368. ♀.

Genus SCHIZOPYGA Gravenhorst

- Schizopyga* Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 125.
 Type-species: *Schizopyga podagrica* Gravenhorst. Desig. by Westwood, 1840.
 Several recent publications erroneously state that this genus was described monotypically.
- frigida** Cresson. Maine s. to N. C., w. to B. C. and Calif.; Europe.
Schizopyga frigida Cresson, 1870. Amer. Ent. Soc., Trans. 3: 159. ♀.
Schizopyga atra Kriechbaumer, 1887. Ent. Nachr. 14: 87. ♂, ♀.
Polysphincta pontiaci Viereck, 1917. Conn. State Geol. and Nat. Hist. Survey Bul. 22: 317. ♂.
- pulchra** Walley. Mass., Ont., N. Y., N. J., N. C., Mich., Minn., B. C. Ecology: Occurs in marshy places. This species appears to be closely related to the European *Schizopyga circulator* (Panzer). Future study may show that *pulchra* is only a subspecies of *circulator*.
Schizopyga pulchra Walley, 1936. Canad. Ent. 68: 20. ♀.

Genus ZABRACHYPUS Cushman

- Zabrachypus* Cushman, 1920. U. S. Natl. Mus., Proc. 58: 37.
 Type-species: *Zabrachypus primus* Cushman. Monotypic and orig. desig.
- primus** Cushman Md., Va., N. C., Ohio, N. Dak., Alta., B. C., Mont., Ariz.
Zabrachypus primus Cushman, 1920. U. S. Natl. Mus., Proc. 58: 37. ♀.

Genus ACRODACTYLA Haliday

- Barypus* Haliday, 1837. In Curtis, Guide Arrangement Brit. Ins., ed. 2, p. 94. Nomen nudum.
- Acrodactyla* Haliday, 1839 (1838). Ann. Nat. Hist. 2: 117.
 Type-species: *Pimpla (Acrodactyla) degener* Haliday. Desig. by Westwood, 1840.
- Symphylus* Foerster, 1871. Naturh. Ver. Rheinlande, Verh. 28: 105. Preocc. by Dallas, 1851.
 Type-species: *Symphylus hadrodactylus* Foerster. Orig. desig.
- Polemophthorus* Schulz, 1911. Zool. Ann. (Wuerzburg). 4: 22. N. name for *Symphylus* Foerster.
- degener** (Haliday). Maine s. to N. C., w. to Alaska and Calif.; Europe. Host: *Lepthyphantes obscurus* (Blackwall), *L. zebrinus* (Menge), *Microneta viaria* (Blackwall), *Pityohyphantes phrygianus* (C. L. K.). These hosts were recorded in Europe.
Pimpla (Acrodactyla) degener Haliday, 1839 (1838). Ann. Nat. Hist. 2: 117. ♂, ♀.
Acrodactyla degenera Schulz, 1906. Spolia Hym., p. 103. Emend.
- Taxonomy: Sedivy, 1972. Acta Ent. Mus. Natl. Pragae 38: 73-79.
- Biology: Morley, 1913. Ichn. Britannica, v. 3, p. 133-134. — Nielson, 1923. Ent. Meddel. 14: 163-170 (here misdet. as "*Polysphincta pallipes*").
- jubata** Townes. Colo., Yukon, Wash.
Acrodactyla jubata Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 231. ♀.
- ocellata** Townes. Que., Maine, N. H., Conn., N. Y., Md., N. C., Mich. Host: *Pityohyphantes phrygianus* (C. L. K.).
Acrodactyla ocellata Townes, 1960. In Townes and Townes, U. S. Natl. Mus., Bul. 216 (pt. 2): 232. ♂, ♀.

Genus COLPOMERIA Holmgren

Colpomeria Holmgren, 1859. Svenska Vetensk.-Akad., Ofvers af ... Forhandl. 16: 126.

Type-species: *Colpomeria laevigata* Holmgren. Monotypic. Townes has most recently been treating *Colpomeria* as a synonym of *Acrodactyla*, apparently because of the structural intermediacies of one Formosan species, *C. orientalis* (Cushman). Except in *C. orientalis*, females of this genus have a prominent tooth on the front femur and a weaker one (sometimes vestigial) on the middle femur. The femoral teeth seem significant enough to warrant recognition of *Colpomeria* as a distinct genus; it also has secondary distinguishing features found only in a few species of *Acrodactyla*.

quadrisculpta (Gravenhorst). N. S. s. to Ga., w. to Alaska and Calif.; Eurasia. Host:

Tetragnatha laboriosa Hentz, *T. obtusa* C. L. K. In North America *quadrisculpta* is known to have been reared only from *T. laboriosa*.

Ichneumon quadrisculptus Gravenhorst, 1820. R. Accad. delle Sci. Torino, Mem. 24: 378. ♂.

Colpomeria laevigata Holmgren, 1859. Svenska Vetensk.-Akad., Ofvers. af ... Forhandl. 16: 127. ♂, ♀.

Glypta mellithorax Riley, 1891. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 463. Nomen nudum.

Zaglyptus kincaidii Ashmead, 1894. U. S. Dept. Agr., Insect Life 6: 260. ♂, ♀.

Panteles mellithorax Ashmead, 1900 (1899). In Smith, N. J. State Bd. Agr., Ann. Rpt. 27, Sup., p. 575. Nomen nudum.

Polysphincta albocoxalis Ashmead, 1902. In Slosson, Ent. News 13: 320. Nomen nudum.

Colpomeria mellithorax Cushman, 1920. U. S. Natl. Mus., Proc. 58: 19. ♀. The type locality is D. C.; on page 10 of the paper in which he described *mellithorax*, Cushman quoted notes which presumably pertain to the cocoon of the holotype of *mellithorax*, not to the female of *Toxophoroides scitulus* (Cresson).

Taxonomy: Aubert, 1969. Ichn. Ouest-Pal. et Leurs Hotes, pt. 1, p. 70.

Biology: Nielsen, 1937. Ent. Meddel. 20: 25-27. — Capener, 1938. Soc. Brit. Ent., Jour. 1: 209-210. — Howell, 1972. Entomophaga 17: 5-7.

Genus ERUGA Townes

Eruga Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 238.

Type-species: *Eruga lineata* Townes. Orig. desig.

atrata Townes. Oreg., Ariz.; Mexico.

Eruga atrata Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 238. ♂, ♀.

lineata Townes. Que. s. to N. C., w. to B. C. and Calif.

Eruga lineata Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 239. ♂, ♀.

rufa Townes. Md., S. C., Mo. Host: *Frontinella communis* Hentz.

Eruga rufa Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 240. ♂, ♀.

Genus PIOGASTER Perkins

Piogaster Perkins, 1958. Entomologist 91: 263.

Type-species: *Piogaster rugosa* Perkins. Orig. desig. The type-species is considered to be a synonym of *P. pilosator* (Aubert).

maculata Townes. Calif.

Piogaster maculata Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 241. ♀.

Genus OXYRRHEXIS Foerster

Oxyrrhexis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 166.

Type-species: *Cryptus carbonator* Gravenhorst. Monotypically included and design. by Schmiedeknecht, 1888.

carbonator texana (Cresson). Que. s. to Va., w. to B. C. and Calif. Host: *Steatoda borealis* (Hentz). *O. carbonator carbonator* occurs in Europe.

Polysphincta texana Cresson, 1870. Amer. Ent. Soc., Trans. 3: 149. ♀.

Polysphincta vicina Provancher, 1873. Nat. Canad. 5: 470. ♂.

Polysphincta bicarinata Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 368. ♂. Preocc. by Riley, 1871.

Taxonomy: Cushman, 1920. U. S. Natl. Mus., Proc. 58: 22.

Genus POLYSPHINCTA Gravenhorst

Polysphincta Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 112.

Type-species: *Polysphincta tuberosa* Gravenhorst. Design. by Westwood, 1840.

Ephialtomorpha Ashmead, 1906. In Slosson, Ent. News 17: 324. Nomen nudum.

Revision: Cushman, 1920. U. S. Natl. Mus., Proc. 58: 20-28.

albipes Cresson. Southern N. Y. s. to Fla., w. to Kans.

Polysphincta albipes Cresson, 1880. In Comstock, U. S. Dept. Agr., Ann. Rpt. for 1879, p. 208. ♂. The type specimen of *albipes* is lost, and the species had been of somewhat uncertain identity since being originally described from Florida. A female from Florida in the U. S. Natl. Mus. collection agrees with the original description except in having the head ferruginous instead of black. A paratype of *eboripes* Townes from Kansas approaches the Florida specimen in coloration and agrees very well structurally. I doubt that *eboripes* deserves subspecific distinction, and, therefore, it is synonymized below.

Polysphincta eboripes Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 254. ♂, ♀. N. syn.

burgessii Cresson. N. S. s. to Md., w. to B. C., Oreg., and Colo.

Polysphincta burgessii Cresson, 1870. Amer. Ent. Soc., Trans. 3: 149. ♂.

Polysphincta rufopectus Provancher, 1875. Nat. Canad. 7: 140. ♀.

Polysphincta (Polysphincta) venatrix DeGant, 1933. U. S. Natl. Mus., Proc. 82: 4. ♀.

koebelei Howard. Wash., Calif. Host: *Epeira* sp.

Polysphincta (Zaglyptus) koebelei Howard, 1892. Ent. Soc. Wash., Proc. 2: 293. ♀.

limata Cresson. P. E. I. s. to N. C., w. to B. C., Oreg., and Colo.

Polysphincta limata Cresson, 1870. Amer. Ent. Soc., Trans. 3: 150. ♀.

tuberosa bruneti Provancher. Que. s. to N. Y., w. to Alaska and Calif. *P. tuberosa tuberosa* occurs in Europe and northern Asia.

Polysphincta Bruneti Provancher, 1873. Nat. Canad. 5: 471. ♀. Barron (1975) rejected the lectotype selected by Gahan and Rohwer (1918) and gave data for the specimen he regarded as the holotype.

Polysphincta brunetii Dalla Torre, 1901. Cat. Hym., v. 3, p. 401. Emend.

Ephialtomorpha slossonae Ashmead, 1906. In Slosson, Ent. News 17: 324. Nomen nudum.

Polysphincta (Polysphincta) elongata Cushman, 1920. U. S. Natl. Mus., Proc. 58: 25. ♀.

Taxonomy: Gahan and Rohwer, 1918. Canad. Ent. 50: 169. —Barron, 1975. Nat. Canad. 102: 437.

Genus ACROTAPHUS Townes

Acrotaphus Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 256.

Type-species: *Epimecis wiltii* Cresson. Orig. design.

wiltii (Cresson). Maine s. to Fla., w. to Man. and Tex. Host: *Neoscona arabesca* (Walck.).

Epimecis Wiltii Cresson, 1870. Amer. Ent. Soc., Trans. 3: 143. ♀.

Biology: Shannon, 1913. Ent. Soc. Wash., Proc. 15: 162. —Gordh, 1971. Kans. Ent. Soc., Jour. 44: 171-172.

Genus SINARACHNA Townes

Sinarachna Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 258.

Type-species: *Polysphincta pallipes* Holmgren. Orig. desig.

anomala (Holmgren). N. S. s. to Fla., w. to Alaska and Calif.; Mexico, Europe. Host: *Dictyna foliacea* (Hentz).

Polysphincta anomala Holmgren, 1860. Svenska Vetensk.-Akad. Handl. (ser. 4) 3: 34. ♀.

Polysphincta picticollis Thomson, 1888. Opusc. Ent. 12: 1254. ♂, ♀.

Polysphincta dictynae Howard, 1888. U. S. Dept. Agr., Insect Life 1: 107. ♂.

Polysphincta minuta Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 369. ♀.

Zatypota anomala meridionator Aubert, 1960. Soc. Linn. de Lyon, Bul. Mens. 29: 32. ♀. N. syn. Described from a single female from southern France.

Zatypota anomala meridionator Aubert, 1961 (1960). Vie et Milieu 11: 656. ♀. Second description of *anomala meridionator* as a new subspecies based on same unique specimen.

pallipes strigis (Howard). Maine s. to N. C., w. to Alaska and Calif. Host: *Epeira foliata* (Geoff.). *S. pallipes pallipes* occurs in Europe.

Polysphincta (Zatypota) strigis Howard, 1892. Ent. Soc. Wash., Proc. 2: 291. ♀.

Genus ZATYPOTA Foerster

Zatypota Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 166.

Type-species: *Ichneumon percontatorius* Mueller. Desig. by Viereck, 1914 from five species included by Schmiedeknecht, 1888.

Polysphinctopsis Habermehl, 1917. Ztschr. f. Wiss. Insektenbiol. 13: 167.

Type-species: *Polysphincta eximia* Schmiedeknecht. Monotypic. This type-species is considered to be a synonym of *Z. albicoxa* (Walker).

Lycorinopsis Haupt, 1954. Deut. Ent. Ztschr. (N. F.) 1 (1-11): 110.

Type-species: *Lycorinopsis rhombifer* Haupt. Orig. desig.

Revision: Cushman, 1920. U. S. Natl. Mus., Proc. 58: 29-36.

alborhombarta (Davis). Va., Fla., Ariz.; Mexico.

Clistopyga alborhombarta Davis, 1895. Ent. News 6: 198. ♀.

arizonica Townes. Ariz.

Zatypota arizonica Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 271. ♂.

bohemani (Holmgren). Mont., B. C.; Europe.

Polysphincta Bohemani Holmgren, 1860. Svenska Vetensk.-Akad. Handl. (ser. 4) 3: 30. ♀.

Polysphincta bohemani Dalla Torre, 1901. Cat. Hym., v. 3, p. 401. Emend.

cingulata Townes. N. S. s. to Ga., w. to Wis. and Colo.

Zatypota cingulata Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 270. ♂.

crassipes Townes. S. C.

Zatypota crassipes Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 278. ♀.

exilis Townes. Que., N. H.

Zatypota exilis Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 269. ♀.

favosa Townes. Calif.

Zatypota favosa Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 269. ♀.

luteipes Townes. Maine, Mass., Ont., Md., N. C.

Zatypota luteipes Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 277. ♂, ♀.

nigriceps (Walsh). N. S. s. to Fla., w. to B. C. and Calif.

Polysphincta nigriceps Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 144. ♂, ♀.

Polysphincta nigrita Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 144. ♂. Uncertain syn.

Clistopyga nigrocephala Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 369. ♂.

Polysphincta (Zatypota) braucheri Cushman, 1920. U. S. Natl. Mus., Proc. 58: 33. ♂, ♀.

Polysphincta (Zatypota) californiensis Cushman, 1920. U. S. Natl. Mus., Proc. 58: 34. ♀.

Polysphincta (Zatypota) crosbyi Cushman, 1920. U. S. Natl. Mus., Proc. 58: 35. ♂, ♀.

parva (Cresson). Que. s. to N. C., w. to Wis.

Glypta parva Cresson, 1870. Amer. Ent. Soc., Trans. 3: 155. ♀.

patellata Townes. B. C. s. to Calif.

Zatypota patellata Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 268. ♂, ♀.

percontatoria (Mueller). Que. and Ont. s. to N. Y. and Ohio, w. to Alaska and Calif.; Europe.

Host: *Araneus cucurbitinus* Clerck, *Meta segmentata* Clerck, *Theridium denticulatum* Walck., *T. varians* Hahn. These hosts are recorded from Europe.

Ichneumon percontatorius Mueller, 1776. Zool. Danicae Prodrum, p. 154. ♀. The neotype designated by Aubert (1969) violates every provision in the Code regarding neotype selection and is therefore invalid. Aubert (1972) contended that usage of the name *percontatoria* by Townes (1960) and Oehlke (1967) violates the principle of first revisor. However, Townes (1960) stated that he applied the name according to the interpretation of Gravenhorst (1829), and certainly there is no logical basis for regarding Schmiedeknecht (1907) as first revisor as did Aubert (1972).

Polysphincta gracilis Holmgren, 1860. Svenska Vetensk.-Akad. Handl. (ser. 4) 3: 32. ♂, ♀.

Polysphincta scutellaris Holmgren, 1860. Svenska Vetensk.-Akad. Handl. (ser. 4) 3: 33. ♂.

Polysphincta pulchrior Thomson, 1877. Opusc. Ent. 8: 757. ♂. The female lectotype selected by Aubert is invalid, and therefore this synonymy remains uncertain.

Polysphincta theridii Howard, 1892. Ent. Soc. Wash., Proc. 2: 292. ♂.

Polysphincta granulosa Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 369. ♀.

Lycorinopsis decorata Haupt, 1954. Deut. Ent. Ztschr. (N. F.) 1: 110. ♀.

Lycorinopsis rhombifer Haupt, 1954. Deut. Ent. Ztschr. (N. F.) 1: 110. ♀.

Taxonomy: Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 120-122. —Schmiedeknecht, 1907.

Opusc. Ichn., v. 3, p. 1172. —Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul.

216 (pt. 2): 276. —Aubert, 1969. Ichn. Ouest-Pal. et leurs Hotes, pt. 1, p. 77. —Aubert,

1972. Ent. Scand. 3: 10.

Biology: Nielsen, 1923. Ent. Meddel. 14: 170-172.

walleyi Townes. Que., Maine, Mass., Ont., Mich.

Zatypota walleyi Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 272. ♂, ♀.

TRIBE ECHTHROMORPHINI

In addition to the three nearly worldwide genera which occur in North America, this tribe includes five others, the largest and best known of these being *Xanthopimpla*, of the Old- and New-World tropics, and *Echthromorpha*, which is chiefly Indo-Australian. Species of Echthromorphini are usually internal parasites of pupae of Lepidoptera, but species of *Itopectis* and, to a lesser extent, *Coccygomimus* sometimes parasitize Symphyta or Ichneumonoidea which spin cocoons in leaf litter or exposed situations.

Revision: Cushman, 1920. U. S. Natl. Mus., Proc. 58: 327-362 (Nearctic spp.). —Townes, 1940. Ent. Soc. Amer., Ann. 33: 283-323 (eastern Nearctic spp.). —Perkins, 1941. Roy. Ent. Soc., London, Trans. 91: 637-659 (British spp.).

Biology: Townes, 1939. Brooklyn Ent. Soc., Bul. 34: 29-30 (protective odors).

Morphology: Townes, 1940. Ent. Soc. Amer., Ann. 33: 285-287. (tarsal claws). —Obertel, 1960. Brno Moravske Mus. Casopis, Vedy Prirodni 45: 195-202 (male genitalia and postgenital sclerites).

Genus ITOPECTIS Foerster

Itopectis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 164.

Type-species: *Ichneumon scanicus* Villers. Desig. by Viereck, 1914 from two species included by Woldstedt, 1877.

Nesopimpla Ashmead, 1906. U. S. Natl. Mus., Proc. 30: 180.

Type-species: *Nesopimpla naranyae* Ashmead. Monotypic.

Exeristoides Uchida, 1928. Hokkaido Imp. Univ., Faculty Agr., Jour. 25: 51.

Type-species: *Pimpla spectabilis* Matsumura. Monotypic and orig. design. The type-species is considered to be a subspecies of *I. alternans* (Gravenhorst).

Revision: Porter, 1970. Acta Zool. Lilloana 26 (6): 65-103 (S. Amer. spp.).

behrensii (Cresson). Calif. Host: *Phryganidia californica* Pack. *I. behrensii* is not known to occur north of Marin Co., Calif.

Pimpla behrensii Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 377. ♂, ♀.

conquisitor (Say). N. S. s. to Fla., w. to B. C. and Ariz. Host: *Hyaloscotes pithopoera* (Dyar), *Oiketicus abbotii* Grt., *Thyridopteryx ephemeriformis* (Haw.), *Coleophora frischella* (L.), *C. pruniella* Clem., *Epermenia cicutella* Kft., *Anacamptis inocuella* (Zell.), *Dichomeris marginella* (F.), *Choristoneura conflictana* (Wlk.), *C. fumiferana* (Clem.), *Choristoneura lambertiana* (Bsk.), *C. pinus* Free., *Aphelia alleniana* (Fern.), *Archips argyrospilus* (Wlr.), *A. cerasivoranus* (Fitch), *A. georgianus* (Wlk.), *A. rileyanus* (Grt.), *Argyrotaenia cockerellana* (Kft.), *A. pinatubana* (Kft.), *A. velutinana* (Wlk.), *Acleris hastiana* (L.), *A. minuta* (Rob.), *Cnephasia virgaureana* Treit., *Sparganothis pettitana* (Rob.), *S. flavibasana* (Fern.), *Xenotemna pallorana* Rob., *Ancylics comptana* (Froel.), *A. c. fragariae* (W. and R.), *Evora hemidesma* (Zell.), *Paralobesia viteana* (Clem.), *Rhyacionia buoliana* (D. and S.), *R. frustrana* (Com.), *R. frustrana bushnellii* (Bsk.), *Spilonota ocellana* (D. and S.), *Pterophorus periscelidactylus* Fitch, *Acrobasis betulella* Hulst., *A. caryovoriella* Rag., *A. juglandis* (LeB.), *A. kearfotella* Dyar, *A. rubrifasciella* Pack., *Dioryctria reniculella* (Grt.), *Diaphania hyalinata* (L.), *Ostrinia nubilalis* (Hbn.), *Cingilia catenaria* (Drury), *Lambdina fervidaria athasaria* (Grt.), *L. fiscellaria fiscellaria* (Gn.), *Ennomos subsignarius* (Hbn.), *Nematocampa filamentaria* Gn., *Rheumaptera hastata* (L.), *Dryocampa rubicunda rubicunda* (F.), *Malacosoma americanum* (F.), *M. dissidia* Hbn., *M. californicum fragile* (Stretch), *Dasychira plagiata* (Wlk.), *Lymantria dispar* (L.), *Orgyia antiqua* (L.), *O. leucostigma* (J. E. S.), *Alabama argillacea* (Hbn.), *Anomis erosa* Hbn., *Ezyra semirocea* (Gn.), *Simyra henrici* (Grt.), *Trichoplusia ni* (Hbn.), *Lascoria ambigua* (Wlk.), *Hyphantria cunea* (Drury), *Hemileuca* sp., *Urbanus proteus* (L.), *Thymelicus lineola* (Ochs.), *Pieris rapae* (L.), *Graphium marcellus* (Cramer), *Diprion similis* (Htg.), *Neodiprion abietis* (Harr.), *Rogas stigmator* (Say), *R. terminalis* (Cr.), *Dusona ellopiae* (Wly.), *Gambrus extrematus* (Cr.), *Hyposoter fugitivus* (Say), *Phobocampe clisiocampae* (Weed), *P. pallipes* (Prov.). *Ichneumon concitor* (!) Harris, 1833. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass. p. 587. Nomen nudum.

Cryptus conquistor Say, 1836. Boston Jour. Nat. Hist. 1: 232. ♀.

Cryptus pleurivinctus Say, 1836. Boston Jour. Nat. Hist. 1: 235. ♂, ♀.

Pimpla pictipes Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 135. ♀. Preocc. by Gravenhorst, 1829.

Pimpla walshii Dalla Torre, 1901. Cat. Hym., v. 3, p. 454. N. name for *P. pictipes* Walsh.

Pimpla conquiritrix Schulz, 1906. Spolia Hym., p. 104. Emend.

Ephialtes (Itopectis) temnopleuris Cushman, 1920. U. S. Natl. Mus., Proc. 58: 350. ♀.

Biology: Gorham, 1847. DeBow's Rev. 3: 539-541. — Comstock, 1879. Rpt. on Cotton Insects, p. 198-200. — Riley, 1886. U. S. Dept. Agr., Ent. Conn. Rpt. 4: 111-113. — Weed and Fiske, 1900. U. S. Dept. Agr., Div. Ent. Bul. 26: 33-34. — Fiske, 1903. N. H. Agr. Expt. Sta., Tech. Bul. 6: 184-230. — Johnston, 1913. Jour. Econ. Ent. 6: 144-147. — Baird, 1918. Agr. Gaz. Canada 5: 770-771. — Criddle, 1924. Ent. Soc. Ontario, Ann. Rpt. 54: 17-18. — Schedl, 1931. Ztschr. f. Angew. Ent. 18: 258-260. — Haden, 1935. Del. Agr. Expt. Sta., Bul. 194: 20-35. — Townes, 1940. Ent. Soc. Amer., Ann. 33: 318-320. — Leius, 1960. Canad. Ent. 92: 369-376. — Leius, 1961. Canad. Ent. 93: 771-780. — Arthur, 1962-1972. Canad. Ent. 94: 337-347 (1962); 95: 1078-1091 (1963); 97: 1000-1001 (1965); 98: 213-223 (1966); 104: 1251-1258 (1972).

Morphology: Peck, 1937. Canad. Jour. Res., Sect. D (Zool. Sci.) 15: 245, 452. — Pratt, 1939. Ent. Soc. Amer., Ann. 32: 731.

curticauda brevacus Townes. Que., Maine, Ont., Vt., N. Y., Mich., Mont. *I. curticauda curticauda* (Kriechbaumer) occurs in Europe.

Itopectis brevacus Townes, 1940. Ent. Soc. Amer., Ann. 33: 315. ♀.

evetriae Viereck. N. B. s. to n. Ga., w. to Alaska and Calif. Host: *Barbara* sp., *B. colfaxiana siskiyouna* (Kft.), *B. colfaxiana taxifoliella* (Bsk.), *B. mappana* Free., *Zeiraphera* sp.

- on *Picea glauca*, *Choristoneura fumiferana* (Clem.), *Dioryctria cambicola* (Dyar), *D. zimmermanni* (Grt.), *Rhyacionia buoliana* (D. and S.).
- Itopectis evetriae* Viereck, 1913. U. S. Natl. Mus., Proc. 44: 565. ♂.
- Itopectis plesia* Rohwer, 1914. Ent. Soc. Wash., Proc. 15: 182. ♀.
- fustiger** Townes. Que., N. Y., Pa., Mich., Ohio, Minn., N. Dak., Calif. This species is related to the European *I. clavicornis* Thomson, and for a number of years was identified as *clavicornis*.
- Itopectis fustiger* Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 298. ♂, ♀.
- maculator** (Fabricius). Eurasia, n. Africa. Ecology: Sometimes hyperparasitic. Introductions were made in Ont. from 1948-1956 with the target species being the native *Choristoneura fumiferana* (Clem.). *Cnephasia longana* was the target species for introductions in Oreg. in 1949?, 1952, and 1954. Recoveries were made in Oreg. in 1950 and 1955, but *maculator* is not known to be established. Host: *Cnephasia longana* (Haw.). Numerous other European hosts are known.
- Ichneumon maculator* Fabricius, 1775. Systema Ent., p. 337. ♀.
- Ichneumon Plaesseeus* Geoffroy, 1785. In Fourcroy, Ent. Parisiensis. v. 1, p. 417. ♀.
- Ichneumon arlequinatus* Geoffroy, 1785. In Fourcroy, Ent. Parisiensis. v. 1, p. 427. Sex not indicated.
- Ichneumon scanicus* Villers, 1789. Caroli Linnaei Ent., Faun. Suec. Descr. Aucta, v. 3, p. 190. ♂ ?
- Ichneumon lateratorius* Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 279; 9: 362. ♂.
- Pimpla vineta* Snellen van Vollenhoven, 1873. Tijdschr. v. Ent. 16: 212. ♀.
- Pimpla cruentata* Rudow, 1883. Ent. Nachr. 9: 235. ♂, ♀.
- Pimpla castaneiventris* Kriechbaumer, 1894. Berlin. Ent. Ztschr. 39: 51. ♀.
- Pimpla serpuntata* Perez, 1895. Soc. Ent. de France, Ann. 64: 200. ♀.
- Pimpla maculatrix* Schulz, 1906. Spolia Hym., p. 104. Emend.
- Itopectis rufiventris* Hellen, 1949. Finska Vetensk.-Soc., Comm. Biol. 8: 11. ♂, ♀.
- Biology: Goidanich, 1931. R. 1st. Super. Agr., Lab. di Ent., Bol. 4: 151-153. —Hardy, 1938. Bul. Ent. Res. 29: 356.
- quadricingulata** (Provancher). Newfoundland s. to R. I., w. to Alaska and Calif.; Greenland. Host: *Hyaloscotes fragmentella* (Hy. Edw.), *Gracilaria* sp., *Eucercia castella* Wlsm., *Dioryctria reniculella* (Grt.), *Anthophila pariana* (Clem.), *Carcina quercana* (F.), *Depressaria* sp., *Archips argyrospilus* (Wlk.), *A. rosanus* (L.), *Choristoneura fumiferana* (Clem.), *C. occidentalis* Free., *Cnephasia longana* (Haw.), *Acleris* sp., *Acleris variana* (Fern.), *Laspeyresia pomonella* (L.), *Rhyacionia buoliana* (D. and S.), *R. busckana* Hein., *Spilonota ocellana* (D. and S.), *Taniva albolineana* (Kft.), *Platyptilia* sp., *Lamdina fiscellaria lugubrosa* (Hulst), *Nepytia phantasmaria* (Stkr.), *Malacosoma* sp., *M. dissitria* Hbn., *Orygia pseudotsugata* McD., *Neodiprion* sp., *N. tsugae* Midd. *I. quadricingulata* is closely related to *I. alternans* (Gravenhorst) of Eurasia and future study is likely to show that *quadricingulata* should be treated either as a synonym or as a subspecies of *alternans*.
- Pimpla 4-cingulatus* Provancher, 1880. Nat. Canad. 12: 38. ♀.
- Pimpla (Itopectis) Kolthoffi* Aurivillius, 1890. Svenska Vetensk.-Akad., Bihang til Handl. (ser. 4) 15: 29. ♂, ♀.
- Pimpla kolthoffii* Dalla Torre, 1901. Cat. Hym., v. 3, p. 438. Emend.
- Itopectis obesus* Cushman, 1917. U. S. Natl. Mus., Proc. 53: 467. ♂, ♀.
- Ephialtes (Itopectis) latus* Cushman, 1920. U. S. Natl. Mus., Proc. 58: 345. ♀.
- Ephialtes (Itopectis) leavitti* Cushman, 1920. U. S. Natl. Mus., Proc. 58: 345. ♀.
- Ephialtes (Itopectis) pacificus* Cushman, 1920. U. S. Natl. Mus., Proc. 58: 345. ♀. Preocc. by Harrington, 1894.
- Ephialtes (Itopectis) montana* Cushman, 1920. U. S. Natl. Mus., Proc. 58: 346. ♀.
- Ephialtes cacoeciae* Viereck, 1924. Canad. Ent. 56: 64. ♂, ♀.
- Ephialtes (Itopectis) esuchus* Cushman, 1924. Ent. Soc. Wash., Proc. 26: 221. N. name for *E. pacificus* Cushman.

- Biology: Ryan, 1971. Ent. Soc. Amer., Ann. 64: 205-208. — Ryan and Medley, 1972. Ent. Soc. Amer., Ann. 65: 172-177.
- vesca* Townes. N. S., P. E. I., N. B., Maine, Colo., N. Mex., Ariz., Alaska, B. C., Calif. Host: *Acleris variana* (Fern.), *Coleophora laricella* (Hbn.), *Coleotechnites milleri* (Bsk.).
- Itopectis vesca* Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 297. ♂, ♀.
- viduata* (Gravenhorst). N. W. T. s. to N. Mex., w. to B. C. and Calif.; Eurasia. Host: *Ancyliis comptana* (Froel.), *Autographa californica* (Spey.), *Choristoneura rosaceana* (Harris), *Colias eurytheme* Bdv., *Malacosoma* sp., *M. dissitia* Hbn., *M. californicum fragile* (Stretch), *M. californicum pluviale* (Dyar), *Orygia pseudotsugata* McD., *Hemileuca oliviae* Ckll., *Nymphalis californica* (Bdv.).
- Pimpla viduata* Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 214. ♂.
- Pimpla atrocoxalis* Cresson, 1870. Amer. Ent. Soc., Trans. 3: 145. ♀.
- Pimpla ovalis* Thomson, 1877. Opusc. Ent. 8: 748. ♀.
- Pimpla meridionalis* Kriechbaumer, 1877. Ent. Nachr. 8: 120. ♀.

Genus EPHIALTES Schrank

- Ephialtes* Schrank, 1802. Fauna Boica, v. 2, p. 316. Some authors regard *Ephialtes* Schrank as an unavailable name by virtue of Opinion 159 of the Internatl. Comm. of Zool. Nomenclature, but I do not regard Opinion 159 as valid for reasons discussed in the introduction to the family.
- Type-species: *Ichneumon compuncator* Linnaeus. Monotypic.
- Apechthis* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 164.
- Type-species: *Ichneumon rufatus* Gmelin. Desig. by Ashmead, 1900 (as "*Pimpla rubata* [!] Gravenhorst") from two species included by Woldstedt, 1877.
- Apechthis* Thomson, 1889. Opusc. Ent. 12: 1410. Emend.
- Taiwatheronia* Sonan, 1936. Nat. Hist. Soc. Formosa, Trans. 26: 256.
- Type-species: *Taiwatheronia mahasenae* Sonan. Monotypic and orig. desig. The type-species is regarded as a synonym of *Ephialtes taiwanus* (Uchida).
- Paraepchthis* Blanchard, 1936. Soc. Ent. Argentina, An. 122: 404.
- Type-species: *Paraepchthis bazani* Blanchard. Monotypic and orig. desig.
- Taxonomy: Townes, 1957. Ent. Soc. Wash., Proc. 59: 118-119.
- annulicornis annulicornis* (Cresson). Que. s. to N. C., w. to Alta. and Tex. Host: *Choristoneura fumiferana* (Clem.), *C. rosaceana* (Harris). Contrary to the description and key in the revision of the Pimplinae by Townes and Townes (1960), a significant proportion of the males of this subspecies have white marks on the mesoscutum.
- Pimpla annulicornis* Cresson, 1870. Amer. Ent. Soc., Trans. 3: 147. ♂, ♀.
- annulicornis componotus* (Davis), n. status. Idaho, N. Mex., B. C., Oreg., Calif. Host: *Orygia antiqua* (L.), *O. leucostigma* (J. E. S.), *O. pseudotsugata* McD., *Neophasia menapia* (F. and F.).
- Pimpla componotus* Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 367. ♂.
- Apechthis pacificus* Cushman, 1920. U. S. Natl. Mus., Proc. 58: 353. ♂, ♀. N. syn. Preocc. in *Ephialtes* by Harrington, 1894; Cushman, 1920. Townes (1960) treated *pacificus* as a species distinct from *componotus* on the basis of male color characteristics (he considered the female of *componotus* unknown) which do not even work for Cushman's type series of *pacificus*, which were from a single locality (Portland, Oreg.). Other specimens in the U. S. Natl. Mus. collection further indicate the need for placing *pacificus* as a synonym of *componotus* and the need for placing *componotus* as a subspecies of *annulicornis*.
- ontario* (Cresson). Newfoundland (Labrador) s. to N. Y., w. to Alaska and Calif. Host: *Choristoneura conflictana* (Wlk.), *C. fumiferana* (Clem.), *C. pinus* Free., *Lambdina fiscellaria* (Gn.), *Nepytia canosaria* (Wlk.).
- Pimpla Ontario* Cresson, 1870. Amer. Ent. Soc., Trans. 3: 146. ♂.
- Biology: Ryan, 1971. Ent. Soc. Amer., Ann. 64: 205-208. — Ryan and Medley, 1972. Ent. Soc. Amer., Ann. 65: 172-177.
- Morphology: Peck, 1937. Canad. Jour. Res., Sect. D (Zool. Sci.) 15: 248.

- picticornis* (Cresson). N. S. s. to N. C., w. to B. C. and Calif. Host: *Choristoneura conflictana* (Wlk.), *C. rosaceana* (Harris), *Sciaphila* sp., *Spilonota ocellana* (D. and S.).
Pimpla picticornis Cresson, 1870. Amer. Ent. Soc., Trans. 3: 146. ♂.
Apechthis ornatus Walley, 1929. Canad. Ent. 68: 190. ♂.
- quadridentatus* (Thomson). Europe; n. Asia. Introduced, but not established, in Ont. and Que. in 1948, 1949, and 1956 for control of the native *Choristoneura fumiferana* (Clem.).
Ichneumon resinator (!) Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Bul. 8: 275; 9: 349. Lapsus for and misidentification of *Ichneumon resinellae* Linnaeus, which is a braconid now placed in the genus *Macrocentrus*.
Pimpla quadridentata Thomson, 1877. Opusc. Ent. 8: 749. ♂, ♀.
- Taxonomy: Townes, 1965. Polskie Pismo Ent. 35: 411.
- rufatus* (Gmelin). Europe; n. Asia. Introduced, but not established, in Ont. in 1950 for control of the native *Choristoneura fumiferana* (Clem.).
Ichneumon rufatus Gmelin, 1790. In Linnaeus, Syst. Nat., Ed. 13, v. 1, p. 2684. ♀.
Pimpla flavonotata Holmgren, 1860. Svenska Vetensk.-Akad. Handl. (ser. 4) 3 (10): 19. ♂, ♀.
Pimpla rufithorax Strobl, 1901. Naturw. Ver. f. Steiermark, Mitt. 38: 11. ♀.

Genus COCCYGOMIMUS Saussure

Coccygomimus Saussure, 1890. In Grandidier, Hist. Madagascar, v. 20, Hym. 1, pl. 14, fig. 12.

- Type-species: *Coccygomimus madecassus* Saussure. Monotypic.
- Habropimpla* Cameron, 1900. Manchester Lit. and Phil. Soc., Mem. and Proc. 44: 96.
Type-species: *Habropimpla bilineata* Cameron. Monotypic.
- Lissotheronia* Cameron, 1905. Spolia Zeylanica 3: 139.
Type-species: *Lissotheronia flavipes* Cameron. Monotypic.
- Phytodiaetoides* Morley, 1913. Fauna Brit. India, ... Hym., v. 3, p. 221.
Type-species: *Phytodiaetoides megaera* Morley. Monotypic and orig. desig. The type-species is considered to be a synonym of *Coccygomimus flavipalpis* (Cameron).
- Pimplidea* Viereck, 1914. U. S. Natl. Mus., Proc. 83: 117.
Type-species: *Pimpla pedalis* Cresson. Monotypic and orig. desig.
- Coelopimpla* Brethes, 1916. Buenos Aires, Mus. Nac. de Hist. Nat., An. 27: 402.
Type-species: *Coelopimpla amadei* Brethes. Monotypic and orig. desig. The type-species is considered to be a synonym of *Coccygomimus sumichrasti* (Cresson).
- Liotheronia* Enderlein, 1919. Gesell. f. Naturf. Freunde z. Berlin, Sitzber. f. 1919, p. 147.
Type-species: *Liotheronia kriegeri* Enderlein. Monotypic and orig. desig. The type-species is considered to be a synonym of *Coccygomimus aztecus* (Cresson).
- Dihyoplax* Enderlein, 1919. Gesell. f. Naturf. Freunde z. Berlin, Sitzber. f. 1919, p. 148.
Type-species: *Dihyoplax flavipennis* Enderlein. Monotypic and orig. desig.
- Neogabunia* Brethes, 1927. Ent. Mitt. 16: 322.
Type-species: *Neogabunia paulistana* Brethes. Monotypic. The type-species is considered to be a synonym of *Coccygomimus tomyris* (Schroetky).
- Pimpla* subg. *Opodactyla* Seyrig, 1932. Acad. Malagache, Mem. 11: 60.
Type-species: *Pimpla (Opodactyla) waterloti* Seyrig. Monotypic and orig. desig.
- Pimpla* subg. *Oxympimpla* Noskiewicz and Chudoba, 1951. Polskie Pismo Ent. 21: 42, 56.
Type-species: *Ichneumon turionellae* Linnaeus. Monotypic.

The name *Pimpla* has frequently been applied to this genus. My reasons for not doing so here are given in the introductory discussion of the family.

Revision: Porter, 1970. Studia Ent. 13: 1-192. (S. Amer. spp.).

- aequalis* (Provancher). N. S. s. to Fla., w. to Minn. and Tex. Host: *Thyridopteryx ephemeraeformis* (Haw.), *Grapholitha molesta* (Bsk.), *Laspeyresia pomonella* (L.), *Paralobesia viteana* (Clem.), *Coleophora fuscadinella* Zell., *Acrobasis indiginella* (Zell.), *Dichomerus "marginella"* (F.), *Coryphista meadi* (Pack.), *Tolyte velleda* (Stoll.).
Pimpla aequalis Provancher, 1880. Nat. Canad. 12: 36. ♀.

- Meniscus Ashmeadii* Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 430. ♀.
Pimpla conquistator var. *rufuscula* Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 368. ♀.
- Biology:** Breakley, 1930. Ent. Soc. Amer., Ann. 23: 187.
- annulipes** (Brulle). N. S. s. to Fla., w. to Minn. and Tex. Host: *Podosesia syringae* (Harris), *Syanthodon pictipes* (G. and R.), *S. pyri* (Harris), *Grapholitha molesta* (Bsk.), *Laspeyresia nigricana* (Steph.), *L. pomonella* (L.), *Rhyacionia buoliana* (D. and S.), *Gretchena bolliana* (Sling.), *Acrobasis caryae* Grt., *A. indiginella* (Zell.), *Salebriaria tenebrosella* (Hulst).
- Pimpla annulipes* Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 102. ♀.
Pimpla inflata Townes, 1940. Ent. Soc. Amer., Ann. 33: 306. ♂, ♀.
- aquilonius** (Cresson). Newfoundland (insular) s. to N. C., w. to Alaska and Calif.; Eurasia.
 Host: *Coleophora fuscinedella* Zell., *Psilocorsis cryptolechiella* (Cham.), *Lambdina fiscellaria fiscellaria* (Gn.), *Spilonota ocellana* (D. and S.), *Rheumaptera hastata* (L.).
 Townes (1960) has recognized a number of subspecies which he separated very unsatisfactorily and which do not make sense zoogeographically; therefore, they are not recognized here.
- Pimpla aquilonia* Cresson, 1870. Amer. Ent. Soc., Trans. 3: 145. ♂.
Pimpla flavicoxis Thomson, 1877. Opusc. Ent. 8: 747. ♂.
Meniscus marginatus Provancher, 1883. Nat. Canad. 14: 15. ♀.
Bassus cylindricus Provancher, 1889. Addit. Corr. Faune Ent. Canada Hym., p. 111. ♂, ♀.
Itopectis ezareolata Ashmead, 1901. Psyche 9: 147. ♀.
Pimpla yakutatensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 200. ♂.
- contemplator** (Mueller). Europe. Introduced in 1964 in N. S. without becoming established.
 Host: *Operophtera brumata* (L.). Other European hosts are known, but *O. brumata* was the target host for the release in N. S.
Ichneumon contemplator Mueller, 1776. Zool. Danicae prodromus ..., p. 158. Sex not indicated.
Ichneumon geniculatus Geoffroy, 1785. In Fourcroy, Ent. Parisiensis, v. 2, p. 397. ♀ ?
Cryptus insignatorius Gravenhorst, 1807. Vergl. Uebers. Zool. Systeme, p. 264. ♀.
Pimpla bilineata Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 98. ♀. Syn.?
- dimidiatus** Townes. Tex.
Coccygominus dimidiatus Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 350. ♂.
- elloppiae** (Harrington). N. Mex., Ariz., B. C. s. to Calif. Host: *Lambdina somniaria* (Hulst), *Eucaterpa variaria* Grote.
Pimpla elloppiae Harrington, 1892. Canad. Ent. 24: 99. ♂, ♀.
- Taxonomy:** Townes, 1966. In Townes and Townes, Amer. Ent. Inst., Mem. 8: 28.
- hesperus** Townes. S. Dak.to N. Mex., w. to Alaska, Oreg. and Calif. Host: *Rhyacionia frustrana bushnelli* (Bsk.), *Anarsia lineatella* Zell., *Udea rubigalis* (Gn.), *Lambdina fiscellaria lugubrosa* (Hulst).
Coccygominus hesperus Townes, 1960. In Townes and Townes, U. S. Natl. Mus., Bul. 216 (pt. 2): 338. ♂, ♀.
- instigator** (Fabricius). Eurasia; n. Africa. Introduced in 1906, 1907, and 1909 in New England without becoming established. Host: *Lymantria dispar* (L.). Many other European hosts are known, but *L. dispar* was the target host for attempts to establish *instigator* in New England.
Ichneumon instigator Fabricius, 1793. Ent. System. v. 2, p. 164. ♀.
Pimpla processioneae Ratzeburg, 1849. Stettin. Ent. Ztg. 10: 133. ♂.
Pimpla intermedia Holmgren, 1860. Svenska Vetensk.-Akad. Handl. (ser. 4) 3 (10): 19. ♂, ♀.
Pimpla Aegyptica Schmiedeknecht, 1897. Illus. Wochenschr. f. Ent. 2: 633. ♂, ♀.
Pimpla instigatrix Schulz, 1906. Spolia Hym., p. 104. Emend.
Apechthis flavipes Matsumura, 1912. Thousand Ins. Jap., Sup. 4, p. 144. ♀.
- Taxonomy:** Masi, 1933. Soc. Ent. Ital., Bol. 65: 65.

- Biology: Howard and Fiske, 1911. U. S. Dept. Agr., Bur. Ent., Bul. 91: 237. —Schevy, 1912. *Messenger Ent.* 1: 4. —Picard, 1921. [Paris] *Acad. des Sci., Compt. Rend.* 172: 1617-1619. —Faure, 1926. *Contrib. Etud. ... Pieride du Chou et ses Pars. Hym.*, p. 77-86. —Lepiney, 1927. *Ann. des Epiphyt.* 13: 164. —Seyrig, 1932. *Soc. Ent. de France, Ann.* 101: 114. —Cals and Shaumar, 1965. *Ann. des Sci. Nat. Zool. et Biol. Anim.* 7: 768.
- marginellus** (Brulle). Southern Fla.; Cuba, Haiti, Jamaica, Puerto Rico.
- Pimpla marginella* Brulle, 1846. *In* Lepeletier, *Hist. Nat. Ins. Hym.*, v. 4, p. 107. ♀.
- maurus** (Cresson). Ohio, N. C., Ga., Fla., Tex. Host: *Hemerocampa leucostigma* (J. E. S.), *Orgyia* sp.
- Pimpla maura* Cresson, 1870. *Amer. Ent. Soc., Trans.* 3: 145. ♀.
- nudus** (Townes). N. S. s. to Va., w. to Minn. and Ind. Host: *Ostrinia nubilalis* (Hbn.), *Neodiprion* sp.
- Pimpla nuda* Townes, 1940. *Ent. Soc. Amer., Ann.* 33: 306. ♀.
- pedalis** (Cresson). Newfoundland (Labrador) s. to Va., w. to Alaska and Calif. Host: *Archips argyropilus* (Wlk.), *Argyrotaenia mariana* (Fern.), *sciaphila duplex* (Walsh), *Lambdina fiscellaria fiscellaria* (Gn.), *L. somnaria* (Hulst), *Protobernia porcelaria* (Gn.), *Malacosoma americanum* (F.), *M. californicum fragile* (Stretch), *M. disstria* Hbn., *Dasychira plagiata* (Wlk.), *Leucoma salicis* (L.), *Lymantria dispar* (L.), *Nygmia phaeorrhea* (Don.), *Orgyia antiqua badia* Hy. Edw., *O. leucostigma* (J. E. S.), *Heterocampa guttivitta* (Wlk.), *Acrionicta* sp., *A. americana* (Harr.), *Ctenucha virginica* (Charp.), *Leucania linita* Gn., *Pseudaletia unipuncta* (Haw.), *Halisidota caryae* (Harr.), *H. maculata* (Harr.), *Isia isabella* (J. E. S.), *Epargyreus clarus* (Cramer), *Neophasia menapia* (F. and F.), *Gilpinia hereyniae* (Htg.), *Neodiprion* sp.
- Pimpla pedalis* Cresson, 1865. *Ent. Soc. Phila., Proc.* 4: 268. ♂.
- Biology: Howard and Fiske, 1911. U. S. Dept. Agr., Bur. Ent., Bul. 91: 137-138, 144, 147-149, 237-239. —Schedl, 1931. *Ztschr. f. Agnew. Ent.* 18: 268-270. —Finlayson, 1960. *Canad. Ent.* 92: 925. —Campbell, 1963. *Canad. Ent.* 95: 337.
- puniceipes** (Cresson). Tex.; Mexico s. to Peru; Hawaii. Host: *Platynota* sp., *Pectinophora gossypiella* (Sdrs.). Neither of these hosts was recorded in N. Amer.
- Pimpla puniceipes* Cresson, 1874 (1873). *Acad. Nat. Sci. Phila., Proc.* 25: 398. ♀.
- Pimpla feralis* Cresson, 1874 (1873). *Acad. Nat. Sci. Phila., Proc.* 25: 399. ♂.
- Pimpla Hawaiiensis* Cameron, 1887. *Manchester Lit. and Phil. Soc., Mem. and Proc.* (3) 10: 239. ♂.
- Pimpla puniceipes* Dalla Torre, 1901. *Cat. Hym.*, v. 3, p. 446. Emend.
- sanguinipes erythropus** (Viereck). Idaho s. to N. Mex., w. to s. B. C. and Calif. Host: *Laspeyresia pomonella* (L.), *Tholera reversalis* (Gn.), *Zophodia convolutella* (Hbn.), *Coryphista meadi* (Pack.), *Eucaterpa variaria* Grt., *Procheorodea forficaria catenulata* Grt., *Malacosoma* sp., *M. californicum fragile* (Stretch), *M. incurvum incurvum* (Hy. Eds.), *Hemileuca* sp., *Diacrisia virginica* (F.), *Orgyia pseudotsugata* McD., *O. vetusta* (Bdv.).
- Pimpla (Pimpla) erythropus* Viereck, 1909. *Ent. News* 20: 291. ♀.
- Biology: Pack, 1930. *Utah Agr. Expt. Sta., Bul.* 216: 10-11.
- sanguinipes sanguinipes** (Cresson). Tex.; Mexico s. to Peru. Host: *Alabama argillacea* (Hbn.).
- Pimpla sanguinipes* Cresson, 1872. *Amer. Ent. Soc., Trans.* 4: 165. ♀.
- Ephialtes (Ephialtes) sanguinipes* (!) Cushman, 1920. *U. S. Natl. Mus., Proc.* 58: 335.
- silvicola** (Walley). B. C., Wash., Oreg.
- Pimpla silvicola* Walley, 1941. *Canad. Ent.* 73: 164. ♂, ♀.
- sodalis longigenalis** (Cushman). Colo., Calif. Ecology: Occurs in drier grass or sedge covered parts of high mountain meadows but is apparently not found in wet meadows.
- Ephialtes (Ephialtes) longigenalis* Cushman, 1920. *U. S. Natl. Mus., Proc.* 52: 332. ♀.
- sodalis sodalis** (Ruthe). Northern Man., N. W. T., Yukon, Alaska; Greenland; Iceland; Europe.
- Pimpla sodalis* Ruthe, 1859. *Stettin. Ent. Ztg.* 20: 371. ♂, ♀.
- Pimpla Nordenskiöldii* Holmgren, 1872. *Svenska. Vetensk.-Adad., Ofvers. af ... Forhandl.* 29 (6): 97. ♀.
- Pimpla longiceps* Thomson, 1877. *Opusc. Ent.* 8: 746. ♂, ♀.

stricklandi Townes. Que., Ont., n. Mich., Sask., Alta.

Coccygomimus stricklandi Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 340. ♂, ♀.

tenuicornis (Cresson). N. S. to N. Y., w. to e. B. C. and Colo. Host: *Semiothisa* sp., *Synanthedon tipuliformis* (Clerk).

Pimpla tenuicornis Cresson, 1865. Ent. Soc. Phila., Proc. 4: 267. ♀.

turionellae turionellae (Linnaeus). Eurasia; n. Africa. Introduced in 1950, 1955 in N. S.; 1952 in Que.; 1935-1937, 1950-1954, 1956, 1958 in Ont.; 1906-1909 in New England (probably Mass.), 1935-1938 in Conn., N. Y., N. J.; 1937 in Minn. and Ida.; establishment has apparently not occurred, although a few recoveries have been reported in Ontario. Host: *Rhyacionia buoliana* (D. and S.), *Lymantria dispar* (L.), *Laspeyresia pomonella* (L.), *Operophtera brumata* (L.). Many other hosts are known, but these are the introduced pests which were target hosts for introductions of *turionellae* in North America; a number of native pests were target hosts for some of the introductions, however. *C. turionellae moraguesi* (Schmiedeknecht) occurs in northern Africa (*Pimpla freyi* Hellen is probably a synonym of *t. moraguesi*).

Ichneumon turionellae Linnaeus, 1758. Syst. Nat., Ed. 10, p. 564. ♀ (♂ misdet.).

Ichneumon variegatus Schrank, 1785. Neues Mag. Liebhaber Ent. 2: 327. ♀.

Cryptus examinatus Fabricius, 1804. Systema Piezatorum, v. 2, p. 85. ♀.

Ichneumon cingulator Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 275; 9: 348. ♀.

Ichneumon turionator Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 275; 9: 348. Emend.

Pimpla opacellata Desvignes, 1868. Ent. Monthly Mag. 4: 174. ♀.

Pimpla examinatrix Schulz, 1906. Spolia Hym., p. 104. Emend.

Pimpla padellae Torka, 1918. Ent. Rundschau 35: 33. ♂, ♀.

Taxonomy: Roman, 1932. Ent. Tidskr. 53: 14. —Oehlke, 1967. In Ferriere and Vecht, Hym. Cat., pt. 2, p. 32. —Aubert, 1969. Ichn. Ouest-Pal. et Leurs Hotes, pt. 1, p. 94-95.

Biology: Jackson, 1937. Roy. Ent. Soc. London, Proc. 12: 81-91. —Sylvestri, 1941. Lab. Ent. Agr. [Portici], Bol. 5: 27-31. —Bronskill, 1959. Canad. Jour. Zool. 37: 655-688. —Arthur and Wylie, 1959. Entomophaga 4: 297-301. —Harris, 1960. Canad. Jour. Zool. 38: 766.

varians Townes. Colo., N. Mex., Ariz., B. C., Wash., Oreg., Calif. Host: *Laspeyresia pomonella* (L.).

Coccygomimus varians Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 333. ♀. The male of the species was not identified with certainty.

TRIBE THERONIINI

Townes (1969) included the genera *Perithous*, *Delomerista*, and *Pseudorhyssa* in this tribe. Because the placement of these genera in the Theroniini was only provisional and because the name *Delomeristini* (Hellen, 1915) has priority over the name *Theroniini* (Cushman and Rohwer, 1920), the aforementioned genera are here placed in the *Delomeristini*. The genera of *Theroniini* occurring in North America are *Theronia* and *Neotheronia*, the latter being treated by Townes (1969) as a subgenus of *Theronia*. Because the division between *Neotheronia* and *Theronia* is not at all arbitrary, they are here treated as separate genera. The species of *Neotheronia* and *Theronia* are usually primary or secondary parasites of the pupae of *Lepidoptera*.

Genus THERONIA Holmgren

Revision: Gupta, 1962. Pacific Ins. Monogr. 4: 1-142 (Indo-Australian spp.).

Genus THERONIA Subgenus THERONIA Holmgren

Theronia Holmgren, 1859. Svenska Vetensk.-Akad., Ofvers af ... Forhandl. 16: 123.

Type-species: *Pimpla flavicans* (Fabricius). Monotypic. The type species is regarded as a synonym of *Theronia atalantae* (Poda).

Pseudacoenites Kriechbaumer, 1892. Ent. Nachr. 18: 219.

Type-species: *Pseudacoenites moravicus* Kriechbaumer. Monotypic. The type-species is regarded as a synonym of *T. hilaris laevigata* (Tschek).

atalantae fulvescens (Cresson). N. B. s. to Va., w. to B. C. and Calif. Ecology: Adult females of this subspecies are known to hibernate, but it is not known that the subspecies overwinters exclusively in this way. Host: *Choristoneura fumiferana* (Clem.), *Ennomos subsignarius* (Hbn.), *Lambdina somnaria* (Hulst), *Nepytia phantasmaria* (Stkr.), *Oreta rosea* (Wlk.), *Malacosoma americanum* (F.), *M. californicum fragile* (Stretch), *M. distria* Hbn., *Dasychira plagiata* (Wlk.), *Lymantria dispar* (L.), *Orgyia leucostigma* (J. E. S.), *O. pseudotsugata* McD., *Nygmia phaeorrhea* (Don.), *Leucoma salicis* (L.), *Hyalophora cecropia* (L.), *Nymphalis californica* (Bdv.), *Neophasia menapia* (F. and F.), *Enicospilus americanus* (Christ), *Gambrus extrematis* (Cr.), *Hyposoter fugitivus* (Say), *Itopectis conquisitor* (Say). *T. atalantae atalantae* (Poda) occurs in Europe.

Pimpla fulvescens Cresson, 1865. Ent. Soc. Phila., Proc. 4: 268. ♂.

Theronia rufescens (!) Taylor, 1884. Canad. Ent. 16: 92.

Theronia fulvescens var. *mellipennis* Viereck, 1903. In Skinner, Amer. Ent. Soc., Trans. 29: 88. ♀.

Theronia atalantae var. *americana* Krieger, 1906. Ztschr. System. Hym. Dipt. 6: 240. ♂, ♀.

Biology: Weed and Fiske, 1900. U. S. Dept. Agr., Div. Ent. Bul. 26: 33. — Fiske and Thompson, 1909. Jour. Econ. Ent. 2: 455-457. — Howard and Fiske, 1911. U. S. Dept. Agr., Bur. Ent., Bul. 91: 137, 141, 142, 144, 147-149, 236-237, 304. — Aldrich, 1912. Jour. Econ. Ent. 5: 87-88. — Evenden, 1924. Timberman 25 (May): 54. — Townes, 1940. Ent. Soc. Amer., Ann. 33: 286, 293. — Cole, 1956. U. S. Dept. Agr., Forest Serv., Intermountain Forest and Range Expt. Sta. Res. Note 29: 1. — Campbell, 1963. Canad. Ent. 95: 337.

Morphology: Peck, 1937. Canad. Jour. Res., Sect. D (Zool. Sci.) 15: 245, 246, 248, 251, 252.

hilaris hilaris (Say). Southern Que. s. to N. C., w. to Minn. and Kans. Host: *Halisidota caryae* (Harris), *H. maculata* (Harris), *Heterocampa guttivitta* (Wlk.), *Symmerista canicosta* (Hbn.), *Epargyreus clarus* (Cramer). *T. (T.) hilaris laevigata* (Tschek) is European and *T. (T.) hilaris nigra* Uchida occurs in northern Asia.

Ichneumon hilaris Say, 1829. Contrib. Maclurian Lyceum to Arts and Sci. 1: 71. ♂.

Pimpla melanocephala Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 99. ♀.

Taxonomy: Gupta, 1965. Twelfth Internatl. Cong. Ent., Proc., p. 834.

Morphology: Peck, 1937. Canad. Jour. Res., Sect. D (Zool. Sci.) 15: 245, 246, 248, 251, 252.

— Pratt, 1939. Ent. Soc. Amer., Ann. 32: 731, 737.

Genus NEOTHERONIA Krieger

Neotheronia Krieger, 1899. Naturf. Gesell. Leipzig, Sitzber. 14-15: 119.

Type-species: *Theronia tollecta* Cresson. Orig. desig. *T. tollecta* is regarded as a subspecies of *Neotheronia nigrolineata* (Brulle).

Epimecoideus Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 52.

Type-species: *Epimecoideus apicalis* Ashmead. Monotypic and orig. desig.

Acrocremnus Brethes, 1926. Nunquam Otiosus-V (Buenos Aires), p. 7.

Type-species: *Acrocremnus apicipennis* Brethes. Monotypic.

bicincta floridana (Townes). Southern Ga., Fla. Host: *Tromatobia rufopectus* (Cr.).

Neotheronia bicincta bicincta (Cresson) occurs in Cuba, and a third subspecies, *N. b. nubecularia* (Dewitz), occurs in Puerto Rico.

Theronia bicincta floridana Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 362. ♂, ♀.

septemtrionalis Krieger. Md. s. to Fla., w. to Mo., e. Okla., and La.

Neotheronia septemtrionalis Krieger, 1905. Ztschr. System. Hym. Dipt. 5: 305. ♂.

Neotheronia winnemannae Viereck, 1913. U. S. Natl. Mus., Proc. 44: 567. ♀.

TRIBE DELOMERISTINI

The genera in this tribe may be related to those in the Theronini, but the evidence is not conclusive. Neither is there conclusive evidence that the genera here placed in the Delomeristini are related to each other.

Genus **PERITHOUS** Holmgren

The species of *Perithous* are parasites or hyperparasites of Sphecidae which nest in canes or twigs.

Genus **PERITHOUS** subgenus **PERITHOUS** Holmgren

Perithous Holmgren, 1859. Svenska Vetensk.-Akad., Ofvers af ... Forhandl. 16: 123.

Type-species: *Ephialtes albicinctus* Gravenhorst. Desig. by Viereck, 1914.

divinator (Rossi). Que. s. to Conn. and Pa., w. to Wis.; Europe. Adventive. Host: *Pemphredon lethifer* (Shuck.), *P. lugubris* (F.), *Passaloecus gracilis* (Curt.), *Psenulus pallipes* (Pzr.), *Trypoxylon figulum* (L.), *Omalus auratus* (L.). Except for *Pemphredon lethifer*, which is recorded as a host in both North America and Europe, these hosts are recorded only in Europe. *P. (P.) divinator* appears to have entered the northeastern U. S. A. before 1931.

Ichneumon divinator Rossi, 1790. Fauna Etrusca, v. 2, p. 48. ♀.

Pimpla ephippiatoria Dufour and Perris, 1840. Soc. Ent. France, Ann. 9: 47. ♂, ♀.

Pimpla marginellatoria Dufour and Perris, 1840. Soc. Ent. France, Ann. 9: 48. ♂, ♀.

Synonymy uncertain.

Itoplectis rubi Habermehl, 1917. Ztschr. f. Wiss. Insektenbiol. 13: 117. ♂, ♀.

Perithous pimplarius Haupt, 1938. Maerk. Tierwelt 3: 209. ♀.

Biology: Horstmann, 1964. Fauna Mitt. Norddeutschl. 2: 193-197. —Thomas, 1964. Mich. Acad. Sci., Arts, and Letters; Papers 49: 199-201. —Horstmann, 1967. Zool. Anz. 178: 95-102.

mediator neomexicanus (Viereck). Western Alta. s. to N. Mex., w. to B. C. and Calif. Host:

Pemphredon confertum (Fox). *P. (P.) mediator mediator* (Fabricius) is European.

Pimpla neomexicana Viereck, 1903. In Skinner, Amer. Ent. Soc., Trans. 29: 88. ♀.

Biology: Parker and Bohart, 1966. Pan-Pacific Ent. 42: 94.

mediator pleuralis (Cresson). Que. s. to S. C., w. to Sask., Kans., and La. Host: *Pemphredon concolor* Say, *P. inornatus* Say, *P. harbecki* Roh.?

Pimpla pleuralis Cresson, 1868. Canad. Ent. 1: 36. ♀.

Biology: Champlain, 1922. Psyche 29: 97. —Rheinhard, 1929. Nature Mag. 13: 155-157.

—Krombein, 1960. Ent. News 71: 31.

Genus **PERITHOUS** Subgenus **HYBOMISCHOS** Baltazar

Perithous subg. *Hybomischos* Baltazar, 1961. Natl. Inst. Sci. Tech., Manila, Monog. 7: 49.

Type-species: *Perithous (Hybomischos) galbus* Baltazar. Orig. desig.

septemcinctorius (Thunberg). Mich.; Europe. Adventive. Host: *Pemphredon* spp., *Psen (Mimusesa) dahlbomi* (Wesm.), *Psenulus fuscipennis* (Dahl.). These hosts are recorded in Europe. One female was recently found in a spider web in Ann Arbor, Mich. by Torgerson (1972).

Ichneumon septemcinctorius Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 280; 9: 363. ♀.

Ephialtes varius Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 254. ♂, ♀.

Perithous brunnescens Koornneef, 1951. Ent. Ber. 13: 249. ♀. Synonymy uncertain.

Perithous exiguus Haupt, 1954. Deut. Ent. Ztschr. 1: 108. ♀.

Perithous septemcinctorius meridionator Aubert, 1963. Vie et Milieu 14: 849. ♂, ♀. Syn.?

Taxonomy: Torgerson, 1972. Great Lakes Ent. 5: 99.

Genus **DELOMERISTA** Foerster

Delomerista Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 164.

Type-species: *Pimpla mandibularis* Gravenhorst. Monotypically included and desig. by Schmiedeknecht, 1888.

Delomerista spp. have most often been reared from cocoons of sawflies, but they may also parasitize Lepidoptera.

- Revision: Walkley, 1960. *In* Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 362-367.
- Morphology: Morris, Cameron, and Jepson, 1937. Bul. Ent. Res. 28: 360-361. (larvae).
- borealis** Walkley. Que., Colo., N. W. T., Yukon, Alaska.
Delomerista borealis Walkley, 1960. *In* Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 370. ♀.
- gelida** Walkley. Que. s. to Pa., w. to Alaska and Calif.
Delomerista gelida Walkley, 1960. *In* Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 366. ♀.
- japonica diprionis** Cushman. N. S. s. to N. C., w. to Alaska and Calif. Host: *Diprion similis* (Htg.), *Gilpinia frutetorum* (F.), *G. hercyniae* (Htg.), *Neodiprion lecontei* (Fitch), *N. nanulus nanulus* Schedl, *N. pratti banksianae* Roh., *N. sertifer* (Geoff.), *N. tsugae* Midd. The subspecies *japonica* Cushman occurs in Japan.
Delomerista diprionis Cushman, 1939. Wash. Acad. Sci., Jour. 29: 398. ♂, ♀.
- Biology: Furniss and Dowden, 1941. Jour. Econ. Ent. 34: 49-51. —Griffiths, 1960. Canad. Ent. 92: 656.
- Morphology: Finlayson, 1960. Canad. Ent. 92: 25-26 (larva).
- laevis** (Gravenhorst). Que., Maine, N. H., N. W. T., Tex.?, Alaska; Europe. Aubert (1969, 1972) stated that *D. laevifrons* (Thomson) is a species distinct from *laevis*, but gave no indication that he had ever studied the holotype of *laevis*.
Pimpla laevis Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 180. ♀.
Pimpla texana Cresson, 1870. Amer. Ent. Soc., Trans. 3: 145. ♀. The holotype is recorded from Texas, probably in error.
Pimpla laevifrons Thomson, 1877. Opusc. Ent. 8: 750. ♂, ♀.
Pimpla laevifrons (!) Schmiedeknecht, 1888. Zool. Jahrb., Abt. f. System., Geog., u. Biol. Tiere 3: 534.
Pimpla levifrons Dalla Torre, 1901. Cat. Hym., v. 3, p. 438. Emend.
Pimpla levis Dalla Torre, 1901. Cat. Hym. v. 3, p. 439. Emend.
- Taxonomy: Oehlke, 1966 (1965). Beitr. z. Ent. 15: 816. —Aubert, 1969. Ich. Ouest-Pal. et Leurs Hotes, pt. 1, p. 98-99. —Aubert, 1972. Ent. Scand. 3: 10.
- lepteces** Walkley. Que., Colo., Alaska.
Delomerista lepteces Walkley, 1960. *In* Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 368. ♀.
- novita** (Cresson). Que. s. to Va., w. to B. C. and Calif. Host: *Macremphytus* sp., *Diprion similis* (Htg.), *Acrobasis rubrifasciella* Pack., *Exartema olivaceanum* Riley, *Eublemma minima* (Gn.), *Mononychus vulpeculus* (F.). Hosts other than sawflies need verification.
Pimpla novita Cresson, 1870. Amer. Ent. Soc., Trans. 3: 146. ♀.
- Morphology: Finlayson, 1967. Canad. Ent. 99: 1247 (larva).
- pfankuchi** Brauns. U. S. (unknown locality); Europe. The origin of the specimen bearing Hopkins W. Va. No. 5928 is unknown.
Delomerista Pfankuchi Brauns, 1905. Ztschr. System. Hym. Dipt. 5: 131. ♀.

Genus PSEUDORHYSSA Merrill

Pseudorhyssa Merrill, 1915. Amer. Ent. Soc., Trans. 41: 150.

Type-species: *Pseudorhyssa sternata* Merrill. Monotypic and orig. desig.

Revision: Kerrich, 1966. Entomologist 99: 44-46 (European spp.).

maculicoxis (Kriechbaumer). Que. s. to N. C., w. to Alta. and Calif.; Europe. Ecology: In North America the species has been associated with *Rhyssa howdenorum* Townes and *Rhyssa persuasoria* (L.) and is presumably cleptoparasitic on them. Kerrich (1966) has shown that Townes (1960) misidentified the holotype of *Rhyssa approximata* var. *ruficoxis* Kriechbaumer, and Kerrich palaced *ruficoxis* as a synonym of *alpestris* (Holmgren), a species which does not occur in North America.

Rhyssa approximata var. *maculicoxis* Kriechbaumer, 1889. Ent. Nachr. 15: 318. ♀.

Kerrich (1966) incorrectly considered the name *maculicoxis* invalid because it was originally proposed as a varietal name that was "used in an aberrational sense."

Pseudorhyssa sternata Merrill, 1915. Amer. Ent. Soc., Trans. 41: 150. ♀.

Rhyssa praealpina Gyorfi, 1946. Fragm. Faunist. Hung. 9: 33. ♀.

Biology: Coutrier, 1949. Soc. Ent. de France, Bul. 54: 62-63. —Spradbury, 1969. Bul. Ent. Res. 59: 291-297.

Morphology: Spradbury, 1970. Roy. Ent. Soc. London, Proc., Ser. A: Biol. 45: 21-23, 24-25. 26, 27.

TRIBE DIACRITINI

This is a very small tribe erected by Townes, Momoi, and Townes (1965) to include only *Diacritus*, a Holarctic genus including three species. A second monotypic Japanese genus was added by Townes (1969).

Genus DIACRITUS Foerster

Diacritus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 191.

Type-species: *Mesoleptus muliebris* Cresson. By subsequent monotypy from inclusion by Davis, 1895.

Phidias Snellen van Vollenhoven, 1898. Tijdschr. v. Ent. 21: 164. Preocc. by Rafinesque, 1815.

Type-species: *Phidias aciculatus* Snellen van Vollenhoven. Monotypic.

Stenolabis Kriechbaumer, 1894. Ent. Nachr. 20: 58.

Type-species: *Stenolabis cingulata* Kriechbaumer. Monotypic. The type-species is regarded as a synonym of *D. aciculatus* (Snellen van Vollenhoven).

Taxonomy: Townes, 1957. Ent. Soc. Wash., Proc. 59: 16 (Townes here removed the genus from the Neoxoridini [=Poemeniini Townes] and placed it provisionally in the Oxytorinae [=Plectiscinae auct.], and the genus was also excluded from the Pimplinae in the Revision by Townes and Townes [1960]).

muliebris (Cresson). Que. s. to Va. and apparently w. to northwestern U. S.

Mesoleptus? *muliebris* Cresson, 1868. Amer. Ent. Soc., Trans. 2: 102. ♂.

Mesoleptus variabilis Provancher, 1875. Nat. Canad. 7 (4): 115. ♂. Barron (1975) rejected the "lectotype" selected by Gahan and Rohwer (1918) and gave data for the specimen he regarded as the holotype.

Mesostenus rufipes Provancher, 1875. Nat. Canad. 7 (8): 249; 7 (9): 263. ♀.

Echthrus pediculatus Provancher, 1880. Nat. Canad. 12: 99. ♀.

Mesostenus pluricinctus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 76. ♀.

Plectiscidea (*Aperileptus?*) *contentionis* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 276. ♀.

Taxonomy: Cushman, 1917. Ent. Soc. Wash., Proc. 19: 162-165. —Gahan and Rohwer, 1918. Canad. Ent. 50: 101. —Momoi, 1966. Kontyu 34: 3. —Barron, 1975. Nat. Canad. 102: 528, 534, 552, 580.

TRIBE NEOXORIDINI

The name Neoxoridini Clement (1938) has priority over the names Eugaltini Townes (1949) or Poemeniini Townes (1951).

Revision: Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 444-451 (as part of Xoridini). —Clement, 1938. Festschr. Embrik Strand, v. 4, p. 515-522 (western Palearctic spp.). —Oehlke, 1966 (1965). Beitr. z. Ent. 15: 881-892 (western Palearctic spp.).

Taxonomy: Townes, 1957. Ent. Soc. Wash., Proc. 59: 15-20 (genera of world).

Genus POEMENIA Holmgren

Ophiodes Hartig, 1847. Naturw. Ver. Harz, Ber. 1846-1847, p. 18. Preocc. by Wagler, 1830; Guenee, 1841.

Type-species: *Ophiodes montanus* Hartig. Monotypic. The type-species is regarded as a synonym of *P. hectica* (Gravenhorst).

Poemenia Holmgren, 1859. Svenska Vetensk.-Akad., Ofvers af ... Forhandl. 16: 130.

Type-species: *Poemenia notata* Holmgren. Monotypic.

Calliclisis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 169.

Type-species: *Ephialtes hecticus* Gravenhorst. Desig. by Viereck, 1914 from three species included by Schmiedeknecht, 1888.

Phthinodes Tschek, 1868. Zool.-Bot. Gesell. Wien, Verh. 18: 272.

Type-species: *Ephialtes hecticus* Gravenhorst. Monotypic.

Euxorides Cresson, 1870. Amer. Ent. Soc., Trans. 3: 167.

Type-species: *Euxorides americanus* Cresson. Monotypic.

Ophiogastra Ashmead, 1900. Canad. Ent. 32: 368. N. name for *Ophiodes* Hartig.

Lissonotopsis Habermehl, 1917. Ztschr. f. Wiss. Insektenbiol. 13: 234, 306.

Type-species: *Lissonotopsis rufa* Habermehl. Monotypic.

Members of this genus may all be parasites of aculeate Hymenoptera which nest in wood, abandoned plant galls, and similar situations.

Revision: Habeck and Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 376-387.

albipes (Cresson). N. S. s. to S. C. and La., w. to B. C. and Calif.

Ephialtes albipes Cresson, 1870. Amer. Ent. Soc., Trans. 3: 143. ♀.

Morphology: Pratt, 1939. Ent. Soc. Amer., Ann. 32: 735.

americana americana (Cresson). N. S. s. to Fla., w. to Great Lakes. Host: *Passaloecus cuspidatus* Sm.

Euxorides americanus Cresson, 1870. Amer. Ent. Soc., Trans. 3: 167. ♀.

americana nebulosa Habeck and Townes. Ont., Colo., Ariz., B. C. s. to Calif. Ecology: This subspecies has been associated with *Passaloecus relativus* Fox, *Osmia* sp., *Paratimia conicola* Fisher, and *Laspeyresia piperana* (Bsk.) in rearings from cones of *Pinus* spp.

Poemenia americana nebulosa Habeck and Townes, 1960. In Townes and Townes, U. S. Natl. Mus., Bul. 216 (pt. 2): 383. ♂, ♀.

pacifica Habeck and Townes. Wash. s. to Calif. Ecology: This species has been reared from galls of *Disholcaspis truckeensis* (Ash.) and also from the galls of another cynipid from which a "chrysid-like bee" also emerged. This species is closely related to *Poemenia notata* Holmgren.

Poemenia pacifica Habeck and Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 385. ♂, ♀.

thoracica (Cresson). Sask. s. to Colo., w. to B. C. and Calif. Host: *Osmia lingnaria propinqua* Cr.

Ephialtes thoracicus Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 377. ♀.

Euxorides Vancouveriensis Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 369. ♀.

Ephialtes vancouverensis Harrington, 1894. Canad. Ent. 26: 249. ♀.

Genus PODOSCHISTUS Townes

Podoschistus Townes, 1960. Ent. Soc. Wash., Proc. 59: 18.

Type-species: *Xorides vittifrons* Cresson. Orig. desig.

vittifrons (Cresson). Maine s. to Ga., w. to Oreg. and Tex. Ecology: One specimen of this species was reared from *Tetropium velutinum* in *Larix occidentalis*, but otherwise *vittifrons* has been associated with or reared from borers in hardwoods. Host:

Tetropium velutinum LeC., *Graphisurus fasciatus* (DeG.).

Xorides vittifrons Cresson, 1868. Canad. Ent. 1: 37. ♀.

Podoschistus vittifrons schlingeri Townes, 1960. In Townes and Townes, U. S. Natl. Mus.

Bul. 216 (pt. 2): 388. ♀. N. syn.. The description of this synonym was based upon a single female from Utah which shows a minor difference in the coloration of the hind tibia, that difference not being found in the single male known to me from Oregon.

Morphology: Pratt, 1939. Ent. Soc. Amer., Ann. 32: 735.

Genus NEOXORIDES Clement

Neoxorides Clement, 1938. Festschr. Embrik Strand, v. 4, p. 517.

Type-species: *Xorides nitens* Gravenhorst. Orig. desig.

Members of this genus are parasites of wood-boring Coleoptera, and are often collected on trunks of dead trees.

borealis (Cresson). Southern Man. s. to Colo. and Ariz., w. to S. B. C. and Calif. Host:

Melanophila drummondi (kby.), *Tetropium velutinum* LeC., *Hylotrupes bajulus* (L.).

The holotype of this species is recorded from "Hudson Bay Territory". *N. borealis* is closely related to the European *N. collaris* (Gravenhorst), and may prove only to be a subspecies of it.

Xorides borealis Cresson, 1870. Amer. Ent. Soc., Trans. 3: 167. ♀.

Xorides occidentalis Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 380. ♀.

caryae (Harrington). Que. s. to N. C., w. to Mich. Host: *Saperda discoidea* F.

Xorides caryae Harrington, 1891. Canad. Ent. 23: 132. ♂, ♀.

Biology: Harrington, 1891. Canad. Ent. 23: 132. — Blackman and Stage, 1924. N. Y. State Col. Forestry, Syracuse Univ., Tech. Pub. 17: 182.

pilulus Townes. N. B. s. to N. C., w. to n. N. W. T., Yukon, Oreg., and Colo. Ecology: This species appears to be a parasite of wood borers in both hardwoods and conifers. It is anomalous in being the widest ranging, yet least collected, of the Nearctic spp. of *Neoxorides*.

Neoxorides pilulus Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 390. ♂, ♀.

TRIBE RHYSSINI

The North American members of this tribe are all parasites of Siricoidea.

Revision: Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 418-428.

Genus RHYSSA Gravenhorst

Rhyssa Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 260.

Type-species: *Ichneumon persuasorius* Linnaeus. Desig. by Westwood, 1840.

Cryptocentrum Kirby, 1837. In Richardson, Swainson, and Kirby, Fauna Bor. Amer., v. 4, p. 260.

Type-species: *Cryptocentrum lineolatum* Kirby. Monotypic.

Pararhyssa Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 109.

Type-species: *Rhyssa persuasoria* (Linnaeus). Desig. by Viereck, 1914.

alaskensis Ashmead. Alta. s. to N. Mex., w. to s. Alaska and Calif.

Rhyssa alaskensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 199. ♀.

Rhyssa skinneri Viereck, 1903. In Skinner, Amer. Ent. Soc., Trans. 29: 87. ♀.

crevieri (Provancher). N. S. s. to N. C., w. to Minn. Host: *Urocercus albicornis* (F.). It remains to be proven that *crevieri* is distinct from *lineolata* (Kirby).

Epirhyssa Crevieri Provancher, 1880. Nat. Canad. 12: 17. ♂.

hoferi Rohwer. Colo., N. Mex., Ariz. Ecology: It appears that this species occurs in the lower reaches of forests of *Pinus ponderosa* and in the pinyon-juniper forest type. Males which are predominantly black with yellow markings (as opposed to red with yellow markings) have been collected since the species was treated in the revision of Townes and Townes (1960). Presumably, females with predominantly black ground color will also be found.

Rhyssa hoferi Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 421. ♀.

howdenorum Townes. Md., Va., N. C., Ga., Ala., Nebr. Ecology: This species parasitizes siricids boring in *Pinus* spp.

Rhyssa howdenorum Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 398. ♂, ♀.

lineolata (Kirby). N. S. s. to Ga., w. to B. C. and Oreg.; New Zealand, Australia. Host:

Urocercus albicornis (F.), *U. gigas flavicornis* (F.), *Sirex cyaneus* F., *S. edwardsii* Brulle,

S. noctilio F., *Xeris* sp. This species is adventive in New Zealand, there parasitizing *Sirex noctilio*, which is adventive from Europe. Subsequently, *R. lineolata* was introduced in Australia for control of *S. noctilio*.
Cryptocentrum lineolatum Kirby, 1837. In Richardson, Swainson, and Kirby, Fauna Bor. Amer., v. 4, p. 260. ♂.

Rhyssa albomaculata Cresson, 1864. Ent. Soc. Phila., Proc. 3: 318. ♀.

Taxonomy: Morley, 1909. Entomologist 42: 133. — Morley, 1910. Entomologist 43: 243.
 — Zondag and Nuttall, 1961. New Zeal. Ent. 2 (6): 40-44 (identity and origin of New Zealand population).

Biology: Gardiner, 1966. Canad. Ent. 98: 95-97 (oviposition).

Morphology: Pratt, 1939. Ent. Soc. Amer., Ann. 32: 733.

persuasoria *persuasoria* (Linnaeus). Newfoundland (insular) s. to Ga., w. to B. C. and Calif.; Eurasia; New Zealand, Australia. Host: *Sirex areolatus* (Cr.), *S. noctilio* F., *Xeris* sp., *Syntexis libocedrii* Rohwer. *Sirex noctilio* was the target species for the successful introductions of *R. p. persuasoria* into New Zealand and Australia from Europe, but the other host records are North American. Two Himalayan subspecies of *R. persuasoria* are recognized by Kamath and Gupta (1971).

Ichneumon persuasorius Linnaeus, 1758. Syst. Nat., ed. 10, v. 1, p. 562. ♀.

Ichneumon camelus Scopoli, 1763. Ent. Carn., p. 282. sex ?

Rhyssa marginalis Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 79. ♀.

Rhyssa lineolata Kriechbaumer, 1887. Ent. Nachr. 13: 81. ♀. Uncertain syn. which is preocc. by Kirby, 1837.

Taxonomy: Kamath and Gupta, 1971. Oriental Ins. Monog. 2: 14 (key to subspecies).

— Spradbury and Radkowski, 1974. Bul. Ent. Res. 64: 653-668 (geog. variation).

Biology: Franke, 1959. Photographie u. Forsch. 8: 1-9 (oviposition). — Ozols, 1962. Latvijas Ent. 5: 29-40. — Klein, 1965. Ztschr. f. Angew. Ent. 56: 224. — Morgan and Stewart, 1966. Roy. Soc. New Zeal. (Zool.), Trans. 8: 31-38 (habits and life history). — Hocking, 1968. Australian Ent. Soc., Jour. 7: 1-5. — Spradbury, 1970. Animal Behavior 18: 103-114 (host finding).

ponderosae Townes. Calif. Host: *Sirex areolatus* (Cr.).

Rhyssa ponderosae Townes, 1960. In Townes and Townes, U. S. Natl. Mus., Bul. 216 (pt. 2): 401. ♂, ♀.

Genus RHYSELLA Rohwer

Rhyssella Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 422.

Type-species: *Rhyssa nitida* Cresson. Orig. desig.

Members of this genus parasitize Siricoidea which bore in hardwood trees or bushes and may be host specific to Xiphidiidae.

humida (Say). Maine s. to Ga., w. to Minn. and Miss. Host: *Xiphidria abdominalis* Say, *X. tibialis* Say.

Pimpla humida Say, 1836. Boston Jour. Nat. Hist. 1: 224. ♀.

nitida (Cresson). Maine s. to Ga., w. to B. C. Host: *Xiphidria canadensis* Prov., *X. maculata* Say.

Rhyssa nitida Cresson, 1864. Ent. Soc. Phila., Proc. 3: 319. ♂.

Rhyssa canadensis Cresson, 1868. Canad. Ent. 1: 35. ♀.

Epirhyssa clavata Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 115.

Biology: Kaston, 1937. Conn. (State) Agr. Expt. Sta., Bul. 396: 359.

Morphology: Pratt, 1939. Ent. Soc. Amer., Ann. 32: 733.

Genus MEGARHYSSA Ashmead

Thalessa Holmgren, 1859. Svenska Vetensk.-Akad., Ofvers af ... Forhandl. 16: 122. Preocc. by Adams, 1853.

Type-species: *Ichneumon clavator* Fabricius. Desig. by Ashmead, 1900. The type-species is regarded as a synonym of *M. gigas* (Laxmann).

Megarhyssa Ashmead, 1900. Canad. Ent. 32: 368. N. name for *Thalassa* Holmgren.

Megalarhyssa Schulz, 1906. Spolia Hym., p. 115. Emend.

Eurhyssa Derksen, 1941. Ztschr. f. Morph. U. Oekol. der Tiere 37: 721. Name invalid; type-species not designated except subsequently by Townes and Townes, 1951 as *Ichneumon superbus* Schrank.

In eastern North America the three species of *Megarhyssa* which are common in hardwood forests—*atrata* (Linnaeus), *macrurus* (Linnaeus), and *greenei* (Viereck)—all show rather marked, more or less clinal, geographic variation in the coloration of the wings, particularly in the females. Specimens from the northern range extremities often have wings which are nearly clear, while the wings of those from the southern range extremities are most deeply or most uniformly infuscate. In *macrurus* and *greenei* subspecific distinctions have been made near the southern extremities of the ranges, and in the case of *atrata* a subspecific distinction has been made near the northern extremity of the range. I do not believe it is meaningful to treat these particular peripheral variants as subspecies.

Revision: Michener, 1939. Pan-Pacific Ent. 15: 126-131.

Biology: Heatwole, Davis, and Wenner, 1962. Ztschr. f. Tierpsychol. 19: 652-664. —Heatwole, Davis, and Wenner, 1964. Amer. Midland Nat. 71: 374-381. —Cameron, 1965.

Commonwealth Inst. Biol. Control, Tech. Bul. 5: 22.

atrata (Fabricius). N. S. s. to Ga., w. to Wyo. and Tex. Host: *Tremex columba* (L.).

Ichneumon atratus Fabricius, 1781. Species Insectorum, v. 1, p. 436. ♀.

Ichneumon tenebrator Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 266; 9: 322. Unnecessarily proposed n. name for *atratus* Fabricius.

Rhyssa laevigata Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 78. ♂.

Megarhyssa atrata lineata Porter, 1957. Ent. News 68: 206. ♀. N. syn.

Biology: Harris, 1842. Rpt. Ins. Mass. Injurious to Veg., p. 391. —Walsh, 1867. Pract. Ent. 2: 118. —Walsh and Riley, 1868. Amer. Ent. 1: 77. —Harrington, 1882. Canad. Ent. 14: 82. —Lintner, 1883. Cultivator and Country Gentleman 48: 561. —Harrington, 1883. Ent. Soc. Ontario, Ann. Rpt. 13: 23-24. —Harrington, 1887. Canad. Ent. 19: 206-209. —Harrington, 1888. Ent. Soc. Ontario, Ann. Rpt. 18: 25. —Lintner, 1897. Cultivator and Country Gentleman 62: 506. —Fyles, 1916. Ent. Soc. Ontario, Ann. Rpt. 46: 54, 57. —Macnamara, 1916. Ent. Soc. Ontario, Ann. Rpt. 46: 59. —Champlain, 1921. Ent. News 32: 241. —Blackman and Stage, 1924. N. Y. State Col. Forestry, Syracuse Univ., Tech. Pub. 17: 178. —Klugh, 1932. Amer. Photog. 26: 158. —Kaston, 1937. Conn. (State) Agr. Expt. Sta., Bul. 396: 359. —Proctor, 1938. Biol. Survey Mt. Desert Region, v. 6, p. 406. —Fattig, 1949. Ent. News 40: 69-71.

Morphology: Snodgrass, 1933. Smithsn. Inst. Misc. Collect. 89 (8): 112-114.

greenei Viereck. N. S. s. to Fla., w. to Minn., e. Kans., and Miss. Host: *Tremex columba* (L.).

Megarhyssa greenei Viereck, 1910. In Smith, N. J. State Mus., Ann. Rpt. for 1909, p. 627.

Nomen nudum.

Megarhyssa greenei Viereck, 1911. U. S. Natl. Mus., Proc. 40: 191. ♂, ♀.

Megarhyssa greenei floridana Townes, 1960. U. S. Natl. Mus. Bul. 216 (pt. 2): 424. ♀. N. syn.

Biology: Proctor, 1938. Biol. Survey Mt. Desert Region, v. 6, p. 406. —Townes, 1939. Brooklyn Ent. Soc., Bul. 34: 29. —Fattig, 1949. Ent. News 40: 70-71.

Morphology: Pratt, 1939. Ent. Soc. Amer., Ann. 82: 377.

macrurus icterosticta Michener. Colo., N. Mex., Utah, Ariz. Presumably, *m. icterosticta* intergrades with the nominate subspecies in the Rocky Mountains, but intermediate specimens are apparently unknown.

Megarhyssa lunator icterosticta Michener, 1939. Pan-Pacific Ent. 15: 130. ♂, ♀.

macrurus macrurus (Linnaeus). Maine s. to Fla., w. to w. S. Dak. and w. Tex.; n. Mexico. Host: *Tremex columba* (L.).

Ichneumon macrurus Linnaeus, 1771. Mantissa Plantarum, v. 2, p. 540. ♀.

Ichneumon lunator Fabricius, 1781. Species Insectorum, v. 1, p. 430. ♀.

Ichneumon Georgicus Megerle, 1802. Appendix ad Cat. Ins., Quae Mense Novembris 1802 Vienne Austriae Auctionis Lege Vendita Fuere, p. 16. ♀.
Thalessa? histrio Kriechbaumer, 1890. Wien. Mus. der Naturgesch., Ann. 5: 487. ♂. Preocc. in *Megarhyssa* by *Ichneumon histrio* Christ, 1791.
Megalorhyssa lunatrix Schulz, 1906. Spolia Hym., p. 115. Emend.
Megarhyssa lunator phaeoptila Michener, 1939. Pan-Pacific Ent. 15: 129. ♀.

Biology: Harris, 1842. Rpt. Ins. Mass. Injurious to Veg., p. 391. —Emmons, 1854. Nat. Hist. N. Y. (pt. 5) v. 5, p. 194. —D'Urban, 1865. Ent. Monthly Mag. 2: 71. —Riley, 1870. Amer. Ent. 2: 96, 128. —Fletcher, 1881. Ent. Soc. Ontario, Ann. Rpt. 11: 67. —Harrington, 1882. Canad. Ent. 14: 82. —Harrington, 1883. Ent. Soc. Ontario, Ann. Rpt. 13: 23-24. —Gade, 1884. Brooklyn Ent. Soc., Bul. 7: 103. —Lintner, 1884. Cultivator and Country Gentleman 49: 331. —Riley, 1885. Brooklyn Ent. Soc., Bul. 7: 123. —Smith, 1885. Brooklyn Ent. Soc., Bul. 7: 124. —Riley, 1886. Ent. Soc. Wash., Proc. 1: 15. —Harrington, 1887. Canad. Ent. 19: 206-209. —Lintner, 1888. N. Y. State Mus. Nat. Hist., Rpt. 41: 35-42. —Harrington, 1888. Ent. Soc. Ontario, Ann. Rpt. 18: 25-27. —Riley, 1888. U. S. Dept. Agr., Insect Life 1: 168-179. —Lintner, 1889. N. Y. State Ent., Rpt. 4: 35-36. —Lintner, 1893. N. Y. State Mus. Nat. Hist., Rpt. 45: 163-166. —Lintner, 1897. Cultivator and Country Gentleman 62: 506. —Ashmead, 1900. N. J. State Bd. Agr., Ann. Rpt. 27 (sup.): 572. —Fyles, 1911. Ent. Soc. Ontario, Ann. Rpt. 41: 80. —Douglas, 1912. State Ent. Ind., Ann. Rpt. 4: 105. —Baldwin, 1914. State Ent. Ind., Ann. Rpt. 6: 51. —Fyles, 1916. Ent. Soc. Ontario, Ann. Rpt. 46: 54, 57. —Fyles, 1917. Ent. Soc. Ontario, Ann. Rpt. 47: 28. —Barlow, 1921. Ent. News, 32: 291. —Cushman, 1926. Ent. Soc. Wash., Proc. 28: 32. —McDaniel, 1933. Mich. Agr. Expt. Sta., Spec. Bul. 238: 37. —Woodbury, 1933. Ecol. Monog. 3: 191. —Abbott, 1934. N. Y. Ent. Soc., Jour. 42: 127-133. —Abbott, 1934. Psyche 41: 238-240. —Abbott, 1937. Ent. News 47: 263-264. —Kaston, 1937. Conn. (State) Agr. Expt. Sta., Bul. 396: 359. —Kelley, 1939. Nature Mag. 32: 379-380. —Townes, 1939. Brooklyn Ent. Soc., Bul. 34: 29. —Fattig, 1949. Ent. News 40: 69-71.

Morphology: Abbott, 1934. N. Y. Ent. Soc., Jour. 42: 127-133. —Abbott, 1934. Brooklyn Ent. Soc., Bul. 29: 39-41. —Abbott, 1935. Brooklyn Ent. Soc., Bul. 30: 10-13. —Peck, 1937. Canad. Jour. Res., Sect. D (Zool. Sci.) 15: 237-240, 246, 247, 251.

Biology: Pratt, 1939. Ent. Soc. Amer., Ann. 32: 733.

Morphology: Snodgrass, 1941. Smithsn. Inst., Misc. Collect. 99 (14): 33-34.

nortoni (Cresson). Newfoundland (Labrador) s. to n. Ga., w. to Alaska and Calif.; New Zealand, Australia. Ecology: Occurs in coniferous forests. Host: *Urocerus albicornis* (F.), *Xeris morrisoni* (Cr.), *Sirex* sp., *S. noctilio* F. These host records are North American, except in the case of *Sirex noctilio*, which was the target species for the successful introductions into New Zealand and Australia. It seems very likely that *nortoni* will, at best, prove to be only subspecifically distinct from the Eurasian *M. gigas* (Laxmann).
Rhyssa nortoni Cresson, 1864. Ent. Soc. Phila., Proc. 3: 317. ♀.
Thalessa Quebecensis Provancher, 1873. Nat. Canad. 5: 447. ♂, ♀. Barron (1975) selected a lectotype.
Megarhyssa nortoni Dalla Torre, 1901. Cat. Hym., v. 3, p. 481. Emend.

Taxonomy: Barron, 1975. Nat. Canad. 102: 542-543.

Biology: Essig, 1926. Ins. of West. N. Amer., p. 795-796. —Proctor, 1938. Biol. Survey Mt. Desert Region, v. 1, p. 406. —Madden, 1968. Nature [London] 218: 189-190. —Nuttall, 1973. New Zeal. Ent. 5 (2): 112-117 (mating behavior).

Genus EPIRHYSSA Cresson

Epirhyssa Cresson, 1865. Ent. Soc. Phila., Proc. 4: 39.

Type-species: *Epirhyssa speciosa* Cresson. Desig. by Viereck, 1914.

Rhyssonota Kriechbaumer, 1890. Wien. Mus. der Naturgesch., Ann. 5 (3): 489.

Type-species: *Rhyssonota tristis* Kriechbaumer. Monotypic. Except for the single species occurring in the southwestern U. S., this genus is Neotropical.

dietrichi Townes. Ariz.

Epirhyssa dietrichi Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 414. ♂, ♀.

SUBFAMILY LABENINAE

Taxonomy: Townes, 1969. Amer. Ent. Inst., Mem. 11: 194-207 (tribes and genera of world; as Labiinae, = Labeninae).

TRIBE LABENINI

This is a small tribe, including five genera, only one of which has Nearctic species.

Genus LABENA Cresson

Labena Cresson, 1864. Ent. Soc. Phila., Proc. 3: 399.

Type-species: *Cryptus grillator* Say. Desig. by Viereck, 1914.

Caryocetus Walsh, 1866. Pract. Ent. 1: 30.

Type-species: *Mesochorus fuscipennis* Brulle. Monotypic.

Microtritus Kriechbaumer, 1889. Ent. Nachr. 15: 307.

Type-species: *Microtritus apicalis* Kriechbaumer. Monotypic.

Dyseidopus Kriechbaumer, 1890. Wien. Mus. der Naturgesch., Ann. 5: 489.

Type-species: *Dyseidopus sericeus* Kriechbaumer. Monotypic.

Neonotus Parrot, 1955 (1954). Linn. Soc. N. S. Wales, Proc. 79:230.

Type-species: *Neonotus chadwickii* Parrot. Monotypic and orig. desig.

This is a large Australian, Neotropic, and Nearctic genus.

Revision: Townes and Townes, 1960. U. S. Natl. Mus. Bul. 216 (pt. 2): 531-537.

grallator (Say). Mass. and s.e. Ont. s. to Fla., w. to Wis., Colo., and s.e. Calif.; Mexico? Ecology:

Has been reared from insects infesting *Pinus* and *Taxodium*, but is more often reared from borers in various angiosperms (trees, bushes, and vines). Host: *Aneflomorpha* sp.? in *Lycium belandieri*, cerambycid in *Baccharis halimifolia*, *Knolliana cincta* (Drury), *Psyrassa unicolor* (Rand.), *Saperda puncticollis* Say, *Stenosphenus notatus* (Oliv.), *Agrilus* sp., *A. arcuatus* (Say), *Chrysobothris femorata* (Oliv.), *C. tranquebarica* (Gmelin), *Thrinopyge alacris* LeC., *Lixus scrobicollis* Boh., *Pissodes strobi* (Peck). The geographic variation of *grallator* does not seem conducive to the recognition of subspecies.

Cryptus grillator Say, 1836. Boston Jour. Nat. Hist. 1: 236. ♀.

Mesochorus fuscipennis Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 250. ♀.

Labena apicalis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 402. ♂.

Labena grallatrix Schulz, 1906. Spolia Hym., p. 116. Emend.

Labena confusa Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 411. ♀.

Labena confusa var. *minor* Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 413. ♀.

Labena grillator xutha Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 535. ♂, ♀. N. syn.

Labena grillator ochreatea Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 535. ♂, ♀. N. syn.

Labena grillator lutea Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 536. ♂. N. syn.

Labena grillator balteata Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216(pt. 2): 536. ♂, ♀. N. syn.

tinctipennis Rohwer. Central Ariz., s. B. C., Calif. Host: *Dicerca horni* Crotch.

Labena tinctipennis Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 409. ♀.

TRIBE GROTEINI

The members of this tribe are parasites of bees. Only one of the three genera is represented by North American species.

Genus GROTEA Cresson

Grotea Cresson, 1864. Ent. Soc. Phila., Proc. 3: 397.

Type-species: *Grotea anguina* Cresson. Monotypic.

This is a small Neotropic and Nearctic genus. The hosts are twig-nesting bees of the genus *Ceratina*. More than one *Ceratina* larva is consumed by each *Grotea* larva, and the pollen loaves in the cells of the consumed *Ceratina* larvae are also eaten by larvae of *Grotea*.

Revision: Townes and Townes, 1960. U. S. Natl. Mus. Bul. 216 (pt. 2): 538-541 (Nearctic spp.).

—Slobodchikoff, 1970. Pan-Pacific Ent. 46: 50-60 (Nearctic and Neotropic spp.).

anguina Cresson. Que. w. to Wis. and w. Iowa, s. to n.w. S. C., n. Miss., and s. Tex. Host:

Ceratina calcarata Rbtsn., *C. dupla* Say, *C. metallica* H. S. S.

Grotea anguina Cresson, 1864. Ent. Soc. Phila., Proc. 3: 398. ♂, ♀.

Biology: Graenicher, 1905. Ent. News 16: 43-49. —Rau, 1922. Acad. Sci. St. Louis, Trans. 24:

43. —Rau, 1928. Ent. Soc. Amer., Ann. 21: 383. —Daly, Stage, and Brown, 1967. Ent. Soc.

Amer., Ann. 60: 1275.

californica Cresson. Northern Idaho and s. B. C. s. to s. Calif. Host: *Ceratina acantha* Prov.,

C. dallatorreana Friese, *C. gigantea* H. S. S., *C. nanula* Ckll., *C. punctigena* Ckll.

Grotea californica Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 370. ♀.

Biology: Slobodchikoff, 1967. Pan-Pacific Ent. 43: 161-168. —Daly, Stage, and Brown, 1967.

Ent. Soc. Amer., Ann. 60: 1275-1277.

lokii Slobodchikoff. Colo., Ariz.; Mexico. This species was confused with *anguina* and *californica* in the revision of *Grotea* by Townes and Townes (1960).

Grotea lokii Slobodchikoff, 1970. Pan-Pacific Ent. 46: 60. ♂, ♀.

TRIBE BRACHYCYRTINI

Revision: Walkley, 1956. U. S. Natl. Mus., Proc. 106: 315-329.

Genus BRACHYCYRTUS Kriechbaumer

Brachycyrtus Kriechbaumer, 1880. Zool.-Min. Ver. Regensburg, Corresp. Bl. 34: 161.

Type-species: *Brachycyrtus ornatus* Kriechbaumer. Monotypic.

Proterocryptus Ashmead, 1906. U. S. Natl. Mus., Proc. 30: 174.

Type-species: *Proterocryptus nawai* Ashmead. Monotypic.

Xanthocharops Morley, 1912. Linn. Soc. London, Trans. 15: 173.

Type-species: *Xanthocharops primus* Morley. Monotypic.

Vakau Cheesman, 1928. Ann. and Mag. Nat. Hist. (10) 1: 189.

Type-species: *Vakau taitensis* Cheesman. Monotypic and orig. desig.

Brachycyrtomorpha Blanchard, 1940. In Kreibom de la Vega, Tucuman Estac. Expt. Agr.,

Rev. Indus. y Agr. 3: 170. Nomen nudum (figure only).

Brachycyrtomorpha Blanchard, 1942. Soc. Cient. Argentina, An. 134: 105.

Type-species: *Brachycyrtomorpha crossi* Blanchard. Monotypic and orig. desig.

This is a small genus of worldwide distribution. The hosts are pupae or prepupae of Chrysopidae.

Revision: Townes and Townes, 1960. U. S. Natl. Mus. Bul. 216 (pt. 2): 542-544 (Nearctic spp.).

ornatus Kriechbaumer. Pa., Md., Ohio, Mich., Ariz., s. B. C.; Mexico; Eurasia. Host: Chrysopid.

Brachycyrtus ornatus Kriechbaumer, 1880. Zool.-Min. Ver. Regensburg, Corresp.-Bl. 34:

163. ♀.

Brachycyrtus chrysopae Walley, 1940. Canad. Ent. 72: 86. ♀.

pretiosus Cushman. Central and s. Fla. Host: *Nodita pavid* (Hagen), chrysopid pupae.

Brachycyrtus pretiosus Cushman, 1936. U. S. Nat. Mus., Proc. 84: 19. ♂, ♀.

SUBFAMILY TRYPHONINAE

Species of this subfamily are external parasites of the larvae of sawflies or Lepidoptera. The eggs of Tryphoninae are equipped with a holdfast which is often borne on a stalk or is derived

from coiling of the stalk; it serves to fasten the eggs within the puncture the female makes in the skin of the host larva. According to Mason (1967), in species which parasitize sawflies, eclosion from the egg does not occur until after the host has spun its cocoon.

Taxonomy: Townes, 1969. Amer. Ent. Inst., Mem. 11: 143-193 (genera of world).

Biology: Mason, 1967. Canad. Ent. 99: 376.

TRIBE PHYTODIETINI

Members of this tribe are parasitic on larvae of Lepidoptera. The stalk of the egg is long, slender, and loosely coiled; in newly deposited eggs the stalk is elastic, but later becomes rigid so that its coiling serves to hold it firmly in the skin of the host.

Townes (1969) preferred to group the numerous species of this tribe into two genera, each with a number of subgenera. His use of more subgeneric than generic names seems to make the classification of this tribe discordant with his classification of the rest of the subfamily.

Genus PHYTODIETUS Gravenhorst

This genus is divided into four subgenera, two of which have North American species. The North American species are currently being revised by Dr. C. C. Loan, and publication of his revision may precede the appearance of this catalog.

Revision: Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 460-468.

Genus PHYTODIETUS subgenus NEUCHORUS Uchida

Neuchorus Uchida, 1931. Insecta Matsumurana 5: 143.

Type-species: *Neuchorus longicauda* Uchida. Monotypic and orig. desig.

Doratistes Seyrig, 1932. Acad. Malgache, Mem. 11: 27. Described as a subgenus of

Phytodietus but treated nomenclaturally as a genus.

Type-species: *Doratistes absyrtinus* Seyrig. Orig. desig.

Taxonomy: Krebs, 1969. Canad. Ent. 101: 548-549 (key to Nearctic spp.).

rufipes pulcherrimus (Cresson). Atlantic to Cont. Divide in Transit. and U. Aust. Zones. Host:

Loxostege rantis (Gn.), *L. sticticalis* (L.), *Ostrinia obliteralis* (Wlk.), *Phlyctaenia coronata tertialis* (Gn.). *P. (N.) rufipes rufipes* Holmgren is European.

Mesoleptus pulcherrimus Cresson, 1868. Amer. Ent. Soc., Trans. 2: 101. ♂.

Phytodietus distinctus Cresson, 1870. Amer. Ent. Soc., Trans. 3: 166. ♀.

Phytodietus zonatus Provancher, 1874. Nat. Canad. 6: 79. ♀.

Mesostenus nobilis Provancher, 1882. Nat. Canad. 13: 363. ♀.

Mesoleius telarius Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 106. ♀.

Ctenopelma pulchra Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 198. ♂.

Taxonomy: Townes, 1969. Amer. Ent. Inst., Mem. 11: 147.

Biology: Baldus, 1929. Ohio Jour. Sci. 29: 233-234.

rutilus Krebs. Md., N. Y., Mich., Ky.

Phytodietus (Neuchorus) rutilus Krebs, 1969. Canad. Ent. 101: 549. ♂, ♀.

Genus PHYTODIETUS Subgenus PHYTODIETUS Gravenhorst

Phytodietus Gravenhorst, 1829. Ichn. Europaea 2: 928.

Type-species: *Phytodietus astutus* Gravenhorst. Desig. by Westwood, 1840.

Phytodietus Agassiz, 1846. Nomencl. Zool., Index Univ., p. 291. Emend.

burgessi (Cresson). Atlantic to 100° W. in Transit. and U. Austr. Zones.

Tryphon burgessi Cresson, 1868. Amer. Ent. Soc., Trans. 2: 105. ♂.

Tryphon burgessii Dalla Torre, 1901. Cat. Hym., v. 3, p. 293. Emend.

Phytodietus plesia Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 465. ♀.

californicus Cresson. Colo., Wash., Calif.

Phytodietus californicus Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 380. ♀.

clypearius Ashmead. Wyo., Alaska.

Phytodietus clypearius Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 195. ♂, ♀.

- Phytodietus flavifrons* Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 196. ♂.
- facialis* Rohwer. N. J., La., Tex. Host: *Acrobasis comptoniella* Hulst.
- Phytodietus facialis* Rohwer, 1920. U. S. Natl. Mus., Proc. 47: 462. ♀.
- fumiferanae* Rohwer. Wyo., Colo., Ariz., B. C., Oreg. Host: *Choristoneura lambertiana* (Bsk.), *C. occidentalis* Free.
- Phytodietus fumiferanae* Rohwer, 1922. Canad. Ent. 54: 155. ♂, ♀.
- parvus* Rohwer. Calif.
- Phytodietus parvus* Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 463. ♀.
- pleuralis* Cresson. Atlantic to Tex., Colo., Ariz. Host: *Acleris minuta* (Rob.).
- Phytodietus pleuralis* Cresson, 1865. Ent. Soc. Phila., Proc. 4: 266. ♂.
- Meniscus 4-cinctus* Ashmead, 1894. In Webster, Cincinnati Soc. Nat. Hist., Jour. 17: 50. ♂.
- Dr. C. C. Loan found the heretofore lost holotype among specimens he borrowed from the U. S. Natl. Museum and advised me of the present synonymy.
- segmentator* (Gravenhorst). Eurasia. Introduced in Ontario in 1956 for control of the native *Choristoneura fumiferana* (Clem.). Only a small number of individuals (35 males and 39 females) were released, which would seem to have precluded establishment.
- Phytodietus segmentator* Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 944. ♂, ♀.
- vulgaris* Cresson. Transcont. in Transit., Canad., Huds. Zones. Host: *Argyrotaenia pinatubana* (Kft.), *Archips argyrospilus* (Wlk.).
- Phytodietus vulgaris* Cresson, 1870. Amer. Ent. Soc., Trans. 3: 166. ♂, ♀.
- Mesoleius annulatus* Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 106. ♀.
- Preocc. by Brischke, 1871.

Biology: Fernald, 1891. Mass. Agr. Expt. Sta., Bul. 12: 9.

Genus NETELIA Gray

Until 1939 the generic name *Paniscus* Schrank (1801) was universally applied to the majority of species now placed in *Netelia*. The name *Paniscus* is now uniformly treated as an objective synonym of *Ophion*, thus reversal of this unfortunate change would cause more confusion than it would eliminate.

Members of this genus are nocturnal or crepuscular and are often attracted to lights. Because of similar habits and general appearance casual observers often confuse them with species of Ophioninae. *Netelia* females generally sting more painfully than those of Ophioninae, however.

Revision: Townes, 1939 (1938). Lloydia 1: 168-231.

Biology: Riley, 1869. Insects Mo., Ann. Rpt. 1: 89. —Cushman, 1913. Ent. Soc. Wash., Proc. 15: 155-157. —Vance, 1927. Ent. Soc. Amer., Ann. 20: 405-417. —Schaffner and Griswold, 1934. U. S. Dept. Agr., Misc. Pub. 188: 143-144.

Morphology: Whitmarsh, 1910. Ent. Soc. Amer., Ann. 3: 198, 204-208.

Genus NETELIA Subgenus PAROPHELTES Cameron

Paropheltes Cameron, 1907. Bombay Nat. Hist. Soc., Jour. 17: 1011.

Type-species: *Paropheltes flavolineatus* Cameron. Monotypic.

alaskensis (Ashmead). Alta., Wyo., Alaska.

Paniscus alaskensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 237. ♂.

albovariegata (Provancher). Que., N. Y., Ohio, Ill., S. Dak.

Paniscus albovariegatus Provancher, 1874. Nat. Canad. 6: 106. ♂.

barberi (Cushman). N. S. s. to D. C., w. to B. C., Wash.

Paniscus pallens var. *barberi* Cushman, 1924. U. S. Natl. Mus., Proc. 64: 40. ♀, ♂.

ciliata Townes. Calif.

Netelia (*Paropheltes*) *ciliata* Townes, 1939 (1938). Lloydia 1: 180. ♂.

laticeps Townes. Ariz.

Netelia (*Paropheltes*) *laticeps* Townes, 1939 (1938). Lloydia 1: 181. ♂.

macroglossa Townes. B. C., Nev.

Netelia (*Paropheltes*) *macroglossa* Townes, 1939 (1938). Lloydia 1: 179. ♂.

picta Townes. Nev.

Netelia (*Paropheltes*) *picta* Townes, 1939 (1938). *Lloydia* 1: 181. ♂.

radiata Townes. Kans., Ariz., Calif.

Netelia (*Paropheltes*) *radiata* Townes, 1939 (1938). *Lloydia* 1: 180. ♂.

rimata Townes. B. C., Calif.

Netelia (*Paropheltes*) *rimata* Townes, 1939 (1938). *Lloydia* 1: 180. ♂.

serrata Townes. N. Y., Ont., Iowa., S. Dak.

Netelia (*Paropheltes*) *serrata* Townes, 1939 (1938). *Lloydia* 1: 180. ♂.

tarsata (Brischke). N. S. s. to S. C., w. to Alta.; Eurasia.

Paniscus tarsatus Brischke, 1880. *Naturf. Gesell. Danzig, Schr.* 4 (4): 138. ♂, ♀.

Parabatus terebrator Ulbricht, 1922. *Konowia* 1: 181. ♂, ♀.

Genus NETELIA Subgenus PARABATES Foerster

Parabates Foerster, 1868. *Naturh. Ver. Rheinlande, Verh.* 25: 150.

Type-species: *Parabatus nigricarpus* Thomson. Designated by Enderlein (1912) from four species included by Thomson (1888).

Parabatus Thomson, 1888. *Opusc. Ent.* 12: 1194. Emend. See the discussion pertaining to the subgenus *Bessobates*.

Opheloideus Ashmead, 1900. U. S. Natl. Mus., *Proc.* 23: 95.

Type-species: *Opheloideus johnsoni* Ashmead. Monotypic and orig. desig.

This subgenus is small, having one Nearctic and one European species.

johnsoni (Ashmead). N. H., N. C., Tenn., B. C.

Ctenacme monticola Ashmead, 1900. *In* Slosson, *Ent. News* 11: 320. *Nomen nudum*.

Opheloideus johnsoni Ashmead, 1900. U. S. Natl. Mus., *Proc.* 23: 95. Sex not specified. No type specimen can be found in the U. S. Natl. Museum collection.

Opheloideus johnsonii Dalla Torre, 1901. *Cat. Hym.*, v. 3, p. 83. Emend.

Parabates monticola Cushman, 1922. U. S. Natl. Mus., *Proc.* 61 (8): 20. ♀.

Taxonomy: Townes, 1969. *Amer. Ent. Inst., Mem.* 11: 151.

Genus NETELIA Subgenus TOXOCHILUS Townes

Netelia subg. *Toxochilus* Townes, 1939 (1938). *Lloydia* 1: 182.

Type-species: *Paniscus clypeatus* Cushman. Orig. desig.

This subgenus is known only from the Nearctic Region.

caviverticilis (Cushman). Colo.

Paniscus caviverticilis Cushman, 1924. U. S. Natl. Mus., *Proc.* 64 (20): 29. ♀.

clypeata (Cushman). Va., W. Va., Ill., Iowa, S. Dak., Colo., N. Mex.

Paniscus clypeatus Cushman, 1924. U. S. Natl. Mus., *Proc.* 64 (20): 29. ♂.

glabra Townes. Kans.

Netelia (*Toxochilus*) *glabra* Townes, 1939 (1938). *Lloydia* 1: 183. ♂, ♀.

magniceps Townes. S. Dak., Mo., Kans., Colo., Ariz.

Netelia (*Toxochilus*) *magniceps* Townes, 1939 (1938). *Lloydia* 1: 184. ♂, ♀.

mystace Townes. Ariz.

Netelia (*Toxochilus*) *mystace* Townes, 1939 (1938). *Lloydia* 1: 184. ♂.

pulchra (Cushman). N. Mex.

Paniscus pulcher Cushman, 1924. U. S. Natl. Mus., *Proc.* 64 (20): 25. ♀, ♂.

ultima Townes. S. Dak., N. Mex.

Netelia (*Toxochilus*) *ultima* Townes, 1939 (1938). *Lloydia* 1: 183. ♂, ♀.

Genus NETELIA Subgenus PROSTHODOCIS Enderlein

Prosthodocis Enderlein, 1912. *Stettin. Ent. Ztg.* 73: 107, 141.

Type-species: *Paniscus antefurcalis* Szepligeti. Monotypic and orig. desig.

exserta (Cushman). R. I., N. Y. s. to Ala., w. to Mo.

Parabates exsertus Cushman, 1924. U. S. Natl. Mus., *Proc.* 64 (20): 47. ♀.

Genus NETELIA Subgenus NETELIA Gray

Netelia Gray, 1860. Ann. and Mag. Nat. Hist. 5 (3): 341.

Type-species: *Paniscus inquinatus* Gravenhorst. Monotypic and orig. desig.

Bucheckerius Schulz, 1906. Spolia Hym., p. 280.

Type-species: *Bucheckerius perforatus* Schulz. Monotypic.

Scammatonotum Enderlein, 1914. In Michaelsen, Beitr. z. Kennt. ... Fauna

Deut.-Sudwestafrikas, v. 1, p. 231.

Type-species: *Scammatonotum herero* Enderlein. Monotypic and orig. desig.

Amebachia Uchida, 1928. Hokkaido Imp. Univ., Fac. Agr., Jour. 21: 198.

Type-species: *Amebachia baibarana* Uchida. Orig. desig.

This subgenus includes three-fourths of the *Netelia* species, and they are distributed throughout the world.

acuminata Townes. Mass. s. to Ala., w. to Minn., s. Calif.

Netelia (*Netelia*) *acuminata* Townes, 1939 (1938). Lloydia 1: 206. ♂, ♀.

affinis Townes. Wash., Nev.

Netelia (*Netelia*) *affinis* Townes, 1939 (1938). Lloydia 1: 206. ♂.

blantoni Townes. R. I., N. Y., Pa., Va.

Netelia (*Netelia*) *blantoni* Townes, 1939 (1938). Lloydia 1: 214. ♂.

brevicornis brevicornis (Cushman). N. S. s. to Ala., w. to Mont., Tex.

Paniscus brevicornis Cushman, 1924. U. S. Natl. Mus., Proc. 64 (20): 27. ♂, ♀.

brevicornis suturalis Townes. Alta. s. to Utah, w. to B. C., Oreg.

Netelia (*Netelia*) *brevicornis suturalis* Townes, 1939 (1938). Lloydia 1: 201. ♂, ♀.

brevicornis temporalis (Cushman). Southwestern Calif.

Paniscus temporalis Cushman, 1924. U. S. Natl. Mus., Proc. 64 (20): 30. ♀.

brunnea Townes. N. Y., Pa., Md., Va.

Netelia (*Netelia*) *brunnea* Townes, 1939 (1938). Lloydia 1: 209. ♂.

californica (Cushman). Southern B. C. to s. Calif. The species has not been collected more than 80 miles from the Pacific Coast.

Paniscus californicus Cushman, 1924. U. S. Natl. Mus., Proc. 64 (20): 36. ♀.

calva Townes. Va.

Netelia (*Netelia*) *calva* Townes, 1939 (1938). Lloydia 1: 210. ♂.

cascadica Townes. Oreg.

Netelia (*Netelia*) *cascadica* Townes, 1939 (1938). Lloydia 1: 205. ♂.

caudata Townes. Va., Ill., Okla.

Netelia (*Netelia*) *caudata* Townes, 1939 (1938). Lloydia 1: 216. ♂.

chloris (Olivier). Que. s. to N. C., w. to Mont., Tex.

Ophion chloris Olivier, 1811. Encycl. Meth. Hist. Nat. Insectes, v. 8, p. 509. ♀.

Ophion geminatus Say, 1829. Contrib. Maclurian Lycium to Arts and Sci. 1: 76. Sex not stated.

Paniscus texanus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 425. ♀.

Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 111.

cockerelli (Cushman). N. Mex., Utah, Ariz., Calif.

Paniscus cockerelli Cushman, 1924. U. S. Natl. Mus., Proc. 64 (20): 35. ♀.

cushmani Townes. B. C.

Netelia (*Netelia*) *cushmani* Townes, 1939 (1938). Lloydia 1: 206. ♂.

delicata Townes. Que. s. to Ala., w. to Minn., Kans.

Netelia (*Netelia*) *delicata* Townes, 1939 (1938). Lloydia 1: 212. ♂, ♀.

densa Townes. N. Mex., Ariz.

Netelia (*Netelia*) *densa* Townes, 1939 (1938). Lloydia 1: 204. ♂.

emorsa Townes. Fla.; Bermuda, W. Indies. This species may prove to be a syn. of *subfusca* (Cresson), which was described from Cuba.

Netelia (*Netelia*) *emorsa* Townes, 1939 (1938). Lloydia 1: 197. ♂, ♀.

falcata Townes. Vt., N. Y., Pa.

Netelia (*Netelia*) *falcata* Townes, 1939 (1938). Lloydia 1: 210. ♂, ♀.

heroica Townes. N. Y., Mich., Minn., Ariz.; Mexico.

Netelia (*Netelia*) *heroica* Townes, 1939 (1938). *Lloydia* 1: 213. ♂.

idioctenus Townes. N. Y., Va., S. C., Ala.

Netelia (*Netelia*) *idioctenus* Townes, 1939 (1938). *Lloydia* 1: 198. ♀.

inepta Townes. N. J., N. C., S. C., Ga.

Netelia (*Netelia*) *inepta* Townes, 1939 (1938). *Lloydia* 1: 215. ♂.

ingrata Townes. Ariz.

Netelia (*Netelia*) *ingrata* Townes, 1939 (1938). *Lloydia* 1: 216. ♂.

lativectis Townes. N. Mex.

Netelia (*Netelia*) *lativectis* Townes, 1939 (1938). *Lloydia* 1: 212. ♂.

leo arizonensis (Cushman). N. Mex., Ariz., s. Calif.; Mexico.

Paniscus arizonensis Cushman, 1924. U. S. Natl. Mus., Proc. 64 (20): 37. ♀.

leo leo (Cushman). Mass. s. to Ga., w. to Iowa, Tex.

Paniscus leo Cushman, 1924. U. S. Natl. Mus., Proc. 64 (20): 38. ♀.

ligata Townes. Ariz.

Netelia (*Netelia*) *ligata* Townes, 1939 (1938). *Lloydia* 1: 205. ♂.

lucens Townes. Colo.

Netelia (*Netelia*) *lucens* Townes, 1939 (1938). *Lloydia* 1: 205. ♂, ♀.

macra Townes. Md., Va., Ill., Ariz.; W. Indies, Peru, Argentina.

Netelia (*Netelia*) *macra* Townes, 1939 (1938). *Lloydia* 1: 196. ♂.

microdon Townes. Va., S. C., Fla., Ala., Miss., Tex.

Netelia (*Netelia*) *microdon* Townes, 1939 (1938). *Lloydia* 1: 211. ♂, ♀.

microtylus Townes. Ariz.

Netelia (*Netelia*) *microtylus* Townes, 1939 (1938). *Lloydia* 1: 210. ♂, ♀.

mustela Townes. Ariz.

Netelia (*Netelia*) *mustela* Townes, 1939 (1938). *Lloydia* 1: 194. ♂, ♀.

nigripectus (Ashmead). Tex.

Paniscus nigripectus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 425. ♀.

nitida Townes. N. Y.

Netelia (*Netelia*) *nitida* Townes, 1939 (1938). *Lloydia* 1: 215. ♂.

obrepta Townes. Pa., Mich.

Netelia (*Netelia*) *obrepta* Townes, 1939 (1938). *Lloydia* 1: 215. ♂.

ocellata (Viereck). D. C. s. to Ga., w. to Sask., Ariz.; Bermuda, Peru. Host: *Agrotis orthogonia* Morr.

Paniscus ocellatus Viereck, 1909. Ent. Soc. Wash., Proc. 11: 211. ♂, ♀.

Paniscus immaculatus Morley, 1913. Rev. Ichn. Brit. Mus., v. 2, p. 109. ♀.

Paniscus ocellatus var. *microocellatus* Cushman, 1924. U. S. Natl. Mus., Proc. 64 (20): 36. ♂, ♀.

orba Townes. D. C., S. C.

Netelia (*Netelia*) *orba* Townes, 1939 (1938). *Lloydia* 1: 193. ♂.

ovalis Townes. R. I. s. to D. C., w. to Wis., Kans.

Netelia (*Netelia*) *ovalis* Townes, 1939 (1938). *Lloydia* 1: 212. ♂.

pallens occidentalis Townes. Tex., N. Mex., Ariz., B. C., Nev.

Netelia (*Netelia*) *pallens occidentalis* Townes, 1939 (1938). *Lloydia* 1: 208. ♂, ♀.

pallens pallens (Cushman). Atlantic States from N. Y. s. to Ga.

Paniscus pallens Cushman, 1924. U. S. Natl. Mus., Proc. 64 (20): 39. ♂, ♀.

palpalis Townes. Maine, Mass., N. Y., N. C.

Netelia (*Netelia*) *palpalis* Townes, 1939 (1938). *Lloydia* 1: 203. ♂.

pardalis (Cushman). Wyo. s. to N. Mex. w. to B. C., Calif.

Paniscus pardalis Cushman, 1924. U. S. Natl. Mus., Proc. 64 (20): 31. ♂.

Paniscus neomexicanus Cushman, 1924. U. S. Natl. Mus., Proc. 64 (20): 33. ♀.

percurrans Townes. Colo.

Netelia (*Netelia*) *percurrans* Townes, 1939 (1938). *Lloydia* 1: 207. ♂.

- platypes** (Cushman). Mass. s. to Ala., s. to Wis. Host: *Acrionicta radcliffei* (Harv.).
Paniscus platypes Cushman, 1930 (1929). U. S. Natl. Mus., Proc. 76 (25): 6. ♀.
- pluridens** Townes. Wyo.
Netelia (Netelia) pluridens Townes, 1939 (1938). Lloydia 1: 202. ♂.
- punctata** Townes. Conn. s. to Va., w. to Mich., Tex.
Netelia (Netelia) punctata Townes, 1939 (1938). Lloydia 1: 208. ♂, ♀.
- recta** Townes. Ariz.
Netelia (Netelia) recta Townes, 1939 (1938). Lloydia 1: 193. ♂, ♀.
- rectifascia** Townes. Ariz.
Netelia (Netelia) rectifascia Townes, 1939 (1938). Lloydia 1: 216. ♂.
- reflexa** Townes. Tex.
Netelia (Netelia) reflexa Townes, 1939 (1938). Lloydia 1: 198. ♂.
- sayi** (Cushman). Que. s. to N. C., w. to S. Dak., Tex. Host: *Amathes badinodis* (Grt.), *Heliothis zea* (Bod.). This is the commonest species of the genus in the northeastern U. S.; it occurs throughout the summer and autumn.
Paniscus germinatus var. *sayi* Cushman, 1924. U. S. Natl. Mus., Proc. 64 (20): 41. ♂, ♀.
 Biology: Vance, 1927. Ent. Soc. Amer., Ann. 20: 405-415.
- spinipes** (Cushman). Mass. s. to Ga., w. to Mont., Tex.; Mexico. Host: *Heliothis zea* (Bod.).
Paniscus spinipes Cushman, 1924. U. S. Natl. Mus., Proc. 64 (20): 32. ♂, ♀.
 Biology: Vance, 1927. Ent. Soc. Amer., Ann. 20: 405-417.
- stigmata** Townes. N. Y., N. J.
Netelia (Netelia) stigmata Townes, 1939 (1938). Lloydia 1: 202. ♂, ♀.
- strigilobus** Townes. Calif. Host: *Zale lunata* (Drury).
Netelia (Netelia) strigilobus Townes, 1939 (1938). Lloydia 1: 207. ♂, ♀.
 Biology: Hicks, 1933. Pan-Pacific Ent. 9: 49-52 (as *Paniscus* sp., possibly *semirufus* Holmgren).
- townesi** (Uchida). Calif.
Netelia (Netelia) unicolor Townes, 1939 (1938). Lloydia 1: 202. Preocc. in *Netelia* by Smith, 1874.
Paniscus townesi Uchida, 1939. Insecta Matsumurana 14: 45. N. name for *unicolor* Townes.
- townsendi** (Cushman). N. Mex.
Paniscus townsendi Cushman, 1924. U. S. Natl. Mus., Proc. 64 (20): 40. ♀.
- trituberculata** (Cushman). Ariz., Calif.
Paniscus trituberculatus Cushman, 1924. U. S. Natl. Mus., Proc. 64 (20): 26. ♀.
- turbans** Townes. Ariz., Colo.
Netelia (Netelia) turbans Townes, 1939 (1938). Lloydia 1: 209. ♂.
- umbone** Townes. Calif.
Netelia (Netelia) umbone Townes, 1939 (1938). Lloydia 1: 207. ♂.
- unguicularis** (Cushman). R. I. s. to N. C., w. to Ill., Ala. Ecology: This species occurs in moist bottomland forests.
Paniscus unguicularis Cushman, 1924. U. S. Natl. Mus., Proc. 64 (20): 33. ♂, ♀.

Genus NETELIA Subgenus BESSOBATES Townes

Netelia subg. *Bessobates* Townes, 1961. In Townes, Townes, and Gupta; Amer. Ent. Inst., Mem. 1: 93.

Type-species: *Parabatus deceptor* Morley. Orig. desig.

Because of careless bibliographic work, Bradley (1919) managed to find reason for applying the names *Parabates* Foerster and *Parabatus* Thomson to separate subgenera, the latter to what is now called *Bessobates*. It is evident that Bradley would not have wished to find reason for doing so if he had been aware of Enderlein's (1912) designation of *Parabatus nigricarpus* Thomson as the type-species of *Parabates*. Ironically, it is also quite obvious that if Viereck (1914) had been aware of the Enderlein designation for *parabates*, he would also have

designated *nigricarpus* as the type-species of *Parabatus*, which would have prevented subsequent authors from applying these names to separate subgenera of *Netelia*, as did Townes for more than 20 years (1939 to 1961). Apparently recognizing that it was no longer feasible to treat some of the Thomson emendations of Foerster names as having been newly proposed for separate taxa, Townes (1961) abandoned his earlier stance on the issue with the proposal of *Bessobates* as a "new name for *Parabatus* as defined by Townes, 1939." Not only does it seem incorrect for Townes to have characterized his proposal of *Bessobates* in those terms, it is paradoxical for him to have done so without a word calling attention to or explaining his designation of *Parabatus deceptor* Morley as type-species instead of *Ichneumon virgatus* Geoffroy. Townes (1969) attributes the name *Bessobates* to Townes, Townes, and Gupta, but the wording of the proposal (yet alone the 1939 description) is clearly in the unadulterated style of the senior author, and it seems inappropriate for him to place part of the blame for it upon the junior authors.

Taxonomy: Enderlein, 1912. Stettin. Ent. Ztg. 73: 106. —Viereck, 1914. U. S. Natl. Mus., Bul. 83: 110. —Bradley, 1919. Ann. and Mag. Nat. Hist. (9) 3: 319-324. —Townes, 1969. Amer. Ent. Inst., Mem. 11: 154.

deceptor (Morley). N. S. s. to Pa., w. to Alaska, Calif. Host: *Schizura concinna* (J. E. S.), *Polia legitima* (Grt.).

Parabatus deceptor Morley, 1913. Rev. Ichn. Brit. Mus., v. 2, p. 129. ♂.

Parabates cristatoides Cushman, 1924. U. S. Natl. Mus., Proc. 64 (20): 46. ♂, ♀.

Parabates crassus Cushman, 1924. U. S. Natl. Mus., Proc. 64 (20): 47. ♀. Uncertain syn.

latungula (Thomson). Que. s. to Va., w. to Ont., Ill.; Eurasia.

Parabatus latungula Thomson, 1888. Opusc. Ent. 12: 1196. ♂, ♀.

longipalpus Townes. Que. s. to Ala., w. to Mich., Ill.

Parabatus smithi Cushman, 1924. U. S. Natl. Mus., Proc. 64 (20): 45. ♀. Preocc. in *Netelia* by Dalla Torre (1902).

Netelia (Parabatus) longipalpus Townes, 1939 (1938). Lloydia 1: 218. N. name for *smithi* Cushman.

rogersi Townes. N. Y., Pa., Md., Va., N. C.

Netelia (Parabatus) rogersi Townes, 1939 (1938). Lloydia 1: 219. ♂, ♀.

sinus Townes. Md., Va., Ill.; Guatemala.

Netelia (Parabatus) sinus Townes, 1939 (1938). Lloydia 1: 220. ♂.

uncata Townes. D. C., S. C.

Netelia (Parabatus) uncata Townes, 1939 (1938). Lloydia 1: 218. ♂, ♀.

UNPLACED TAXON OF NETELIA

appendiculata (Provancher). Que.

Paniscus appendiculatus Provancher, 1874. Nat. Canad. 6: 105. ♂. According to Barron (1975) the holotype is lost.

Taxonomy: Townes, 1939 (1938). Lloydia 1: 222. —Barron, 1975. Nat. Canad. 102: 427-428.

TRIBE OEDEMOPSINI

This is a small tribe with nine genera, seven of which are represented by species in the Nearctic Region. Most of the species are apparently parasitic upon larvae of Lepidoptera, but *Eclytus* spp. parasitize sawfly larvae.

The names *Thymarides* (Thomson, 1883) and *Eclytini* (Townes, 1945) are junior synonyms of *Oedemopsini* (Woldstedt, 1877).

Taxonomy: Townes and Townes, 1945. Bol. Ent. Venezolana 4: 41-53 (out of date generic revision with keys for Neotropical species).

Genus ECLYTUS Holmgren

Eclytus Holmgren, 1857 (1855). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 127.

Type-species: *Eclytus ornatus* Holmgren. Desig. by Viereck, 1912.

Zapedias Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 206.

Type-species: *Mesoleptus exornatus* Gravenhorst. Included and desig. by Townes, Momoi, and Townes, 1965.

Anoplectes Kriechbaumer, 1896. Ent. Nachr. 23: 363.

Type-species: *Anoplectes multicolor* Kriechbaumer. Monotypic.

ornatus Holmgren. Newfoundland (Labrador) s. to N. C., w. to Alaska, Colo.; Europe.

Eclytus ornatus Holmgren, 1857 (1855). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 127. ♂, ♀.

Eclytus perennis Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 305. ♂, ♀.

Spanotecnus flavopictus Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 204. ♂.

Genus HERCUS Townes

Hercus Townes, 1969. Amer. Ent. Inst., Mem. 11: 157.

Type-species: *Orthocentrus pleuralis* Provancher. Orig. desig. There are three Nearctic species, one of them undescribed.

fontinalis (Holmgren). Alaska; Europe.

Eclytus fontinalis Holmgren, 1857 (1855). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 128. ♂, ♀.

Eclytus yakutatensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 204. ♂.

Himertosoma schmiedeknechti Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 194. ♂.

pleuralis (Provancher). N. S. s. to Va., w. to S. Dak. Host: *Argyrotaenia pinatubana* (Kft.), *A. velutinana* (Wlk.), *Platynota idaeusalis* (Wlk.) *Acrobasis kearfottella* Dyar.

Orthocentrus pleuralis Provancher, 1875. Nat. Canad. 7: 328. ♀. The syntypes were not located by Barron (1975).

Calliphururus? taeniogaster Viereck, 1912. U. S. Natl. Mus., Proc. 43: 585. ♂.

Taxonomy: Barron, 1975. Nat. Canad. 102: 533.

Genus NELIOPISTHUS Thomson

Neliopisthus Thomson, 1883. Opusc. Ent. 9: 907.

Type-species: *Phytodietus elegans* Ruthe. Monotypic.

Polysphinctomorpha Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 59.

Type-species: *Polysphinctomorpha luggeri* Ashmead. Orig. desig.

Revision: Cushman, 1919. U. S. Natl. Mus., Proc. 56: 378-381. —Cushman, 1935. Wash. Acad. Sci., Jour. 25: 553-555.

densatus (Say). Maine s. to Md., w. to S. Dak., Ariz.

Anomalon densatus Say, 1836. Boston Jour. Nat. Hist. 1: 243. ♀.

Neliopisthus similis Cushman, 1919. U. S. Natl. Mus., Proc. 56: 379. ♀.

Taxonomy: Cushman and Gahan, 1921. Ent. Soc. Wash., Proc. 23: 155.

niger Cushman. Colo., Idaho, Ariz., Wash.

Neliopisthus niger Cushman, 1922. U. S. Natl. Mus., Proc. 60 (21): 12. ♀.

Neliopisthus longicauda Cushman, 1935. Wash. Acad. Sci., Jour. 25: 554. ♀.

piceae Cushman. Maine, Minn., Oreg. Host: *Coleotechnites piceaella* (Kft.).

Neliopisthus piceae Cushman, 1935. Wash. Acad. Sci., Jour. 25: 555. ♂, ♀.

semirufus (Provancher). Que. s. to Va., w. to Minn. Host: *Psilocorsis* sp.

Hemiteles semirufus Provancher, 1874. Nat. Canad. 6: 332. ♀.

Polysphincta erythropleura Ashmead, 1896; 1902. In Slosson, Ent. News 7: 264; 13: 321.

Nomen nudum.

Polysphinctomorpha luggeri Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 59. ♀.

Neliopisthus nigradorsum Cushman, 1919. U. S. Natl. Mus., Proc. 56: 379. ♀.

Genus THYMARIS Foerster

Thymaris Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 151.

Type-species: *Thymaris pulchricornis* Brischke. By subsequent monotypy from inclusion by Brischke, 1880. The Brischke types have been destroyed, and the interpretation of *pulchricornis* is based upon Pfankuch's (1906) placement of it as a synonym of *Mesoleptus tener* Gravenhorst (1829). Pfankuch later (1925) placed

pulchricornis as a synonym of *Hemiteles contaminatus* Gravenhorst (1829), and Perkins (1962) treated *contaminatus* as a junior synonym of *tener* by virtue of page priority but did not state that he had examined the Gravenhorst types in question.

Thymarus Thomson, 1883. Opusc. Ent. 9: 908. Emend.

Townes (1969) says that there are two Nearctic species, one of them undescribed.

Taxonomy: Pfankuch, 1906. Ztschr. System. Hym. Dipt. 6: 82. — Pfankuch, 1925. Deut. Ent. Ztschr. 4: 260. — Perkins, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 11: 458. — Townes, 1969. Amer. Ent. Inst., Mem. 11: 158-159.

negligere (Davis). N. J. s. to Ala., w. to Kans.

Eusterinx negligere Davis, 1897. Amer. Ent. Soc., Trans. 24: 246. ♀.

Callidiotus kansensis Brues, 1907. Wis. Nat. Hist. Soc., Bul. 5: 55. ♀.

Thymarus americanus Cushman, 1919. U. S. Natl. Mus., Proc. 56: 381. ♂, ♀.

Genus ZAGRYPHUS Cushman

Zagryphus Cushman, 1919. U. S. Natl. Mus., Proc. 56: 377.

Type-species: *Mesoleptus nasutus* Cresson. Monotypic and orig. desig.

The name *Campothreptus* Foerster has been erroneously applied to this genus by Townes (e. g. 1969) who has treated *Mesoleptus nasutus* Cresson as its type-species. Cushman (1919) correctly argued that it was *Tryphon nasutus* Cresson and not *Mesoleptus nasutus* that Davis (1897) placed in *Campothreptus*. Therefore, *Campothreptus* is a synonym of *Oedemopsis* (which see).

Taxonomy: Davis, 1897. Amer. Ent. Soc., Trans. 24: 247. — Cushman, 1919. U. S. Natl. Mus., Proc. 56: 376-378. — Townes, 1969. Amer. Ent. Inst., Mem. 11: 159.

nasutus (Cresson). Pa. s. to Fla., w. to Minn. and Kans.; Mexico, Guatemala.

Mesoleptus? nasutus Cresson, 1868. Amer. Ent. Soc., Trans. 2: 103. ♂, ♀. The variant spelling "*nastutus*" appears on p. 103, but it is anonymously rejected in the errata (p. 398 [1869]).

Synchnoleter americanus Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 196. ♂.

Genus OEDEMOPSIS Tschek

Oedemopsis Tschek, 1868. Zool.-Bot. Gesell. Wien, Verh. 18: 276.

Type-species: *Oedemopsis rogenhoferi* Tschek. Monotypic. The type-species is considered to be a synonym of *O. scabricularis* (Gravenhorst).

Hybophanes Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 166.

Type-species: *Tryphon scabricularis* Gravenhorst. Desig. by Viereck, 1914 from three species included by Schmiedeknecht, 1888.

Campothreptus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 201. N. syn.

Type-species: *Tryphon nasutus* Cresson. By subsequent monotypy from inclusion by Davis, 1897. Although Davis (1897) treated *Tryphon? nasutus* Cresson as a synonym of *Mesoleptus nasutus* Cresson, his description applies only to the former (see discussion under *Zagryphus*). Davis' error in suppressing *Tryphon nasutus* as a synonym of *Mesoleptus nasutus* could only have been inadvertent — i.e. I do not see how it is possible that Davis' error could have been an error of judgement and hence do not believe that it is reasonable to argue that he misidentified *Tryphon nasutus* as *Mesoleptus nasutus*.

Zarhynchus Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 59. Preocc. by Oberholser, 1899.

Type-species: *Tryphon nasutus* Cresson. Monotypic and orig. desig.

Rhynchothyreus Ashmead, 1900. Canad. Ent. 32: 368. N. name for *Zarhynchus* Ashmead.

Oedematopsis Morley, 1908. Brit. Ichn. 3: 268. Emend. of *Oedemopsis*.

Details regarding my resurrection of the name *Oedemopsis* and its priority over *Hybophanes* will be given elsewhere.

davisi Carlson, n. name. Conn. s. to Va., w. to B. C., N. Mex.

Tryphon? nasutus Cresson, 1868. Amer. Ent. Soc., Trans. 2: 107. ♀. Preocc. by Gravenhorst, 1829.

Genus ATOPOTROPHOS Cushman

Atopognathus Cushman, 1919. Ent. Soc. Wash., Proc. 21: 116. Preocc. by Bigot, 1881.

Type-species: *Atopognathus collaris* Cushman. Monotypic and orig. desig.

Atopotrophos Cushman, 1940. U. S. Natl. Mus., Proc. 88: 365. N. name for *Atopognathus* Cushman.

There are two Nearctic species, one undescribed.

bucephalus (Cresson). Md., D. C., Va., N. C., Ala.; Mexico.

Mesoleptus? *bucephalus* Cresson, 1868. Amer. Ent. Soc., Trans. 2: 36. ♂.

Atopognathus collaris Cushman, 1919. Ent. Soc. Wash., Proc. 21: 117. ♂, ♀.

TRIBE TRYPHONINI

Nearly all members of this tribe are parasites of sawflies; *Grypocentrus basalis* Ruthe, a European species, has been reared from an eriocraniid microlepidopteran. Most of the genera are Holarctic.

Revision: Townes and Townes, 1949-1950 (1949). Ent. Soc. Amer., Ann. 42 (3 and 4): 321-396, 397-447 (*Grypocentrus* and *Boethus* excluded). —Kasparyan, 1973. Akad. Nauk, SSSR, Zool. Inst., Fauna SSSR, (n. s.) 106, Hym. v. 3, pt. 1, 320 pp.

Genus GRYPOCENTRUS Ruthe

Grypocentrus Ruthe, 1855. Stettin. Ent. Ztg. 16: 52.

Type-species: *Grypocentrus incisulus* Ruthe. Desig. by Vierick, 1912.

Apimeles Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 205.

Type-species: *Apimeles lusorius* Davis. By subsequent monotypy from inclusion by Davis, 1898 (1897).

Cyrtocentrus Provancher, 1883. Nat. Canad. 14: 6.

Type-species: *Cyrtocentrus quebecensis* Provancher. Monotypic.

Some members of this genus are known to parasitize larvae of *Fenusa* spp., but one European species, *G. basalis* Ruthe, has been reared from an eriocraniid microlepidopteran.

Revision: Townes and Townes, 1951. Ent. Soc. Wash., Proc. 53: 301-307.

albipes Ruthe. Europe. Introduced in insular Newfoundland in 1973, but no recoveries have been reported. Host: *Fenusa pusilla* (Lep.). The host listed was the target species for the release in Newfoundland.

Grypocentrus albipes Ruthe, 1855. Stettin. Ent. Ztg. 16: 56. ♂, ♀.

barbatus Townes. Alta., Calif.

Grypocentrus barbatus Townes, 1951. In Townes and Townes, Ent. Soc. Wash., Proc. 53: 304. ♂, ♀.

crassidens Townes. Idaho, Colo.

Grypocentrus crassidens Townes, 1951. In Townes and Townes, Ent. Soc. Wash., Proc. 53: 304. ♂, ♀.

flavipes (Provancher). Que. s. to N. C., w. to Wash., Calif.

Mesostenus flavipes Provancher, 1882. Nat. Canad. 13: 363. ♂.

Cyrtocentrus Quebecensis Provancher, 1883. Nat. Canad. 14: 6. ♂.

Apimeles lusorius Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 283. ♀.

spatulatus Townes. Calif.

Grypocentrus spatulatus Townes, 1951. In Townes and Townes, Ent. Soc. Wash., Proc. 53: 305. ♂, ♀.

truncatus Townes. N. Y.

Grypocentrus truncatus Townes, 1951. In Townes and Townes, Ent. Soc. Wash., Proc. 53: 305. ♂, ♀.

Genus POLYBLASTUS Hartig

Revision: Kasparyan, 1970. Ent. Obozr. 49: 852-868; 519-528 in Ent. Rev. (Palearctic spp.).

Genus POLYBLASTUS Subgenus POLYBLASTUS Hartig

Polyblastus Hartig, 1837. Arch. f. Naturgesch. 3: 155.

Type-species: *Tryphon varitarsus* Gravenhorst. Desig. by Viereck, 1912.

atrox Townes. Que.

Polyblastus (Polyblastus) atrox Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 335. ♂.

carbonarius (Gravenhorst). N. H., Alta.; Europe.

Tryphon carbonarius Gravenhorst, 1829. Ichn. Europaea 2: 141. ♂.

fulvilinealis Hall. Que. s. to N. C.

Polyblastus fulvilinealis Hall, 1919. Psyche 26: 155. ♂, ♀.

palaemon Schiodte. Man., Alta.; Europe.

Polyblastus palaemon Schiodte, 1839 (1838). Rev. Zool. Soc. Cuv. 1: 140. ♀.

Polyblastus pyramidatus Holmgren, 1857 (1855). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 219. ♀.

pedalis (Cresson). N. S. s. to N. C., w. to N. W. T., B. C., Calif.; U. S. S. R. Host: *Cladiis difformis* (Panzer), *Croesus latitarsus* Nort., *Apareophora dyari* (Benson).

Tryphon pedalis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 273. ♂.

Bassus Bouleti Provancher, 1874. Nat. Canad. 6: 32. ♀.

tibialis (Cresson). Que. s. to N. C., w. to N. W. T., B. C., Calif.

Tryphon tibialis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 280. "♂" = ♀.

Tryphon annulipes Cresson, 1868. Amer. Ent. Soc., Trans. 2: 108. ♀.

Prinopoda (!) media Hall, 1919. Psyche 26: 158. ♀.

varitarsus (Gravenhorst). Que. s. to Mass., w. to Alaska, Calif.; Eurasia. Host: *Dolerus* sp. The name "*strobilator* (Thunberg)" has been incorrectly used for this species; *Ichneumon strobilator* Thunberg is an emendation and misidentification of *Ichneumon strobilellae* Linnaeus.

Tryphon varitarsus Gravenhorst, 1829. Ichn. Europaea 2: 222. ♂, ♀.

Polyblastus subtilis Thomson, 1883. Opusc. Ent. 9: 900. ♀.

Polyblastus varitarsus Dalla Torre, 1901. Cat. Hym., v. 3, p. 320. Emend.

Errormenus annulipes Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 212. ♀.

wahlbergi rubescens Townes. N. S. w. to Alaska, w. to Pa., Ala., Sask., Alta. *P. (P.) wahlbergi wahlbergi* Holmgren is Eurasian.

Polyblastus (Polyblastus) wahlbergi rubescens Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 336. ♂, ♀.

Genus POLYBLASTUS Subgenus COPENCHUS Townes

Polyblastus subg. *Cophenchus* Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 338.

Type-species: *Polyblastus (Cophenchus) flexus* Townes. Orig. desig.

botrys Townes. Que., N. H., Mass., Mich., Man.

Polyblastus (Cophenchus) botrys Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 339. ♂, ♀.

flexus Townes. Que., Alta., Utah, B. C.

Polyblastus (Cophenchus) flexus Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 339. ♀.

Genus POLYBLASTUS Subgenus LABROCTONUS Foerster

Labroctonus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 195.

Type-species: *Tryphon articulatus* Cresson. By subsequent monotypy from inclusion by Davis, 1897.

Nemioblastus Thomson, 1883. Opusc. Ent. 9: 901.

Type-species: *Polyblastus albicoxa* Thomson. Desig. by Viereck, 1914.

alatus Townes. N. Y., Pa., Md., D. C., Va.

Polyblastus (Labroctonus) alatus Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 345. ♂, ♀.

articulatus (Cresson). Man., Alta.

Tryphon articulatus Cresson, 1868. Amer. Ent. Soc., Trans. 2: 110. ♀.

bimacula Townes. Maine s. to N. C., w. to B. C., Wash.

Polyblastus (Labroctonus) bimacula Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 343, 396. ♂, ♀.

buccatus Townes. Wash., Calif.

Polyblastus (Labroctonus) buccatus Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 349. ♂, ♀.

expletus Townes. Newfoundland (Labrador), Que., Maine, Vt., N. Y., Colo. Host: *Nematus limbatus* Cr.

Polyblastus (Labroctonus) expletus Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 349. ♂, ♀.

galaphilus Townes. Que. s. to N. Y., w. to Wash., Oreg.

Polyblastus (Labroctonus) galaphilus Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 347. ♂, ♀.

gloriosus (Davis). Que., Wash., Oreg., Calif.

Phaestus gloriosus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 292. ♀.

jugatus Townes. N. H.

Polyblastus (Labroctonus) jugatus Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 342. ♂.

peckae Townes. N. H.

Polyblastus (Labroctonus) peckae Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 348. ♀.

productus Townes. Wash.

Polyblastus (Labroctonus) productus Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 345. ♂, ♀.

provancheri Kasparyan. N. S. s. to Conn., w. to B. C., Calif. Host: *Pontania* sp., *Pristiphora sycophanta* Walsh.

Tryphon dorsalis Provancher, 1879. Nat. Canad. 11: 253. ♀. Preocc. by Gravenhorst, 1829. *Polyblastus (Labroctonus) provancheri* Kasparyan, 1970. Ent. Obozr. 49: 853. N. name for *dorsalis* Provancher.

rutilus Townes. Calif.

Polyblastus (Labroctonus) rutilus Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 344. ♂, ♀.

stenocentrus Holmgren. Colo., Alaska; Eurasia.

Polyblastus stenocentrus Holmgren, 1957 (1855). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 215. ♂, ♀.

Genus CTENOCHIRA Foerster

Ctenochira Foerster, 1855. Naturh. Ver. Rheinlande, Verh. 12: 226.

Type-species: *Ctenochira bisinuata* Foerster. Monotypic.

Ctenacme Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 196.

Type-species: *Polyblastus scutellaris* Thomson. Desig. by Morley, 1913 (as *scutellatus* Thomson [1888], which replaced the preoccupied *scutellaris* Thomson [1883] from four species species included by Thomson, 1883.

Scopiorhus Foerster, 1868. Naturh. Ver. Reinlande, Verh. 25: 196.

Type-species: *Polyblastus marginatus* Holmgren. Desig. by Viereck, 1914 from four species included by Thomson, 1883.

Gemophaga Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 211.

Type-species: *Gemophaga rufa* Ashmead. By subsequent monotypy from inclusion by Ashmead, 1902.

Ctenacmus Thomson, 1883. Opusc. Ent. 9: 901. Emend.

Ctenacma Schulz, 1906. Spolia Hym., p. 99. Emend. of *Ctenacme*.

Pauroctenus Cameron, 1909. Bombay Nat. Hist. Soc., Jour. 19: 726.

Type-species: *Pauroctenus pallipes* Cameron. Monotypic.

Exochoblastus Schmiedeknecht, 1912. Opusc. Ichtn., v. 5, p. 2401, 2468.

- Type-species: *Exochoblastus oreophilus* Schmiedeknecht. Monotypic.
Scopimenus Roman, 1937. Ent. Monthly Mag. 74: 64.
 Type-species: *Scopimenus pygobarbus* Roman. Monotypic.
Coeloprosopon Bauer, 1958. Beitr. z. Ent. 8: 181.
 Type-species: *Coeloprosopon pectinatum* Bauer. Monotypic.
- adepts** Townes. N. Y.
Ctenochira adepts Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 356. ♀.
- analis** (Cresson). Maine s. to N. C., w. to Oreg.
Tryphon analis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 279. ♂.
Tryphon occidentalis Cresson, 1868. Amer. Ent. Soc., Trans. 2: 109. ♀.
- debilis** Townes. Colo., Alta., Mont., Wash.
Ctenochira debilis Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 354. ♂, ♀.
- deplanata** Townes. Mich., Colo.
Ctenochira deplanata Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 372. ♂, ♀.
- dilatata** (Provancher). Que. See discussion of *Ctenochira niveicola* (Ashmead).
Catocentrus dilatatus Provancher, 1875. Nat. Canad. 7: 316. "♂" = ♀.
- Taxonomy: Barron, 1975. Nat. Canad. 102: 461-462.
- extricata** (Davis). Colo., Alta., Wash., Oreg.
Scopiorus extricatus Davis, 1897. Amer. Ent. Soc., Trans. 24: 259. ♀.
- ferrugata** Townes. Wash.
Ctenochira ferrugata Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 370. ♀.
- frigida** (Cresson). Mich., Man., N. W. T., s. to Colo., w. to Alaska, Oreg. Host: *Nematus oligospilus* Foerster.
Bassus frigidus Cresson, 1868. Amer. Ent. Soc., Trans. 2: 111. ♀.
- gagates** Townes. Sask. w. to S. Dak., Colo., w. to Alaska, Wash.
Ctenochira gagates Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 359. ♂, ♀.
- gillettei** (Davis). Que. s. to Pa., w. to Colo., Alta., Oreg.
Scopiorus gillettei Davis, 1897. Amer. Ent. Soc., Trans. 24: 258. ♀.
Scopiorus expansa Davis, 1897. Amer. Ent. Soc., Trans. 24: 258. ♂.
Polyblastus scopioroides Hall, 1919. Psyche 26: 156. ♀.
- infans** Townes. Man., Colo., Alaska.
Ctenochira infans Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 366. ♂, ♀.
- inflata** Townes. N. Y.
Ctenochira inflata Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 363. ♀.
- melina** Townes. Que., Sask.
Polyblastus annulicornis Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 108.
 "♀" = ♂. Preocc. by Giraud, 1871.
Ctenochira melina Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 358.
 N. name for *annulicornis* Provancher.
- niveicola** (Ashmead), revised status. Que. w. to s.e. Alaska, s. to D. C., w. N. C., s. Alta., and n. Calif. In their tribal revision, Townes and Townes (1949) treated *niveicola* as a subspecies of *dilatata* (Provancher) (which see). However, Dr. H. K. Townes said (personal commun., 1976) that Townes and Townes (1949) based their treatment on the "lectotype" selected by Gahan and Rohwer (1918). Barron (1975) rejected the Gahan and Rohwer "lectotype" in favor of the specimen which he regarded as the holotype. According to Barron, the latter specimen does not agree with *dilatata dilatata* (Provancher) sensu Townes and Townes (1949). Therefore, *niveicola* is here raised to species status; its distribution is a composite of the distributions of the two subspecies of *dilatata* sensu Townes and Townes (1949).
Scopiorus(!) *alaskensis* Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 214. ♀.

Scorpiorus(!) *niveicola* Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 214. ♂, ♀.

Scopiorus plagosus Hall, 1919. Psyche 26: 159. ♀.

Taxonomy: Gahan and Rohwer, 1918. Canad. Ent. 50: 168. —Barron, 1975. Nat. Canad. 102: 461-462.

pectoralis Townes. Que., Ont., N. C.

Ctenochira pectoralis Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 364. ♂, ♀.

picta Townes. N. Y., N. C., B. C., Wash.

Ctenochira picta Townes, 1949. Ent. Soc. Amer., Ann. 42: 370. ♀.

pikonematis Townes. Newfoundland (insular), Que., Mich., Oreg. Host: *Pikonema alaskensis* (Roh.), *P. dimmockii* (Cr.).

Ctenochira pikonematis Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 365. ♂, ♀.

potens Townes. Alaska, B. C.

Ctenochira potens Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 364. ♀.

quebecensis (Provancher). Que., Mass., Ont., Kans., Colo. Host: *Nematus limbatus* Cr., *N. ventralis* Say.

Euceros quebecensis Provancher, 1874. Nat. Canad. 6: 30. ♀.

Tryphon flavifrons Fyles, 1893. Canad. Ent. 25: 107. ♀.

Scopiorus monticola Brues, 1907. Wis. Nat. Hist. Soc., Bul. 5: 56. ♀.

rubicunda Townes. N. B.

Ctenochira rubicunda Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 369. ♀.

rufa (Ashmead). N. H. s. to Pa., w. to Colo., Alaska, Wash.

Trophoctonus insularis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 215. ♂.

Gemophaga rufa Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 223. ♂.

subcrassa (Cresson). Mass., N. Y., N. J., Alta., B. C., Oreg.

Tryphon subcrassus Cresson, 1868. Amer. Ent. Soc., Trans. 2: 109. ♂, ♀.

tetrica Townes. Colo.

Ctenochira tetrica Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 355. ♀.

Genus ERROMENUS Holmgren

Erromenus Holmgren, 1857 (1855). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 221.

Type-species: *Tryphon brunnicans* Gravenhorst. Desig. by Viereck, 1912.

Aniarophron Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 162.

Type-species: *Aniarophron niger* Szepligeti. Desig. by Perkins, 1962 from three species included by Szepligeti, 1901.

Trichocalymma Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 196.

Type-species: *Trichocalymma bipunctatum* Woldstedt. Desig. by Viereck, 1914 from three species included by Woldstedt, 1877.

Trichocalymmus Thomson, 1883. Opusc. Ent. 9: 903. Emend.

Currania Viereck, 1924. Canad. Ent. 56: 300.

Type-species: *Currania mirabilis* Viereck. Monotypic and orig. desig.

analis Brischke. Que., N. Y., Ont., S. Dak., Colo., Alaska, B. C., Wash.; Europe.

Erromenus analis Brischke, 1871. Phys.-Oekon. Gesell. Koenigsberg, Schr. 11: 95. ♂.

Currania mirabilis Viereck, 1924. Canad. Ent. 56: 301. ♀.

brevipes Townes. Wash.

Erromenus (Erromenus) brevipes Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 377. ♂, ♀.

caelator Townes. N. Y., Ont.

Erromenus (Erromenus) caelator Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 388. ♀.

defrictus Townes. Md.

Erromenus (Erromenus) defrictus Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 383. ♀.

- dimidiatus* (Cresson). N. S. w. to Alaska, s. to N. J., Kans., Calif. Ecology: Occurs in grassy areas. This is the most commonly collected Nearctic species of *Erromenus*.
Tryphon dimidiatus Cresson, 1868. Amer. Ent. Soc., Trans. 2: 108. ♂.
Tryphon atricorus Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 104. ♀ ?
Scopiorus hiatus Davis, 1897. Amer. Ent. Soc., Trans. 24: 258. ♂, ♀.
- dolichops* Townes. Que. s. to Md., w. to Alaska, Ariz.
Erromenus (Erromenus) dolichops Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 391. ♀, ♂.
- glabrosus* Davis. Man., Wyo., Colo., Oreg., Calif.
Erromenus glabrosus Davis, 1897. Amer. Ent. Soc., Trans. 24: 260. ♂.
- labratus* Townes. Calif.
Erromenus (Erromenus) labratus Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 390. ♀.
- levis* Townes. N. Y.
Erromenus (Erromenus) levis Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 378. ♂, ♀.
- marginatus* Provancher. Que. s. to Pa., w. to B. C. and Wash. Host: *Pristiphora bivittata* (Nort.).
Erromenus (!) marginatus Provancher, 1883. Nat. Canad. 14: 10. ♀.
- nasalis* Townes. Que., N. H., R. I., N. Y., Ohio, Colo., Wash.
Erromenus (Erromenus) nasalis Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 389. ♂, ♀.
- planus* Townes. N. Y., Sask., Alta., Calif.
Erromenus (Erromenus) planus Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 387. ♂, ♀.
- proteus* Townes. Minn., Sask., Alta., Wash., Calif.
Erromenus (Erromenus) proteus Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 384. ♂, ♀.
- punctulatus* Holmgren. Que. s. to N. Y., w. to N. Mex., Alaska, and Oreg.; Eurasia.
Erromenus punctulatus Holmgren, 1857 (1855). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 222. ♂.
Tryphon crassus Cresson, 1868. Amer. Ent. Soc., Trans. 2: 107. ♂, ♀.
Tryphon tejonius Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 372. ♂.
Polyblastus leviculus Davis, 1897. Amer. Ent. Soc., Trans. 24: 263. ♂.
Aniarophron niger Szepligeti, 1901. In Mocsary and Szepligeti, Zool. Erg. drit. asiat. Forschungsreise Grafen E. Zichy, v. 2 (Hym.), p. 141. "♂" = ♀.
- scorteus* Townes. Colo., Wash.
Erromenus (Erromenus) scorteus Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 379. ♂, ♀.
- tonto* Townes. Ariz.
Erromenus (Erromenus) tonto Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 390. ♂, ♀.
- ungulatus* Townes. N. Y., N. C., Ont., Wash.
Erromenus (Erromenus) unguatus Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 386. ♂, ♀.
- variolae* Townes. N. Y., N. J., Va., Kans.
Erromenus (Erromenus) variolae Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 393. ♂, ♀.

Genus ADERAEON Townes

Erromenus subg. *Aderaeon* Townes, 1949. In Townes and Townes, Ent. Soc. Amer., Ann. 42: 394.

Type-species: *Erromenus bedardi* Provancher. Monotypic and orig. desig.

Taxonomy: Kasparyan, 1971. Zool. Zhur. 50: 1586-1589 (Russ., Eng. summ.).

- bedardi** (Provancher). N. S., N. B., Que., Ont., B. C. Host: *Pikonema alaskensis* (Roh.), *P. dimmockii* (Cr.).
Erronemus(!) *Bedardi* Provancher, 1879. Nat. Canad. 11: 266. ♀.

Genus MONOBLASTUS Hartig

Monoblastus Hartig, 1837. Arch. f. Naturgesch. 3: 155.

Type-species: *Monoblastus caudatus* Hartig. Desig. by Viereck, 1914.

Otoblastus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 201.

Type-species: *Tryphon luteomarginatus* Gravenhorst. By subsequent monotypy from inclusion by Thomson, 1883.

Coeloconus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 203.

Type-species: *Ichneumon brachyacanthus* Gmelin. By subsequent monotypy from inclusion by Morley, 1911.

Catocentrus Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 89.

Type-species: *Tryphon philanthoides* Cresson. Monotypic.

Cerda Cameron, 1904. Amer. Ent. Soc., Trans. 30: 255.

Type-species: *Cerda fuscipennis* Cameron. Monotypic.

Idothrichus Schmiedeknecht, 1907. Hym. Mitteleuropas, p. 619.

Type-species: *Phaestus sericeus* Brischke. Monotypic.

Pseudopsilaga Gregor, 1929. Tsechech. Realgym. Neu Titschein in Maehren, Jahresber. 1928-1929: 6.

Type-species: *Pseudopsilaga romani* Gregor. Monotypic.

atroferia Townes. N. Y., Pa., N. C., Mich.

Monoblastus atroferia Townes, 1950 (1949). In Townes and Townes, Ent. Soc. Amer., Ann. 42: 413. ♂, ♀.

davisi (Townes). N. Y., Ont., Mich., Ill., Iowa.

Tryphon nigrum Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 281. ♂. Preocc. by Gravenhorst, 1829.

Tryphon davisi Townes, 1944. Amer. Ent. Soc., Mem. 11: 155. N. name for *nigrum* Davis.

dionnei (Provancher). N. S., s. to Pa., w. to Minn.

Tryphon Dionnei Provancher, 1879. Nat. Canad. 11: 256. ♀.

eurus Townes. Md.

Monoblastus eurus Townes, 1950 (1949). In Townes and Townes, Ent. Soc. Amer., Ann. 42: 410. ♂.

favonius Townes. Calif.

Monoblastus favonius Townes, 1950 (1949). In Townes and Townes, Ent. Soc. Amer., Ann. 42: 409. ♂, ♀.

feria feria (Davis). Que. s. to Fla., w. to Man. and Colo.

Otlophorus innumerabilis var. *feria* Davis, 1897. Amer. Ent. Soc., Trans. 24: 276. ♂, ♀.

Epachtes(!) *basilicus* Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 283. ♂, ♀.

feria rossi Townes. Colo., B. C., Oreg., Calif.

Monoblastus feria rossi Townes, 1950 (1949). In Townes and Townes, Ent. Soc. Amer., Ann. 42: 412. ♂, ♀.

fuscipennis (Cameron). Tex.; Mexico.

Cerda fuscipennis Cameron, 1904. Amer. Ent. Soc., Trans. 30: 255. ♂.

Monoblastus phaeopteris Townes, 1950 (1949). In Townes and Townes, Ent. Soc. Amer., Ann. 42: 415. ♂.

Taxonomy: Townes and Townes, 1966. Amer. Ent. Inst., Mem. 8: 46 (syn.).

innumerabilis (Davis). Nev., Wash., Oreg., Calif.

Otlophorus innumerabilis Davis, 1897. Amer. Ent. Soc., Trans. 24: 278. ♂, ♀.

kaniacensis (Hall). Minn., Man., Mont., Wyo., Colo., Idaho, Utah, Ariz., Wash., Oreg. Ecology:

On two separate occasions this species has been collected on *Symphoricarpos* bushes; in one instance the bushes were infested with sawfly larvae thought to be of the genus *Blennocampa*. Because *Blennocampa* is not known in N. Amer., it may have been a related genus in *Blennocampinae*.

Polyblastus kaniacensis Hall, 1919. Psyche 26: 156. ♀.

macer Townes. N. Y., N. J., Pa., Md., Va., Ohio.

Monoblastus macer Townes, 1950 (1949). In Townes and Townes, Ent. Soc. Amer., Ann. 42: 405. ♂, ♀.

montezuma (Cameron). Que. s. to N. C., w. to B. C. and Calif.; Mexico.

Tryphon montezuma Cameron, 1886. Biol. Cent.-Amer., Hym., v. 1, p. 286. ♂.

Otlophorus affinis Ashmead, 1901. Psyche 9: 148. ♂.

philanthoides (Cresson). N. H., N. Y., Ill.

Tryphon philanthoides Cresson, 1868. Amer. Ent. Soc., Trans. 2: 110. ♀.

proximus Townes. Idaho, Wash., Oreg., Calif.

Monoblastus proximus Townes, 1950 (1949). In Townes and Townes, Ent. Soc. Amer., Ann. 42: 403. ♂, ♀.

Genus THIBETOIDES Davis

Thibetoides Davis, 1897. Amer. Ent. Soc., Trans. 24: 205.

Type-species: *Thibetoides flosamoris* Davis. Monotypic.

Revision: Viktorov, 1964. Ent. Obozr. 43: 182-184; 91-92 in Ent. Rev. (Palearctic spp.).

flosamoris Davis. Wash., Oreg., Calif.

Thibetoides flosamoris Davis, 1897. Amer. Ent. Soc., Trans. 24: 205. ♂.

Genus LAGOLEPTUS Townes

Lagoleptus Townes, 1969. Amer. Ent. Inst., Mem. 11: 173.

Type-species: *Lagoleptus palans* Townes. Orig. desig.

palans Townes. N. Y., Pa., N. C., S. C.

Lagoleptus palans Townes, 1969. Amer. Ent. Inst., Mem. 11: 174.

Genus BOETHUS Foerster

Boethus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 210.

Type-species: *Boethus howardi* Davis. Desig. by Viereck, 1914 from three species included by Davis, 1898 (1897).

Diplomorphus Giraud, 1872. Soc. Ent. de France, Ann. 1: 409.

Type-species: *Diplomorphus thoracicus* Giraud. Monotypic.

Aethalodes Kriechbaumer, 1890. Schweiz. Ent. Gesell., Mitt. 8: 207. Preocc. by Gahan, 1888.

Type-species: *Aethalodes mesomelas* Kriechbaumer. Desig. by Viereck, 1914.

Members of this genus parasitize the larvae of Argidae.

alaingens Davis. Calif.

Boethus alaingens Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 291. ♀.

glabranotus Davis. Mont.

Boethus glabranotus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 291. ♀.

nigripennis Cushman. N. Y., Ky., Ala. Host: *Arge pectoralis* (Leach).

Boethus nigripennis Cushman, 1922. U. S. Natl. Mus., Proc. 60 (21): 12. ♂, ♀.

schizoceri (Riley and Howard). N. J. s. to Fla., w. to Minn. and La. Host: *Sphacophilus cellularis* (Say).

Eubadizon schizoceri Riley and Howard, 1888. U. S. Dept. Agr., Insect Life 1: 44. ♀ ?

Eubadizon schizoceratis Riley and Howard, 1889. U. S. Dept. Agr., Insect Life 1: XXXI (errata). Emend.

Boethus howardi Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 290. ♂, ♀.

Boethus aenigmaticus Viereck, 1905. Kans. Acad. Sci., Trans. 19: 314. ♂.

Boethus daeckei Viereck, 1909. Ent. Soc. Wash., Proc. 11: 210. ♂.

Genus DYSPETES Foerster

Dyspetes Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 201.

Type-species: *Tryphon praerogator* Gravenhorst. By subsequent monotypy from inclusion by Thomson, 1883. *Tryphon praerogator* Gravenhorst is a

misidentification of *Ichneumon praerogator* Linnaeus, the available names for which are *Dyspetes arrogator* Heinrich (1949) and *Dyspetes practiceps* Townes (1950 [1949]).

Dyspetus Thomson, 1883. Opusc. Ent. 9: 899. Emend.

Taxonomy: Townes and Townes, 1950 (1949). Ent. Soc. Amer., Ann. 42: 422. — Perkins, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 11 (8): 419. — Townes, Momoi, and Townes, 1965. Amer. Ent. Inst., Mem. 5: 105.

rufus (Provancher). Que.

Exetastes rufus Provancher, 1874. Nat. Canad. 6: 78. ♂, ♀.

Genus COSMOCONUS Foerster

Cosmoconus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 203.

Type-species: *Ichneumon elongator* Fabricius. By subsequent monotypy from inclusion by Woldstedt, 1877.

Revision: Kasparyan, 1971. Vses. Ent. Obsh., Trudy 54: 286-307 (Palearctic spp.).

arcticus (Brues). Alaska, Wash., Oreg., Calif.

Polyblastus arcticus Brues, 1919. Rpt. Canad. Arctic Exped. 1913-18, v. 3G, p. 22. ♀.

canadensis (Provancher). N. S. s. to N. C., w. to Sask. and Colo.

Tryphon Canadensis Provancher, 1875. Nat. Canad. 7: 117. ♂, ♀.

vallis Townes, n. status. Que., Md., Ill., Iowa, Tex.

Cosmoconus canadensis vallis Townes, 1950 (1949). In Townes and Townes, Ent. Soc. Amer., Ann. 42: 425. ♂, ♀.

Genus TRYPHON Fallen

There are five subgenera, three being strictly Palearctic (including *Tryphon*), one being Holarctic (*Symboethus*), and one being strictly Nearctic (*Noemon*). Species of this genus are chiefly parasitic upon sawflies of the subfamily Dolerinae.

Revision: Kasparyan, 1969. Ent. Obozr. 48: 639-662 and 899-918; 407-419 and 572-584 in Ent. Rev. (Palearctic spp.).

Genus TRYPHON Subgenus NOEMON Foerster

Noemon Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 207.

Type-species: *Noemon palmaris* Davis. Desig. by Viereck, 1914 from three species included by Davis, 1898 (1897).

californicus Cresson. Calif.

Tryphon californicus Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 373. ♂, ♀.

coquilletti Townes. Calif.

Tryphon (Noemon) coquilletti Townes, 1950 (1949). In Townes and Townes, Ent. Soc. Amer., Ann. 42: 432. ♂, ♀.

hamatus Townes. Calif.

Tryphon (Noemon) hamatus Townes, 1950 (1949). In Townes and Townes, Ent. Soc. Amer., Ann. 42: 432. ♂, ♀.

lusorius Cresson. Calif.

Tryphon lusorius Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 373. ♂.

machaerus Townes. Calif.

Tryphon (Noemon) machaerus Townes, 1950 (1949). In Townes and Townes, Ent. Soc. Amer., Ann. 42: 431. ♂, ♀.

palmaris (Davis). Southern Calif.

Noemon palmaris Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 287. ♂, ♀.

Genus TRYPHON Subgenus TRYPHON Fallen

Tryphon Fallen, 1813. Spec. Nov. Hym. Disp. Meth., p. 16.

Type-species: *Ichneumon rutilator* Linnaeus. Desig. by Curtis, 1832.

Psilosage Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 203.

Type-species: *Tryphon ephippium* Holmgren. By subsequent monotypy from inclusion by Morley, 1911.

Otitochilus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 203.

Type-species: *Tryphon trochanteratus* Holmgren. By subsequent monotypy from inclusion by Woldstedt, 1877 (1876).

This subgenus is Palearctic.

Genus TRYPHON Subgenus SYMBOETHUS Foerster

Symboethus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 204.

Type-species: *Tryphon exclamationis* Gravenhorst. Desig. by Viereck, 1914 from two species included by Morley, 1911.

Quadrigana Davis, 1897. Amer. Ent. Soc., Trans. 24: 280.

Type-species: *Tryphon americanus* Cresson. By subsequent monotypy from inclusion by Davis, 1898 (1897), p. 281.

alaskensis Ashmead. Sask., Alta., Alaska, Wash.

Polyblastus glacialis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 213. ♀.

Tryphon alaskensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 215. ♀.

americanus Cresson. Que. s. to Pa., w. to Minn. and Kans.

Tryphon americanus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 276. ♂.

Tryphon affinis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 277. ♀.

communis Cresson. N. S. s. to Pa., w. to Alaska, Alta., and N. Mex. Two or more species may be confused under this name.

Tryphon communis Cresson, 1868. Amer. Ent. Soc., Trans. 2: 103 ♂, ♀.

Tryphon clypeatus Provancher, 1875. Nat. Canad. 7: 309, 311. ♂. The alternate spelling "clypealis" appeared on p. 309.

Tryphon pediculatus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 102. ♂.

Tryphon communis var. *atripes* Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 282. ♂, ♀.

Grypocentrus rufiterminalis Hall, 1919. Psyche 26: 157. ♀.

foraminatus Townes, N. status. S. D. s. to Colo., w. to B. C. and Calif. The egg of this species is more elongate than that of *communis*.

Tryphon (Symboethus) communis foraminatus Townes, 1950 (1949). In Townes and Townes, Ent. Soc. Amer., Ann. 42: 442. ♂, ♀.

illotus Townes. Wash.

Tryphon (Symboethus) illotus Townes, 1950 (1949). In Townes and Townes, Ent. Soc. Amer., Ann. 42: 443. ♂.

mystax Townes. N. B. w. to Alaska, s. to N. H., Colo., and Wash.

Tryphon (Symboethus) mystax Townes, 1950 (1949). In Townes and Townes, Ent. Soc. Amer., Ann. 42: 437. ♂, ♀.

rempeli Townes. Sask., Wash., Oreg.

Tryphon (Symboethus) rempeli Townes, 1950 (1949). In Townes and Townes, Ent. Soc. Amer., Ann. 42: 435. ♂, ♀.

seminiger Cresson. N. S. w. to Alaska, s. to Md., Ill., N. Mex., and Calif.

Tryphon seminiger Cresson, 1864. Ent. Soc. Phila., Proc. 3: 278. ♀.

Metopius terminalis Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 438. ♂.

townesi Walkley. Que., Maine, N. H., Vt., Mich., Colo.

Tryphon (Symboethus) humeralis Townes, 1950 (1949). In Townes and Townes, Ent. Soc. Amer., Ann. 42: 438. ♂, ♀. Preocc. by Gravenhorst, 1829.

Tryphon (Symboethus) townesi Walkley, 1958. In Krombein, et al., U. S. Dept. Agr., Agr. Monog. 2, Sup. 1, p. 41. N. name for *humeralis* Townes.

viator Townes. Que. w. to Alta., s. to Pa., Mo., and Colo.

Tryphon (Symboethus) viator Townes, 1950 (1949). In Townes and Townes, Ent. Soc. Amer., Ann. 42: 443. ♂, ♀.

TRIBE EXENTERINI

The name Cteniscini Woldstedt (1877) is often used for this tribe, but Exenterini Foerster (1868) seems to be favored as much by recent authors; because the latter name has the additional advantage of being oldest, it is used here.

Revision: Davis, 1897. Amer. Ent. Soc., Trans. 24: 227-240. —Kerrich, 1952. Brit. Mus. (Nat. Hist.) Ent., Bul. 2: 307-459. (Old World spp.).

Genus ORTHOMISCUS Mason

Orthomiscus Mason, 1955. Canad. Jour. Zool. 33: 63.

Type-species: *Orthomiscus platyura* Mason. Orig. desig.

Taxonomy: Mason, 1962. Canad. Ent. 94: 1273-1274.

leptura Mason. Que., N. H., Vt., Ont., Calif.

Orthomiscus leptura Mason, 1955. Canad. Jour. Zool. 33: 64. ♂, ♀.

platyura Mason. Que. w. to Mich., s. to Md. and Alta.

Orthomiscus platyura Mason, 1955. Canad. Jour. Zool. 33: 66. ♂, ♀.

Genus EXCAVARUS Davis

Excavarus Davis, 1897. Amer. Ent. Soc., Trans. 24: 233.

Type-species: *Cteniscus annulipes* Cresson. Desig. by Viereck, 1914.

Taxonomy: Mason, 1962. Canad. Ent. 94: 1293-1296.

annulipes (Cresson). N. B. w. to Minn., s. to S. C. and Ill. Host: *Croesus latitarsus* Nort.

Cteniscus annulipes Cresson, 1868. Amer. Ent. Soc., Trans. 2: 112. "♂" = ♀.

etrocaulus etrocaulus Mason. Alta., Colo., B. C., Oreg.

Smicroplectrus etrocaulus etrocaulus Mason, 1956. Canad. Jour. Zool. 34: 149. ♂, ♀.

etrocaulus eurus Mason. N. B., Que., Mass., Mich., Minn.

Smicroplectrus etrocaulus eurus Mason, 1956. Canad. Jour. Zool. 34: 150. ♀.

velox (Walley). Que., Maine, Ont., Sask., N. Mex., Alta., B. C. Host: *Pikonema alaskensis* (Roh.), *P. dimmockii* (Cr.).

Smicroplectrus velox Walley, 1937. Canad. Ent. 69: 132. ♀.

Genus EXYSTON Schiodte

Exyston Schiodte, 1839. Mag. Zool., sect. 3, (ser. 2) 1 (pl. 6-9): 12.

Type-species: *Ichneumon cinctulus* Gravenhorst. Monotypic.

Tricamptus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 194.

Type-species: *Exenterus pratorum* Woldstedt. By subsequent monotypy from inclusion by Woldstedt, 1877.

Diaborus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 195.

Type-species: *Cteniscus (Diaborus) sedulus* Woldstedt. Desig. by Viereck, 1912 from two species included by Woldstedt, 1877. The type-species is regarded as a synonym of *Exyston pratorum* (Woldstedt).

Anecphysis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 195.

Type-species: *Anecphysis curvineura* Davis. By subsequent monotypy from inclusion by Davis, 1897.

Parexyston Kerrich, 1952. Brit. Mus. (Nat. Hist.) Ent., Bul. 2: 392.

Type-species: *Exyston calcaratus* Thomson. Monotypic and orig. desig.

According to Mason (1959) most of the species are found in grassy places. He presumed that they are mainly parasitic upon "sod-feeding" Dolerinae, but the only North American species so far reared (*maculosum* [Provancher]) parasitizes *Pristiphora* spp. (Nematinae) on *Salix* and *Vaccinium*.

Revision: Mason, 1959. Canad. Jour. Zool. 37: 1067-1115.

atrum Mason. B. C., Wash., Oreg.

Exyston (Anecphysis) ater Mason, 1959. Canad. Jour. Zool. 37: 1095. ♂, ♀.

austelli Mason. Mass. s. to N. C.

Exyston (Anecphysis) austelli Mason, 1959. *Canad. Jour. Zool.* 37: 1078. ♂, ♀.

boreotis Davis. N. Y., Mich., Sask., Wyo., Colo., N. Mex., Alta.

Exyston boreotis Davis, 1897. *Amer. Ent. Soc., Trans.* 24: 238. ♂.

Exyston nigroscutum Davis, 1897. *Amer. Ent. Soc., Trans.* 24: 237. ♂.

Exyston contracta Davis, 1897. *Amer. Ent. Soc., Trans.* 24: 238. ♂. Uncertain syn.; Mason (1959) suggested that *contracta* might alternatively prove to be a senior synonym of *spinulosum* Mason.

Taxonomy: Mason, 1959. *Canad. Jour. Zool.* 37: 1082-1084, 1112-1113. —Townes, 1969. *Amer. Ent. Inst., Mem.* 11: 186.

californicum Mason. Alta. s. to Colo., w. to Alaska and Calif.

Exyston (Anecphysis) californicum Mason, 1959. *Canad. Jour. Zool.* 37: 1093. ♂, ♀.

chamaeleon Mason. Ont., N. W. T. w. to Yukon, s. to S. Dak., N. Mex. and Calif.

Exyston (Exyston) chamaeleon Mason, 1959. *Canad. Jour. Zool.* 37: 1099. ♂, ♀.

clavatum (Cresson). N. S. w. to B. C., s. to Va., Ill., Kans., and Calif.

Cteniscus clavatus Cresson, 1864. *Ent. Soc. Phila., Proc.* 3: 284. ♂.

Cteniscus abdominalis Cresson, 1865. *Ent. Soc. Phila., Proc.* 4: 264. ♀.

Exyston abdominalis Ashmead, 1896. *Amer. Ent. Soc., Trans.* 23: 197. ♂. Preocc. by above synonym, *abdominalis* Cresson, 1865.

Rhimphalea erythrogaster Viereck, 1917 (1916). *Conn. State Geol. and Nat. Hist. Survey Bul.* 22: 296. ♀.

excelsus (Cresson). Wyo., Colo.

Cteniscus excelsus Cresson, 1865. *Ent. Soc. Phila., Proc.* 4: 262. ♀.

flavens Davis. Mass., N. J., Ga., Tex.

Exyston flavens Davis, 1897. *Amer. Ent. Soc., Trans.* 24: 237. ♀.

hadrum Mason. Mich., Minn., Sask., Colo., Alta.

Exyston (Anecphysis) hadros Mason, 1959. *Canad. Jour. Zool.* 37: 1080. ♂, ♀.

humerale Davis. Newfoundland (insular) w. to Sask., s. to Minn., Kans., and Mont.

Exyston humeralis Davis, 1897. *Amer. Ent. Soc., Trans.* 24: 239. ♂.

Exyston articulatus Davis, 1897. *Amer. Ent. Soc., Trans.* 24: 239. ♂.

illinois Mason. Que., Ont., Mich., Ill., Iowa.

Exyston (Exyston) illinois Mason, 1959. *Canad. Jour. Zool.* 37: 1103. ♂, ♀.

lophotum Mason. N. W. T., Sask., Alta., B. C., Wash., Calif.

Exyston (Anecphysis) lophotos Mason, 1959. *Canad. Jour. Zool.* 37: 1091. ♂, ♀.

maculosus (Provancher). N. S. w. to B. C., s. to N. C., Ill., Ariz., and Calif. Host: *Pristiphora bivittata* (Nort.), *P. cincta* Newman, *P. sycophanta* Walsh.

Mesoleptus maculosus Provancher, 1875. *Nat. Canad.* 7: 114. "♀" = ♂.

Exyston (Anecphysis) tectus Mason, 1959. *Canad. Jour. Zool.* 37: 1073. ♂, ♀.

Taxonomy: Barron, 1975. *Nat. Canad.* 102: 502 (syn.).

marginatum (Provancher). Northern Que. w. to Alaska, s. to N. C., Mich., Colo., and Calif.

Exyston marginatum Provancher, 1886. *Addit. Corr. Faune Ent. Canada Hym.*, p. 99. ♀.

Anecphysis curvineura Davis, 1897. *Amer. Ent. Soc., Trans.* 24: 234. ♀.

Exyston nigreo Davis, 1897. *Amer. Ent. Soc., Trans.* 24: 236. ♂.

politum Davis. Mont., Wyo., Calif.

Exyston politus Davis, 1897. *Amer. Ent. Soc., Trans.* 24: 240. ♀.

reniforme Mason. Colo., Alta., B. C., Oreg., Calif.

Exyston (Anecphysis) reniformis Mason, 1959. *Canad. Jour. Zool.* 37: 1089. ♂, ♀.

speciosum Davis. Alta. s. to Colo., w. to B. C. and Calif.

Exyston speciosus Davis, 1897. *Amer. Ent. Soc., Trans.* 24: 237. ♂.

spinulosum Mason. N. W. T. w. to Alaska, s. to Iowa, Kans., Wyo., and Wash.; Kamchatka.

Exyston (Anecphysis) spinulosus Mason, 1959. *Canad. Jour. Zool.* 37: 1086. ♂, ♀.

variatus Provancher. N. S. w. to B. C., s. to N. C., Ill., and N. Dak. Ecology: Occurs at forest edges and along woodland paths, but not in grasslands or meadows.

Exyston variatus Provancher, 1877. *Nat. Canad.* 9: 15. ♀.

Eryston variatus Provancher, 1879. Nat. Canad. 11: 249. ♀. Preocc. by Provancher, 1877.

Contrary to the discussion of Barron (1975), Provancher indicated this as being a description of a new species. The variant spelling "*vauiatus*" also appears on p. 249.

Eryston abdominalis var. *rufinus* Davis, 1897. Amer. Ent. Soc., Trans. 24: 239. ♀.

Taxonomy: Barron, 1975. Nat. Canad. 102: 581 (discussion of lectotype).

venustum (Cresson). S. Dak., Sask., Colo., Utah, B. C., Wash.

Cteniscus venustus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 263. ♀.

Genus SMICROPLECTRUS Thomson

Microplectron Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 195. Preocc. by Streubel, 1842 and Dahlbom, 1857.

Type-species: *Exenterus erosus* Holmgren. By subsequent monotypy from inclusion by Woldstedt, 1877 (1876).

Smicroplectrus Thomson, 1883. Opusc. Ent. 9: 888.

Type-species: *Exenterus jucundus* Holmgren. Desig. by Viereck, 1914.

Anderis Davis, 1897. Amer. Ent. Soc., Trans. 24: 233.

Type-species: *Cteniscus albilineatus* Walsh. Desig. by Viereck, 1914.

Auderis Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 348 (errata). Emend.

Revision: Mason, 1956. Canad. Jour. Zool. 34: 124-151 (including *Excavarus*).

apicatus (Provancher). Que., Maine, N. Y., Ont., Colo., Alta., B. C. Host: *Nematus currani* Ross.

Cteniscus apicatus Provancher, 1879. Nat. Canad. 11: 263. "♂" = ♀.

californicus (Cresson). Que. w. to B. C., s. to N. C., Minn., Ariz., and Calif.

Ctenistes(!) *californicus* Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 374. ♂.

Smicroplectrus disseptus Walley, 1933. Canad. Ent. 65: 256. ♀.

eburneus Mason. Ont., Tex.

Smicroplectrus eburneus Mason, 1956. Canad. Jour. Zool. 34: 141. ♀.

incompletus Walley. N. S. w. to Alta., s. to Pa. and Ariz. Host: *Pikonema* sp.

Smicroplectrus incompletus Walley, 1937. Canad. Ent. 69: 134. ♀.

jucundus albilineatus (Walsh). Que. w. to Alaska, s. to Colo. and Calif. *S. jucundus jucundus* (Holmgren) is Palearctic.

Cteniscus albilineatus Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 107. "♂" = ♀.

robustus Walley. Que. w. to Alta., s. to N. Y., Mich., and Nev. Ecology: Observed on *Populus* ovipositing on *Nematus* sp. Host: *Nematus* sp.

Smicroplectrus robustus Walley, 1937. Canad. Ent. 69: 135. ♀.

takomae Mason. N. W. T., Alaska, Wash.

Smicroplectrus takomae Mason, 1956. Canad. Jour. Zool. 34: 131. ♂, ♀.

walleyi Mason. Que., N. Y., Pa., Md., Va., Ont., Ohio, Ky., Nebr.

Smicroplectrus walleyi Mason, 1956. Canad. Jour. Zool. 34: 132. ♂, ♀.

Genus ACROTOMUS Holmgren

Acrotomus Holmgren, 1857 (1855). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 222.

Type-species: *Tryphon lucidulus* Gravenhorst. Desig. by Viereck, 1912.

Delotomus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 194, 215. Unnecessary n. name for *Acrotomus* Holmgren.

Taxonomy: Mason, 1962. Canad. Ent. 94: 1285-1287.

succinctus (Gravenhorst). N. Y., Ont., Mich.; Europe. Adventive.

Tryphon succinctus Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 166. ♂, ♀.

Genus CTENISCUS Haliday

Cteniscus Haliday, 1832. In Curtis, Brit. Ent., v. 9, no. 399.

Type-species: *Tryphon sexilituratus* Gravenhorst. Monotypic. The type-species is regarded as a synonym of *Cteniscus pedatorius* (Panzer).

Eudiaborus Kerrich, 1952. Brit. Mus. (Nat. Hist.) Ent., Bul. 2: 415.

Type-species: *Diaborus pallitarsis* Thomson. Orig. desig. The type-species is regarded as a synonym of *Cteniscus scalaris* (Gravenhorst).

The name *Cteniscus* has not traditionally applied to this genus, the change in application being made by Townes, Townes, and Gupta (1965) in compliance with the fact that *Tryphon sexilituratus* Gravenhorst was the only species originally included; (see Townes, 1969); other names mentioned in the original description (e.g. *Cteniscus aurifluus*) were then *nomen nudum*. Prior to the description of *Eudiaborus*, the name *Diaborus* Foerster had been incorrectly applied to this genus.

Revision: Mason, 1955. Canad. Jour. Zool. 33: 21-63 (as *Eudiaborus*).

Taxonomy: Kerrich, 1952. Brit. Mus. (Nat. Hist.) Ent., Bul. 2: 314-316, 415-416. —Townes, Townes, and Gupta, 1965. Amer. Ent. Inst., Mem. 5: 113. —Townes, 1969. Amer. Ent. Inst., Mem. 11: 188-190. —Kerrich, 1975. Polskie Pismo Ent. 40: 125-126.

devius (Mason). Man., Colo., Alaska; Europe.

Eudiaborus devius Mason, 1955. Canad. Jour. Zool. 33: 34. ♀.

dorsalis Cresson. N. S. w. to Alaska, s. to N. Y., Ill., Colo., and Calif.

Cteniscus dorsalis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 282. "♂" = ♀.

Cteniscus medius Cresson, 1864. Ent. Soc. Phila., Proc. 3: 282. ♂.

eximius (Mason). N. Y.

Eudiaborus eximius Mason, 1955. Canad. Jour. Zool. 33: 33. ♀.

flavicircus (Mason). Ont., Ohio, S. C., Ind. Host: *Pristiphora* sp.

Eudiaborus flavicircus Mason, 1955. Canad. Jour. Zool. 33: 27. ♂, ♀.

glutiniatus (Roman). Maine, B. C., Alaska; N. Eurasia.

Diaborus glutiniatus Roman, 1909. In Hamburg, Naturw. Unters. Sarekgebirges, v. 4, p. 282. ♂, ♀.

leptonyx (Mason). Newfoundland (Labrador) w. to Alaska, s. to Man., Colo., Ariz., and Calif.

Eudiaborus leptonyx Mason, 1955. Canad. Jour. Zool. 33: 37. ♂, ♀.

luminosus (Mason). N. Y.

Eudiaborus luminosus Mason, 1955. Canad. Jour. Zool. 33: 40. ♀.

maculiventris maculiventris (Ashmead). Newfoundland (Labrador) w. to B. C., s. to Mass. and Colo.

Diaborus maculiventris Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 197. ♂.

Diaborus ignipes Davis, 1897. Amer. Ent. Soc., Trans. 24: 231. ♀.

maculiventris sexmaculatus (Ashmead). N. W. T., N. Man., Alaska. More northwestern than the nominate subspecies, *m. sexmaculatus* probably having descended from a Palearctic-Beringian glacial refugium. A third subspecies, *m. borealpinus* Kerrich, occurs in Europe and is rather similar to *m. sexmaculatus*.

Diaborus sexmaculatus Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 212. ♂.

nigrocephalus (Davis). Conn., Md., Ga.

Diaborus nigrocephalus Davis, 1897. Amer. Ent. Soc., Trans. 24: 232. ♀.

promediatus arizonicus (Mason). N. Mex., Ariz.

Eudiaborus promediatus arizonicus Mason, 1955. Canad. Jour. Zool. 33: 60. ♀.

promediatus cressoni (Mason). N. Y. w. to s. Ont. and Mich., s. to Va. Host: *Nematus salicisodoratus* Dyar.

Eudiaborus promediatus cressoni Mason, 1955. Canad. Jour. Zool. 33: 59. ♂, ♀.

promediatus promediatus (Mason). Newfoundland (insular) w. to Alaska, s. to N. S., s. Ont., Minn., Colo., and B. C. Host: *Nematus currani* Ross, *Hemichroa crocea* (Geoff.).

Eudiaborus promediatus promediatus Mason, 1955. Canad. Jour. Zool. 33: 56. ♂, ♀.

pulchellus (Mason). Mass., N. J., Pa., Md., Mich.

Eudiaborus pulchellus Mason, 1955. Canad. Jour. Zool. 33: 50. ♂, ♀.

pyelechus (Mason). Mass., N. J., Pa., Md., Mich.

Eudiaborus pyelechus Mason, 1955. Canad. Jour. Zool. 33: 25. ♂, ♀.

scaphuloides (Mason). Que., Maine, R. I., Md., Ont., Mich., Idaho.

Eudiaborus scaphuloides Mason, 1955. Canad. Jour. Zool. 33: 40. ♂, ♀.

- similis* (Davis). Que. w. to Alaska, s. to N. H., Nebr., Colo., and Calif. The division of this species into four subspecies by Mason (1955) is rather unconvincing.
Diaborus similis Davis, 1897. Amer. Ent. Soc., Trans. 24: 231. ♀ (♂ misdet.).
Diaborus nebraskensis Davis, 1897. Amer. Ent. Soc., Trans. 24: 232. ♂.
Diaborus citrifrons Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 212. ♂.
Cteniscus vitticollis Cresson, 1868. Amer. Ent. Soc., Trans. 2: 113. "♂" = ♀.

Genus SCAPNETES Townes

- Scapnetes* Townes, 1969. Amer. Ent. Inst., Mem. 11: 190.
 Type-species: *Exenterus ornatus* Walsh. Orig. desig. Enigmatically, Townes (1969) added the qualifying phrase "as interpreted by Mason, 1956" to his type-species designation, but then went on to point out, in effect, that Mason (1956) had confused two species under the name *ornatus*.
ornatus (Walsh). N. S., N. B., Que., N. H., Conn., S. C., Ga., Fla., Ont., Mich.
Exenteron (!) *ornatus* Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 105. ♂.
 Taxonomy: Mason, 1956. Canad. Jour. Zool. 34: 120-124.
rufus (Provancher). Que.
Cteniscus rufus Provancher, 1876. Nat. Canad. 8: 318. ♀.
 Taxonomy: Townes, 1969. Amer. Ent. Inst., Mem. 11: 190.

Genus EXENTERUS Hartig

- Exenterus* Hartig, 1837. Arch. f. Naturgesch. 1: 156.
 Type-species: *Ichneumon marginatorius* Fabricius. Monotypic.
Actenonyx Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 195. Preocc. by White, 1846.
 Type-species: *Ichneumon marginatorius* Fabricius. By subsequent monotypy from inclusion by Viereck, 1911.
Picroscopus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 195.
 Type-species: *Tryphon ictericus* Gravenhorst. By subsequent monotypy from inclusion by Thomson, 1883.
 Members of this genus are parasitic upon the larvae of Diprionidae.
 Revision: Cushman, 1940. U. S. Dept. Agr. Misc. Pub. 354: 1-14. — Cushman, 1943. Canad. Ent. 75: 169-174 (additions and corrections to 1940 revision).
 Taxonomy: Finlayson, 1963. Canad. Ent. 95: 468-488 (key to final-instar larvae). — Mason, 1967. Canad. Ent. 95: 375-384 (egg structure specializations).
abruptorius (Thunberg). Que., Ont.; Eurasia. Introduced. Host: *Neodiprion sertifer* (Geoff.), *N. lecontei* (Fitch), *N. pratti banksianae* Roh. Dowden (1960) stated that *E. abruptorius* is known to be established in N. J., but no specimens of *abruptorius* from N. J. can be found in the U. S. Natl. Museum collection; lacking evidence to the contrary, I assume that the N. J. record for *abruptorius* is based upon incorrectly identified specimens.
Ichneumon abruptorius Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 279; 9: 360. ♂ (♀ misdet.).
Exenterus cingulatus Holmgren, 1857 (1855). Svenska Vetensk.-Akad. Handl. (n. f.). 1: 229. ♀.
Exenterus coreensis Uchida, 1930. Hokkaido Imp. Univ., Faculty Agr., Jour. 25: 270. ♂, ♀.
 Taxonomy: Finlayson, 1960. Canad. Ent. 92: 28 (larva).

- Biology: Morris, 1937. Bul. Ent. Res. 28: 525-534. — Salt, 1941. Cambridge Phil. Soc., Biol. Rev. 16: 256. — Wilkes, 1942. Ent. Soc. Ontario, Ann. Rpt. for 1941, p. 41-44. — Guryanova, 1972. Zool. Zhur. 51: 845-854 (Russ. with Ent. sum.).
adpersus Hartig. Eurasia. Introduced in N. B. in 1938 and possibly in mixture with other *Exenterus* spp. at other Canadian localities between 1933 and 1939, apparently without becoming established. The target host for introductions in Canada was *Gilpinia hercyniae* (Htg.), but I find no record of *adpersus* having been reared from *hercyniae*

- during the period in which *hercyniae* has been resurrected from synonymy with *Gilpinia polytoma* (Htg.) (i.e. since 1939).
- Exenterus adpersus* Hartig, 1838. Jahresber. Fortschr. Forstwiss. Forstl. Naturk. 1: 271. ♂, ♀.
- Exenterus lepidus* Holmgren, 1857 (1855). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 231. ♂.
- Exenterus larinus* Thomson, 1888. Opusc. Ent. 12: 1254. ♀.
- Exenterus oleaceus* Uchida, 1931. Insecta Matsumurana 5: 146. ♀.
- Taxonomy: Beirne, 1941. Soc. Brit. Ent., Trans. 7: 180-181 (final-instar larva). —Iwata, 1958; 1960. Acta Hym. 1: 69; 163 (egg and ovary).
- Biology: Morris, Cameron, and Jepson, 1937. Bul. Ent. Res. 28: 375-376.
- affinis** Rohwer. Que., Maine, Ont. Host: *Gilpinia hercyniae* (Htg.), *Neodiprion abietis* (Harris).
- Exenterus affinis* Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 225. ♀.
- Taxonomy: Finlayson, 1960. Canad. Ent. 92: 928 (final-instar larva).
- amictorius** (Panzer). N. S. s. to N. W. Va., w. to N. Dak.; Europe. Introduced. Host: *Gilpinia hercyniae* (Htg.), *Diprion similis* (Htg.), *Neodiprion lecontei* (Fitch), *N. nanulus nanulus* Schedl, *N. sertifer* (Geoff.), *N. swaini* (Midd.).
- Ichneumon marginatorius* Fabricius, 1793. Ent. System., v. 2, p. 145. (female). Preocc. by Rossi, 1790.
- Ichneumon amictorius* Panzer, 1801. Faunae Ins. German., fasc. 80, pl. 14. ♀.
- Ichneumon sulcatorius* Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 279; 9; 359. ♂, ♀.
- Taxonomy: Finlayson, 1960. Canad. Ent. 92: 28-30 (final-instar larva).
- Biology: Scheidter, 1934. Ztschr. f. Pflanzenkrankh. 44: 369, 500-502. —Wilkes, 1924. Ent. Soc. Ontario, Ann. Rpt. for 1941, p. 41-44. —McLeod, 1972. Canad. Ent. 104: 1313-1330.
- canadensis** Provancher. Que. s. to Fla., w. to Wis. and La. Host: *Neodiprion abietis* (Harris), *N. excilians* Roh., *N. lecontei* (Fitch), *N. pinetum* (Nort.), *N. swaini* Midd., *N. virginiana* Roh. For many years the name *canadensis* has been erroneously applied to *nigrifrons* Rohwer (which see).
- Exenterus Canadensis* Provancher, 1883. Nat. Canad. 14: 9. ♂, ♀.
- Exenterus diprioni* Rohwer, 1915. U. S. Natl. Mus., Proc. 49: 222. ♀. Synonymy according to Barron (1975).
- Exenterus diprionis* Cushman, 1940. U. S. Dept. Agr. Misc. Pub. 354: 4. Unjustified emend.
- Taxonomy: Finlayson, 1963. Canad. Ent. 95: 489-490 (final-instar larva, as *diprionis*). —Barron, 1975. Nat. Canad. 102: 440.
- Biology: Barclay, 1938. Ent. Soc. Ontario, Ann. Rpt. 69: 29-31 (as *diprioni*). —Griffiths, 1969. Canad. Ent. 101: 673-713.
- confusus** Kerrich. N. B., Que., Ont.; Eurasia. Introduced. Host: *Gilpinia hercyniae* (Htg.), *Neodiprion nanulus nanulus* Schedl. This species was misidentified as *Exenterus claripennis* Thomson in the revision by Cushman (1940).
- Exenterus confusus* Kerrich, 1952. Brit. Mus. (Nat. Hist.) Ent., Bul. 2: 361. ♂, ♀.
- Taxonomy: Finlayson, 1960. Canad. Ent. 92: 926-927 (final-instar larva).
- Biology: Reeks, 1952. Canad. Ent. 84: 79-85 (as *claripennis*).
- hullensis** Provancher. Que., N. H., Ont., Mich.
- Exenterus Hullensis* Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 104. ♂, ♀.
- lophyri** Viereck. Nebr., Ariz. Host: *Zadiprion townsendi* (Ckll.).
- Exenterus lophyri* Viereck, 1911. U. S. Natl. Mus., Proc. 39: 404. ♀.
- Biology: Swenk, 1911. Nebr. Agr. Expt. Sta., Ann. Rpt. 24: 26-28.
- nigrifrons** Rohwer. N. S. to Fla., w. to Minn. and Tex. Host: *Gilpinia hercyniae* (Htg.), *Neodiprion abbotii* (Leach), *N. abietis* (Harris), *N. excilians* Roh., *N. lecontei* (Fitch), *N. nanulus nanulus* Schedl, *N. pratti banksianae* Roh., *N. rugifrons* Midd., *N. sertifer* (Geoff.), *N. swaini* Midd., *N. taedae linearis* Ross. Preceding the work of Barron (1975)

on the Provancher types, authors (most importantly Cushman, 1940) have incorrectly applied the name *canadensis* Provancher to this species; Cushman (1940) based his usage upon the erroneous assertion that there had been a male holotype of *canadensis*, and he applied the name according to the first-revisor principle because only a female specimen had then been found in the Provancher collection under the name *canadensis*.

Exenterus nigrifrons Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 225. "♀" = ♂.

Exenterus flavissimus Cushman, 1940. U. S. Dept. Agr. Misc. Pub. 354: 12. ♂, ♀.

Taxonomy: Short, 1959. U. S. Natl. Mus., Proc. 110: 425 (final-instar larva, as *canadensis*).

—Finlayson, 1960. Canad. Ent. 92: 26-28 (final-instar larva, as *canadensis*). —Barron, 1975. Nat. Canad. 102: 440.

Biology: Barclay, 1938. Ent. Soc. Ontario, Ann. Rpt. 69: 29-31 (as "*canadensis* Auct.>").

—Bobb, 1965. Jour. Econ. Ent. 58: 925 (as *canadensis*).

pinii Cushman. Nebr., Mont., Colo., Idaho, Ariz., Nev., Calif. Host: *Neodiprion eduliculus* Ross.

Exenterus pinii Cushman, 1940. U. S. Dept. Agr. Misc. Pub. 354: 13. ♀.

platypis Cushman. Que., N. C., Ont., Minn. Host: *Neodiprion pratti banksianae* Roh.

Exenterus platypis Cushman, 1943. Canad. Ent. 75: 173. ♀.

Taxonomy: Finlayson, 1963. Canad. Ent. 95: 489-490 (final-instar larva).

Biology: Griffiths, 1960. Canad. Ent. 92: 654.

tricolor Roman. Europe. Introduced in N. B. (1937-1939), Que. (1936-1940), N. H. (1938), and Vt. (1939); a 1946 recovery in N. B. indicates that the species may be established there.

Host: *Gilpinia hercyniae* (Htg.). The host listed was the target species for introductions in North America.

Exenterus tricolor Roman, 1913. Ent. Tidskr. 34: 127. ♂, ♀.

Taxonomy: Finlayson, 1960. Canad. Ent. 92: 928-929 (final-instar larva).

Biology: Morris, Cameron, and Jepson, 1937. Bul. Ent. Res. 28: 369-375. —Barclay, 1938. Ent. Soc. Ontario, Ann. Rpt. 69: 29-31.

tsugae Cushman. Mont., B. C., Idaho, Oreg., Calif. Host: *Neodiprion tsugae* Midd., *N. scutellatus* Roh.

Exenterus tsugae Cushman, 1940. U. S. Dept. Agr. Misc. Pub. 354: 13. ♂, ♀.

Biology: Furniss and Dowden, 1941. Jour. Econ. Ent. 34: 49.

vellicatus Cushman. Newfoundland (insular), N. S., P. E. I., N. B., Que., Maine, N. Y., Ont.

Introduced. Host: *Gilpinia hercyniae* (Htg.).

Exenterus vellicatus Cushman, 1940. U. S. Dept. Agr. Misc. Pub. 354: 7. ♂, ♀.

Taxonomy: Finlayson, 1960. Canad. Ent. 92: 928-930 (final-instar larva).

Biology: Morris, Cameron, and Jepson, 1937. Bul. Ent. Res. 28: 377 (as *Exenterus* sp.).

walleyi Cushman. N. B., Ont., Ind. Host: *Neodiprion abietis* (Harris), *N. nanulus nanulus* Schedl, *N. sertifer* (Geoff.).

Exenterus walleyi Cushman, 1943. Canad. Ent. 75: 171. ♂, ♀.

Taxonomy: Finlayson, 1960. Canad. Ent. 92: 29-30 (final-instar larva).

Genus ERIDOLIUS Foerster

Anisoctenion Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 194.

Type-species: *Acrotomus xanthopus* Holmgren. By subsequent monotypy from inclusion by Schmiedeknecht, 1907. The type-species is considered to be a synonym of *Eridolius alacer* (Gravenhorst).

Eridolius Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 195.

Type-species: *Exenterus pygmaeus* Holmgren. By subsequent monotypy from inclusion by Thomson, 1883.

Until recently the name *Cteniscus* was applied to this genus because *Eridolius aurifluus* (Haliday) was incorrectly regarded as the type-species of *Cteniscus* (see discussion under *Cteniscus*). *Eridolius* is Holarctic with many species of boreal distribution. Many of the species occurring in the Nearctic Region are undescribed.

- Taxonomy: Mason, 1962. *Canad. Ent.* 94: 1291 (generic limits, as *Cteniscus*). — Townes, 1969. *Amer. Ent. Inst., Mem.* 11: 191-192.
- clypeatus** (Cresson). Que. w. to Alaska, s. to Pa., Colo., and Oreg.
Cteniscus clypeatus Cresson, 1868. *Amer. Ent. Soc., Trans.* 2: 113. ♀.
- consors** (Cresson). Que., N. H., Conn., Md., Ont., Tex., Nev.
Cteniscus consors Cresson, 1868. *Amer. Ent. Soc., Trans.* 2: 113. ♀.
- flavicoxae** (Cresson). Mass., Del.
Cteniscus flavicoxae Cresson, 1864. *Ent. Soc. Phila., Proc.* 3: 283. ♀.
- Taxonomy: Mason, 1962. *Canad. Ent.* 94: 1291.
- gnathoxanthus** (Gravenhorst). Que., Alaska; Europe.
Tryphon gnathoxanthus Gravenhorst, 1829. *Ichn. Europaea*, v. 2, p. 147. ♀.
- marginatus** (Thomson). Transcont. in Huds. Zone; Europe.
Cteniscus marginatus Thomson, 1883. *Opusc. Ent.* 9: 892. ♂, ♀.
Cteniscus nigrofemoralis Ashmead, 1902. *Wash. Acad. Sci., Proc.* 4: 211. ♂.
- Taxonomy: Roman, 1909. *In* Hamburg, *Naturw. Unters. Sarekgebirges*, v. 4, p. 286. — Mason, 1951. *In* Muesebeck, Krombein, and Townes, U. S. Dept. Agr., Agr. Monog. 2: 227 (syn.).
- orbitalis** (Cresson). Que., Maine, N. Y., Pa., Ont.
Cteniscus orbitalis Cresson, 1864. *Ent. Soc. Phila., Proc.* 3: 293. "♂" = ♀.
- praeustus** (Holmgren). Alaska, Wash.; Eurasia.
Ereterus praeustus Holmgren, 1857 (1855). *Svenska Vetensk.-Akad. Handl. (n. f.)* 1: 245. ♀.
- pygmaeus** (Holmgren). Transcont. in Arctic (s. part) and Huds. Zones; n. Europe.
Ereterus pygmaeus Holmgren, 1857 (1855). *Svenska Vetensk.-Akad. Handl. (n. f.)* 1: 245. ♀.
- Microplectron alaskensis* Ashmead, 1902. *Wash. Acad. Sci., Proc.* 4: 212. ♂.
- Taxonomy: Mason, 1951. *In* Muesebeck, Krombein, and Townes, U. S. Dept. Agr., Agr. Monog. 2: 228 (syn.).

TRIBE IDIOGRAMMATINI

This tribe includes *Idiogramma* and the fossil genus *Urotryphon* described by Townes (1973) from Cretaceous amber (80 to 90 million years old) collected in the U. S. S. R.

Taxonomy: Townes, 1973. *Ent. Soc. Wash., Proc.* 75: 282-287.

Genus IDIOGRAMMA Foerster

Idiogramma Foerster, 1867. *In* Kirchner, *Cat. Hym. Europae*, p. 67. Nomen nudum. The nomen nudum *Idiogramma euryops* Foerster also appears on p. 67.

Idiogramma Foerster, 1868. *Naturh. Ver. Rheinlande, Verh.* 25: 163.

Type-species: *Idiogramma euryops* Schmiedeknecht. By subsequent monotypy from inclusion by Schmiedeknecht, 1868.

Macrochasmus Thomson, 1888. *Opusc. Ent.* 12: 1279.

Type-species: *Macrochasmus alysianus* Thomson. Monotypic.

Lysiognatha Ashmead, 1895. *Ent. Soc. Wash., Proc.* 3: 276.

Type-species: *Lysiognatha comstockii* Ashmead. Monotypic.

Members of this Holarctic genus parasitize larvae of *Xyela* in the staminate cones of *Pinus*. Oviposition occurs at about the time when the *Xyela* larval development is nearing completion, which apparently just precedes the time the host pine sheds its pollen. The eggs of *Idiogramma* hatch after the host has dropped to the ground and formed its earthen pupal cell.

Revision: Cushman, 1937. *Wash. Acad. Sci., Jour.* 27: 438-444. — Townes and Townes, 1951. *Ent. Soc. Wash., Proc.* 53: 308-313.

Taxonomy: Perkins, 1940. *Entomologist* 73: 55. — Cushman, 1942. *Ent. Soc. Wash., Proc.* 44: 54 (generic syn.).

Biology: Burdick, 1961. *Calif. Univ., Pubs. Ent.* 17: 319-320.

- bridwelli** (Cushman). Md., Va., Fla. Ecology: Associated with *Pinus virginiana*. Host: *Xyela* sp.
Lysiognatha bridwelli Cushman, 1937. Wash. Acad. Sci., Jour. 27: 444. ♂, ♀.
- comstockii** (Ashmead). Ont., N. Y., Md., D. C., Va. Ecology: Associated with *Pinus divaricata* and *P. virginiana*.
Lysiognatha comstockii Ashmead, 1895. Ent. Soc. Wash., Proc. 3: 276. ♂, ♀.
Lysiognatha sulcata Cushman, 1937. Wash. Acad. Sci., Jour. 27: 442. ♂, ♀.
- contortae** Townes. Utah, Ariz., Calif. Ecology: Associated with *Pinus contorta*, *P. muricata*, and *P. ponderosa*.
Idiogramma contortae Townes, 1951. In Townes and Townes, Ent. Soc. Wash., Proc. 53: 310. ♂, ♀.
- fraterna** Townes. Utah, Ariz., Calif. Ecology: Associated with *Pinus contorta* and *P. ponderosa*.
Idiogramma fraternus Townes, 1951. In Townes and Townes, Ent. Soc. Wash., Proc. 53: 312. ♂, ♀.
- longicauda** (Cushman). Md., Va., Ga., Ala. Ecology: Associated with *Pinus taeda* and *P. virginiana*. Host: *Xyela* sp.
Lysiognatha longicauda Cushman, 1937. Wash. Acad. Sci., Jour. 27: 443. ♂, ♀.
- titana** Burdick. Calif. Ecology: Associated with *Pinus coulteri*.
Idiogramma titana Burdick, 1958. Pan-Pacific Ent. 34: 159. ♂, ♀.

SUBFAMILY EUCEROTINAE

Genus EUCEROS Gravenhorst

Euceros Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 368.

Type-species: *Euceros crassicornis* Gravenhorst. Monotypic.

Eumesius Westwood, 1840. Introd. Mod. Classif. Ins., v. 2, p. 153. Unnecessary n. name for

Euceros Gravenhorst, which is not preocc. by *Eucera* Scopoli, 1770.

Omaloceros Giraud, 1857. Zool.-Bot. Gesell. Wien, Verh. 7: 163. Unnecessary n. name for *Euceros* Gravenhorst.

Tautozelus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 212.

Type-species: *Euceros egregius* Holmgren. Included and desig. by Perkins, 1962.

The type species is regarded as a synonym of *E. serricornis* Haliday.

Eucerus (!) Verhoeff, 1892. Ent. Nachr. 18: 4.

Pseudasthenara Uchida, 1930. Hokkaido Imp. Univ., Faculty Agr., Jour. 25: 276.

Type-species: *Asthenara rufocincta* Ashmead. Monotypic and orig. desig.

This is the only genus in the Eucerotinae; it is moderate sized, and its distribution is Holarctic, Australian (one undescribed sp.), and Ethiopian (one Madagascan sp.). The genus was placed in the Tryphoninae (as tribe Eucerotini) by Townes (1969), apparently based upon the similarities between the final instar larvae of *Euceros* and *Exenterus* (cf. Finlayson [1960, p. 34]), but the egg, the early larval instars, the adult, and the biology of *Euceros* differ so greatly from those of Tryphoninae or any other Ichneumonidae that the genus is here placed in a subfamily of its own, as was done by Perkins (1959). Barron (1977) has published a revision of the Nearctic species; I regret that it was not feasible for me to revise the present treatment of *Euceros* accordingly.

Euceros eggs are stalked and greatly resemble those of Chrysopidae; they are deposited on foliage near early-instar larvae of a carrier host (defoliating sawflies or Lepidoptera). The planidial first larval instar of *Euceros* remains upon its empty chorion at the top of the egg stalk until it is able to attach to a passing carrier host. Although a *Euceros* planidium obtains enough fluid from the carrier host to sustain itself, it is an obligate hyperparasite and cannot develop further on the carrier host; its chance for completing its development depends upon the host being parasitized (presumably most often subsequently) by another ichneumonid (it seems reasonable to expect rearings from larger Braconidae also). The time at which a *Euceros* planidium enters its true host is not known for certain and may vary according to the true host's mode of parasitism (true hosts include external as well as internal parasites). When the true host is an internal larval parasite (e.g. *Phobocampe* or *Olesicampe*), it appears likely that the first-instar *Euceros* planidium remains externally attached to the carrier host until the mature larva of the

true host has killed the carrier host and emerged from it. When the true host is an internal larval-pupal parasite (a species of Anomaloniinae being recorded as a host of *Euceros frigidus* Cresson) it would be necessary for the *Euceros* planidium to bore through the integument of the carrier host in order to reach the true host. There appear to be seven or eight larval instars; during the first four stadia, the *Euceros* larvae are internal parasites, but during the last three or four stadia they are external parasites.

Revision: Barron, 1977 (1976). Nat. Canad. 103: 285-375.

Taxonomy: Perkins, 1959. Handb. Ident. Brit. Ins., v. 7, pt. 2 (ai), p. 14. — Townes, 1969. Amer. Ent. Inst., Mem. 11: 193-194.

Morphology: Finlayson, 1960. Canad. Ent. 92: 34, 37 (final-instar larva). — Tripp, 1961. Canad. Ent. 93: 41-43, 45-48, 49, 56, 57 (ovariole, egg, first-instar larva, final-instar larva).

— Varley, 1965 (1964). Ent. Monthly Mag. 100: 114, 115-116 (first-instar larva).

albomarginatus Cushman. N. H., N. Y., Pa., Ohio.

Scorpiorus(!) *albomarginatus* Ashmead, 1902. In Slosson, Ent. News 13: 320. Nomen nudum.

Euceros albomarginatus Cushman, 1922. U. S. Natl. Mus., Proc. 61 (8): 12. ♀.

angulicornis Walley. B. C.

Euceros angulicornis Walley, 1932. Canad. Ent. 64: 246. ♂, ♀.

canadensis Cresson. Que., N. H., Vt., N. Y., Ont., Ohio, Mich.

Euceros Canadensis Cresson, 1869. Canad. Ent. 1: 103. ♀.

digitalis Walley. Ont.

Euceros digitalis Walley, 1932. Canad. Ent. 64: 242. ♂.

faciens Davis. Wash., Oreg. Ecology: Reared from a parasite of *Neodiprion tsugae* Midd.

Euceros faciens Davis, 1897. Amer. Ent. Soc., Trans. 24: 256. ♂.

flavescens Cresson. Conn., W. Va.

Euceros flavescens Cresson, 1869. Canad. Ent. 1: 105. ♂, ♀.

frigidus Cresson. Que., Maine, Ont., Man., B. C. Host: *Casinaria semiothisae* Wly.?, *Endasys subclavatus* (Say), *Lamachus* sp., *Olesicampe lophyri* (Riley), sp. of Anomaloniinae near *Therion*, Tryphoninae.

Euceros frigidus Cresson, 1869. Canad. Ent. 1: 105. ♀.

Biology: Finlayson, 1960. Canad. Ent. 92: 34, 36. — Tripp, 1961. Canad. Ent. 93: 40-58.

medialis Cresson. Que. s. to N. C., w. to Alta.

Euceros medialis Cresson, 1869. Canad. Ent. 1: 105. ♀.

neodiprioni Walley. Que., Md. Ecology: Reared from a parasite of *Neodiprion* sp.

Euceros neodiprioni Walley, 1932. Canad. Ent. 64: 245. ♂, ♀.

obesus Davis. N. Y., Ill.

Euceros obesus Davis, 1897. Amer. Ent. Soc., Trans. 24: 255. ♀.

sanguineus Davis. Colo.

Euceros sanguineus Davis, 1897. Amer. Ent. Soc., Trans. 24: 255. ♂, ♀.

thoracicus Cresson. Que., Maine, N. H., Conn., N. Y., Pa., Ont., Man. Ecology: Reared from parasites of *Caripeta divisata* Wlk., *Hydriomena divisaria* (Wlk.), *Semiothisa "granitata"* auct., *Neodiprion* sp., *N. swaini* Midd., *N. sp. in virginiana* complex, and *Pristiphora* (Htg.).

Euceros Couperii Cresson, 1869. Canad. Ent. 1: 104. ♂.

Euceros thoracicus Cresson, 1869. Canad. Ent. 1: 105. ♂.

Euceros couperi Dalla Torre, 1901. Cat. Hym., v. 3, p. 326. Emend.

Scorpiorus(!) *flavopictus* Ashmead, 1902. In Slosson, Ent. News 13: 6. Nomen nudum.

Euceros vierecki Hertzog, 1909. Ent. News 20: 245. "♂" = ♀.

Euceros decorus Walley, 1932. Canad. Ent. 64: 244. ♂, ♀.

SUBFAMILY ADELOGNATHINAE

Genus ADELOGNATHUS Holmgren

Adelognathus Holmgren, 1857 (1855). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 196.

Type-species: *Adelognathus brevicornis* Holmgren. Desig. by Viereck, 1912.
Pammicra Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 181.

Type-species: *Hemiteles dorsalis* Gravenhorst. By subsequent monotypy from inclusion by Thomson, 1883.

Synaema Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 201.

Type-species: *Adelognathus brevicornis* Holmgren. Monotypically included and desig. by Viereck, 1914. Perkins (1962) incorrectly stated that species had been included by Szepligeti (1911), but Szepligeti merely placed *Synaema* as a synonym of *Adelognathus*, which does not constitute inclusion of species.

Notomeris Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 201.

Type-species: *Adelognathus difformis* Holmgren. By subsequent monotypy from inclusion by Thomson, 1888. According to Perkins (1943) the species identified as *A. difformis* Holmgren by Thomson is *A. thomsoni* Schmiedeknecht.

Cnemischys Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 201.

Type-species: *Adelognathus (Cnemischus) pilosus* Thomson. Desig. by Townes, 1944 from two species included by Thomson, 1888.

Pammicrus Thomson, 1883. Opusc. Ent. 9: 880. Emend.

Cnemischus Thomson, 1888. Opusc. Ent. 12: 1277. Emend.

Townes (1969) treated *Adelognathus* as the only genus in the Adelognathinae; the genus is Holarctic and of moderate size. Several species have been reared from larvae or sawflies; in one case the *Adelognathus* larvae are known to have fed externally and gregariously.

Taxonomy: Szepligeti, 1911. In Wytsman, Gen. Ins., fasc. 144, p. 50. —Perkins, 1943. Roy.

Ent. Soc. London, Trans. 93: 95-97. —Townes and Townes, 1951. In Muesebeck *et al.*, U. S.

Dept. Agr., Agr. Monog. 2: 209-210. —Perkins, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 11:

414, 439, 442, 455. —Townes, 1969. Amer. Ent. Inst., Mem. 11: 207-208.

americanus Cushman. N. H. Ecology: The holotype was collected on the alpine region of Mt. Washington, N. H.

Trachyporthus(!) *americanus* Ashmead, 1897. In Slosson, Ent. News 8: 237. Nomen nudum.

Adelognathus americanus Cushman, 1922. U. S. Natl. Mus., Proc. 61 (8): 2. ♀.

brevicornis Holmgren. Que., N. Y.; Europe.

Adelognathus brevicornis Holmgren, 1857 (1855). Svenska Vetesk.-Akad. Handl. (n. s.) 1: 197. ♂, ♀.

Adelognathus limbatus Thomson, 1888. Opusc. Ent. 12: 1275. ♀.

dorsalis (Gravenhorst). Que., Maine, N. H., Md., N. C., Ohio, Mich.; Europe.

Hemiteles dorsalis Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 838. ♂, ♀.

Hemiteles tener Provancher, 1874. Nat. Canad. 6: 333. "♂" = ♀.

Notomiris(!) *glabrosus* Davis, 1896. In Slosson, Ent. News 7: 264. Nomen nudum.

Notomeris glabrosus Davis, 1897. Amer. Ent. Soc., Trans. 24: 242. ♀.

Adelognathus deganti Cushman, 1933. U. S. Natl. Mus., Proc. 82 (14): 14. ♀.

flavipictus Davis. N. Y., W. Va., Mich., Ill., Minn., s.w. B. C., Oreg. Host: "*Nematus*" sp. The male syntype in the collection of the U. S. Natl. Museum, which bears Hopkins W. Va. no. 3494, was reared by Hopkins (1893) from larvae of "*Nematus* sp. a" collected in Monongalia Co., W. Va. on "Yellow Locust" (= *Gleditsia triacanthos*?); it emerged on May 30.

Adelognathus briviceps Ashmead, 1893. In Hopkins, W. Va. Agr. Expt. Sta., Bul. 32: 216. Nomen nudum.

Adelognathus flavipictus Davis, 1897. Amer. Ent. Soc., Trans. 24: 242. ♂, ♀.

pallipes (Gravenhorst). Que., N. H., N. Y., Md., D. C., N. C., Minn.; Europe. Host:

Macremphytus testaceus (Nort.), sawfly larvae.

Plectiscus pallipes Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 981. ♀.

Adelognathus Ruthei Holmgren, 1857 (1855). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 198. ♂, ♀.

Catalytus pallipes Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 419. ♂, ♀. Preocc. in *Adelognathus* by Gravenhorst, 1829 and Holmgren, 1857.

Plectiscus pallidipes Dalla Torre, 1901. Cat. Hym., v. 3, p. 24. Emend. of *P. pallipes* Gravenhorst.

Hemiteles pallidipes Dalla Torre, 1902. Cat. Hym., v. 3, p. 660. Emend. of *C. pallipes* Ashmead; preocc. in *Adelognathus* by Dalla Torre, 1901, p. 24 and p. 31.
Adelognathus persimilis Cushman, 1922. U. S. Natl. Mus., Proc. 61 (8): 3. N. name for *C. pallipes* Ashmead.

Taxonomy: Thomson, 1883. Opusc. Ent. 9: 878-879 (syn.). —Townes, 1944. Amer. Ent. Soc., Mem. 11: 144 (syn.).

SUBFAMILY XORIDINAE

There are four genera, all of which have Nearctic species.

Revision: Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 428-444, 451-460.

Genus ISCHNOCEROS Gravenhorst

Ischnoceros Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 949.

Type-species: *Ichneumon rusticus* Geoffroy. Desig. by Viereck, 1914.

Mitroboris Holmgren, 1859. Svenska Vetensk.-Akad., Ofvers. af ... Forhandl. 16: 131.

Type-species: *Xorides* (*Odontomerus*) *cornutus* Ratzeburg. Monotypic. The type-species is regarded as a synonym of *Ischnoceros rusticus* (Geoffroy).

This is a small Holarctic genus.

clivulus Townes. Northeastern Calif.

Ischnoceros clivulus Townes, 1957. Ent. Soc. Wash., Proc. 59: 21. ♀.

Genus APLOMERUS Provancher

Platysoma Provancher, 1885. Canad. Ent. 17: 115. Preocc. by Leach, 1817; Lienard, 1832; and Brandt, 1835.

Type-species: *Platysoma tibialis* Provancher. Monotypic.

Aplomerus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 119. N. name for *Platysoma* Provancher.

Anodontomerus Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 61, 163. Unnecessary n. name for *Aplomerus* Provancher; Ashmead did not state his reason for proposing his n. name for *Aplomerus* (on page 61 he erroneously indicated that he was describing a "new genus"), and one can only suppose that he may have thought *Aplomerus* to be preocc. by *Aplomera* Macquart, 1839.

Haplomerus Dalla Torre, 1901. Cat. Hym., v. 3, p. 392. Invalid name proposed in synonymy.

This is a small Holarctic and Neotropic (one undescribed Mexican sp.) genus.

Revision: Townes (H.) and Townes (G.), 1960. In Townes (H.) and Townes (M.), U. S. Natl. Mus. Bul. 216 (pt. 2): 439-447.

arugosus Townes and G. Townes. Northwestern Wyo. Ecology: The unique holotype was collected at an elevation of 6500 ft. in Shoshone Canyon, Wyo.

Aplomerus arugosus Townes (H.) and Townes (G.), 1960. In Townes (H.) and Townes (M.), U. S. Natl. Mus. Bul. 216 (pt. 2): 446. ♀.

buprestivorus Rohwer. Northwestern Ariz., s.w. Oreg., n.e. and s.w. Calif. Ecology: The holotype and paratype were collected as cocooned pupae or prepupae in a buprestid gallery in *Cercocarpus parvifolius* at Ashland, Oreg.

Aplomerus buprestivorus Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 453. ♀.

lineatulus (Say). Que. s. to e. N. C., w. to Wis., Iowa, and n.e. Kans.

Anomalon lineatulus Say, 1836. Boston Jour. Nat. Hist. 1: 244. ♂.

Aplomerus foutsii Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 454. ♀.

Aplomerus decorus Viereck, 1926. Canad. Ent. 58: 55. ♀.

Taxonomy: Cushman and Gahan, 1921. Ent. Soc. Wash., Proc. 23: 157 (syn.). —Townes, 1944. Amer. Ent. Soc., Mem. 11: 115 (syn.).

- robustus** Townes and G. Townes. Southwestern B. C., w. Wash., w. Oreg., n. Calif. Ecology: Specimens have been reared from dead coniferous trees infested with *Buprestidae* and *Cerambycidae*.
Aplomerus robustus Townes (H.) and Townes (G.), 1960. In Townes (H.) and Townes (M.), U. S. Natl. Mus. Bul. 216 (pt. 2): 443. ♂, ♀.
- tibialis** (Provancher). Southern B. C., Oreg., n. Calif. Ecology: A large series was collected on fallen trunks of *Pinus contorta* which had been killed by *Dendroctonus* and had disintegrated to the point of losing nearly all their bark.
Platysoma tibialis Provancher, 1885. Canad. Ent. 17: 115. ♀.

Genus ODONTOCOLON Cushman

Odontomerus Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 851. Preocc. by Leach, 1819.

Type-species: *Ichneumon dentipes* Gmelin. Desig. by Westwood, 1840.

Odontocolon Cushman, 1942. Ent. Soc. Wash., Proc. 44: 179. N. name for *Odontomerus* Gravenhorst.

This is a large Holarctic genus.

Revision: Townes and Townes, 1960. U. S. Natl. Mus. Bul. 216 (pt. 2): 448-489.

abdominale abdominale (Cresson). Southeastern Wyo., Colo., n.w. Mont., n. Idaho, n.e. Utah, Ariz.

Odontomerus abdominalis Cresson, 1865. Ent. Soc. Phila., Proc. 4: 289. ♂, ♀.

abdominale fergusonii Townes. Southwestern Alta., s.e. B. C., n.e. Wash.

Odontocolon abdominale fergusonii Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 464. ♂, ♀.

aethiops (Cresson). Colo., s.w. Alta., n.w. Mont., s.e. B. C., n. Idaho, n. Calif. Host: *Cerambycid* in *Pinus contorta*.

Odontomerus aethiops Cresson, 1865. Ent. Soc. Phila., Proc. 4: 289. ♂, ♀.

alaskense (Rohwer). South-coastal Alaska. Closely related to the European *O. punctulatum* (Thomson); *alaskense* had been suppressed as a synonym of *punctulatum* by Townes (1944) but was removed from synonymy by Townes and Townes (1960).

Odontomerus alaskensis Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 360. ♀.

Taxonomy: Townes, 1944. Amer. Ent. Soc., Mem. 11: 112-113. —Townes and Townes, 1960. U. S. Natl. Mus. Bul. 216 (pt. 2): 460.

albotibiale (Bradley). N. S. s. to n. Fla., w. to Minn. and Iowa.

Odontomerus albotibialis Bradley, 1918. Brooklyn Ent. Soc., Bul. 13: 103. ♀.

Odontomerus striatus Cushman, 1930. U. S. Natl. Mus., Proc. 77 (3): 14. ♀. Preocc. by Brulle, 1846.

Odontocolon aciculatus Cushman, 1942. Ent. Soc. Wash., Proc. 44: 182. N. name for *Odontomerus striatus* Cushman.

Taxonomy: Cushman, 1942. Ent. Soc. Wash., Proc. 44: 182 (misidentification corrected).

atripes (Rohwer). N. S. w. to w. Alta., s. to e. N. C., n.e. Ala., and n. Ill.

Odontomerus atripes Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 358. ♂, ♀.

bicolor (Cresson). Pa., n. Va., n.w. S. C., n. Ga., n.e. Ala., e. Tex. Ecology: Two specimens from Call, Texas were apparently collected as cocooned pupae or prepupae from beneath the bark of logs and stumps of *Pinus palustris* which had been cut several years before.

Odontomerus bicolor Cresson, 1870. Amer. Ent. Soc., Trans. 3: 169. ♀.

brevicaudum (Cushman). Southwestern Alta., n.w. Mont., n. Idaho, s. B. C., Wash.

Odontomerus brevicaudus Cushman, 1930. U. S. Natl. Mus., Proc. 77 (3): 7. ♀. Because Cushman used the spelling *brevicaudus* instead of *brevicauda*, the name is to be regarded as an adjective rather than a noun.

canadense (Provancher). N. S., Que., Maine, N. H., N. Y., w. N. C., Ont., Mich., n.e. Minn. Host: *Serropalpus* sp. in Fraser fir.

Odontomerus Canadensis Provancher, 1877. Nat. Canad. 9: 16. ♀.

Odontomerus tibialis Cushman, 1930. U. S. Natl. Mus., Proc. 77 (3): 11. ♂, ♀.

- Taxonomy:** Cushman, 1942. Ent. Soc. Wash., Proc. 44: 182 (syn. and correction of misidentification of *canadense*).
- cilipes** Townes. Southeastern Ariz. Ecology: Known only from the holotype which was collected in the Chiricahua Mts., Ariz.
Odontocolon cilipes Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 454. ♀.
- curtum** Townes. Northwestern Calif. Ecology: Two of the paratypes emerged from "Laurel," presumably *Umbellaria californica*.
Odontocolon curtum Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 470. ♂, ♀.
- depressum** Townes. Colo. Ecology: Known only from the holotype which was collected at an elevation of 9400 ft. in Rocky Mt. Natl. Park, Colo.
Odontocolon depressum Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 459. ♀.
- dichroum** (Rohwer). Northern Idaho, s. B. C., Wash., Oreg., n. Calif.
Odontomerus dichrous Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 361. ♀.
- dreisbachi** Townes. Northwestern Mich. Ecology: Known only from the holotype which was collected on Isle Royale, Mich.
Odontocolon dreisbachi Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 480. ♀.
- formicoides** Townes. Northern Ariz. Ecology: Known only from the holotype which was collected in a stand of *Populus*, *Picea*, and *Abies* at an elevation of 9700 ft. on Humphreys Peak, Ariz.
Odontocolon formicoides Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 458. ♂.
- mellipes** (Say). Mass. w. to S. Dak., s. to e. and w. N. C., n.w. S. C., and n.e. Kans. Host: *Parandra* (*Neandra*) *brunnea* (F.).
Anomalon mellipes Say, 1829. Contrib. Maclurian Lyceum to Arts and Sci. 1: 75. ♀.
Odontomerus errans Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 360. ♀.
- ochropus** Townes. Que. w. to s. B. C., s. to n.w. S. C., e. Tenn., s. Minn., Ariz. and n. Idaho. Ecology: Three paratypes from Falls Church, Va. emerged from pine infested with *Anoplopera rubrica* (Say) and *A. vagans* (Oliv.); one paratype from Inglenook, Pa. emerged from hemlock infested with *A. rubrica* and *Metacmaecops vittatus* (Swed.); one paratype from D. C. was collected as an adult in its cocoon, which was extracted from rotten beech wood.
Odontocolon ochropus Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 482. ♂, ♀.
- parvum** Townes. Northwestern Wyo., n. Colo., n. Idaho, s. B. C., Wash., n.w. Oreg.
Odontocolon parvum Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 472. ♂, ♀.
- polymorphum** Cushman. Southwestern B. C., n.w. Wash., w. Oreg. Ecology: Thirteen paratypes were reared from a branch of *Alnus* (presumably *rubra*) infested with Anobiidae, and two other specimens emerged from a board of *Umbellaria californica* infested by *Lycus caricollis* LeC. and the anobiid, *Ptilinus basilis* LeC. The adults can be wingless, brachypterous (brachypterous male not known), or fully winged.
Odontocolon polymorphum Cushman, 1942. Ent. Soc. Wash., Proc. 44: 180. ♂, ♀.
- pullum** Townes. Southern B. C., e. Calif. The four type specimens included one wingless female.
Odontocolon pullum Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 456. ♂, ♀.
- punctatum** (Cushman). Northwestern Wyo., n. Idaho, s. B. C., w. Wash., e. Oreg., and e. Calif. Ecology: Notes in the U. S. Natl. Museum indicate that the holotype was "emerging? from [a] wood wasp? burrow in [a] dead grand fir," from which *Leptura oblitterata* Hald. also emerged (cf. Cushman, 1930); one specimen was extracted from *Abies* along with

two immature adults and a larva of a siricid (= "*Tremex*") and is labeled (incorrectly?) as being a parasite of "*Tremex*."

Odontomerus punctatus Cushman, 1930. U. S. Natl. Mus., Proc. 77 (3): 12. ♀.

sierrae Townes. Eastern Calif.

Odontocolon sierrae Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 471. ♂, ♀.

strangaliae (Rohwer). Que. s. to N. C., w. to e. Minn. and central Ala. Host: *Strangalina luteicornis* (F.) in grape, "*Leptura*" sp. in rotten oak branch.

Odontomerus strangaliae Rohwer, 1917. U. S. Natl. Mus., Proc. 53: 158. ♀.

vicinum (Cresson). Que. w. to s.e. B. C., s. to n. Va., s. Ohio, n. Colo., and e. Oreg. Host:

Dicerca divaricata (Say) in *Alnus* sp., *D. divaricata*? in *Betula nigra*, *D. obscura* F. in hackberry.

Odontomerus vicinus Cresson, 1870. Amer. Ent. Soc., Trans. 3: 168. ♂.

Genus XORIDES Latreille

There are ten subgenera, only two of which have Nearctic species.

Revision: Townes and Townes, 1960. U. S. Natl. Mus. Bul. 216 (pt. 2): 489-530 (subgenera of world and Nearctic spp.).

Genus XORIDES Subgenus EXOMUS Townes

Xorides subg. *Exomus* Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 496.

Type-species: *Anomalon humerale* Say sensu Townes and Townes (1960). Orig. desig.

A single variable species in known.

humeralis (Say). Newfoundland (Labrador) w. to B. C., s. to Fla., Tex., s.e. Ariz., and s. Calif.; Mexico. Host: *Neoclytus acuminatus* (F.) in *Ilex opaca*, *Phymatodes testaceus* (L.) in red oak, *Xylotrechus undulatus* (Say)? in *Abies lasiocarpa*. The six "subspecies" of Townes and Townes (1960) are too poorly defined and based upon too few specimens to be worth recognizing.

Anomalon humerale Say, 1829. Contrib. Maclurian Lyceum to Arts and Sci. 1: 74. ♀.

Xylonomus australis Cresson, 1870. Amer. Ent. Soc., Trans. 3: 167. ♀.

Xylonomus Lavallensis Provancher, 1874. Nat. Canad. 6: 59. ♀.

Xylonomus (Moerophora) piceatus Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 357. N. syn.

Xorides (Exomus) humeralis mexicanus Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 497. ♀. N. syn.

Xorides (Exomus) humeralis sierrae Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 500. ♂, ♀. N. syn.

Xorides (Exomus) humeralis excomptus Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 500. ♂, ♀. N. syn.

Xorides (Exomus) humeralis chiriciensis Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 501. ♀. N. syn.

Genus XORIDES Subgenus Xorides Latreille

Xorides Latreille, 1809. Gen. Crust. Ins., v. 4, p. 4.

Type-species: *Ichneumon indicatorius* Latreille. Monotypic.

Xylonomus Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 819.

Type-species: *Ichneumon irrigator* Fabricius. Desig. by Curtis, 1831.

Sterotrichus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 169.

Type-species: *Xylonomus pilicornis* Gravenhorst. By subsequent monotypy from inclusion by Brischke, 1880. The type-species is regarded as a synonym of *X. fuligator* (Thunberg).

Sichelia Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 169.

Type-species: *Xylonomus filiformis* Gravenhorst. By subsequent monotypy from inclusion by Schmiedeknecht, 1888.

Rhadina Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 170. Preocc. by Billberg, 1828.

Type-species: *Xylonomus ater* Gravenhorst. Monotypically included and design. by Schmiedeknecht, 1888.

Rhadinopimpla Schulz, 1906. Zool. Ann. 4: 23. N. name for *Rhadina* Foerster.

Xylonomimus Clement, 1938. Festschr. Embrik Strand, v. 4, p. 539.

Type-species: *Xylonomus gracilicornis* Gravenhorst. Orig. design.

Neoxylonomus Clement, 1838. Festschr. Embrik Strand, v. 4, p. 566. Preocc. by Szepligeti, 1914.

Type-species: *Neoxylonomus strandi* Clement. Monotypic.

Amphixylonomus Benoit, 1952. Soc. Ent. de Belg., Bul. et Ann. 88: 136. Described as a subgenus, but treated nomenclaturally as a genus.

Type-species: *Amphixylonomus kondiensis* Benoit. Monotypic and orig. design.

This is a large subgenus of Holarctic, Oriental, Australian? (one sp. described as being from New Guinea), and Ethiopian (one sp.) distribution.

albopictus (Cresson). Que. s. to n. Ga., w. to central N. Dak., e. Nebr., and n.e. Tex. Ecology:

Parasite of Coleoptera which bore in hardwoods. Host: *Saperda discoidea* F., *S. tridentata* Oliv., *Scolytus multistriatus* (Mar.)?

Xylonomus albopictus Cresson, 1870. Amer. Ent. Soc., Trans. 3: 168. ♀.

Xorides Canadensis Provancher, 1875. Nat. Canad. 7: 248. ♂.

Xylonomus (Moerophora) duplicatus Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 356. ♂.

atrox Townes. Southeastern B. C. Known only from the holotype.

Xorides (Xorides) atrox Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 520. ♀.

boharti Townes. Northwestern Calif.

Xorides (Xorides) boharti Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 508. ♂, ♀.

calidus (Provancher). Que. w. to s.e. Sask., s. to e. N. C. and Tex. Host: *Amniscus maculata* (Say) in *Castanea dentata*, *Curius dentatus* Newm. in juniper, cerambycid in *Castanea dentata*.

Xylonomus calidus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 119. ♀.

Xylonomus pulcher Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 450. ♀.

Aplomerus nasonii Davis, 1895. Amer. Ent. Soc., Trans. 22: 32. ♂.

Xorides callidus (!) Townes and Townes, 1951. U. S. Dept. Agr., Agr. Monog. 2: 205.

californicus (Cresson). Colo., n. N. Mex., n. Ariz., w. Mont., n. Idaho, s. B. C., Wash., Oreg., n. Calif. Host: *Buprestis viridisuturalis* N. and W. in *Populus trichocarpa*, *Chalcophora angulicollis* (LeC.) in *Pinus ponderosa*, *Alaus oculatus* (L.)?, sesiid? in *Pinus ponderosa*.

Xylonomus californicus Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 380. ♀.

Xylonomus catomus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 372. ♀.

cincticornis cincticornis (Cresson). Southwestern Alta. and s. B. C., s. to n. N. Mex., n. Idaho, and e. and n.w. Oreg. Host: *Anoplodera chrysocoma* (Kby.)? in *Pinus ponderosa scopulorum*.

Xylonomus cincticornis Cresson, 1865. Ent. Soc. Phila., Proc. 4: 288. ♀.

Xylonomus (Moerophora) modestus Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 358. ♂.

cincticornis rufus Townes. Central Oreg., n.e. Calif.

Xorides (Xorides) cincticornis rufus Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 530. ♂, ♀.

eastoni (Rohwer). Mass., Conn., Wis., s. B. C.

Xylonomus (Moerophora) eastoni Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 356. ♀.

frigidus (Cresson). Que., Maine, Vt., Colo., n. Idaho, interior Alaska, s. Yukon, s.w. B. C., n.e. Wash.

Xylonomus frigidus Cresson, 1870. Amer. Ent. Soc., Trans. 3: 168. ♀.

Xylonomus (Xylonomus) plesius Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 354. ♀.

Xylonomus (Moerophora) yukonensis Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 355. ♀.

- harringtoni** Rohwer. Que., Vt., N. Y., Ont. Host: *Dicerea divaricata* (Say).
Xylonomus canadensis Harrington, 1891. Canad. Ent. 23: 133. ♂, ♀. Preocc. in *Xorides* by Provancher, 1875.
- Xorides harringtoni* Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 443. N. name for *Xylonomus canadensis* Harrington.
- insularis** (Cresson). Que., Colo., s. N. Mex., s.w. Alta., n. Idaho, n. Utah., s. Ariz., Interior Alaska, s. B. C., Wash., Oreg., n. Calif. Host: "*Hylotrupes*" sp. in *Thuja plicata*, *Semanotus amethystinus* (LeC.), *S. ligneus amplus* (Casey), *Tetropium* sp. in *Larix occidentalis*, T. sp. in *Picea*, cerambycid in *Abies*, cerambycid in *Pinus monticola*, *Melanophila* sp.?, *M. drummondi* (Kby.), buprestid in *Pseudotsuga menziesii*, "*Temnochila virescens* [F.]" in redwood, "scolytid" in *Pseudotsuga menziesii*.
Poemia(!) *insularis* Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 380. ♀.
- maudae** (Davis). Western Wash., w. Oreg., n.w. Calif. Ecology: One specimen emerged from *Pseudotsuga menziesii*.
Xylonomus maudae Davis, 1895. Amer. Ent. Soc., Trans. 22: 32. ♀.
- medius** Townes. Northern Idaho, n.w. Calif.
Xorides (Xorides) medius Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 511. ♂, ♀.
- neoclyti** (Rohwer). Colo., N. Mex., Ariz. Host: *Neoclytus caprea* (Say), *Semanotus ligneus conformis* (Casey), *Chrysobothris femorata* (Oliv.).
Moerophora neoclyti Rohwer, 1915. U. S. Natl. Mus., Proc. 49: 223. ♂.
- peniculus** Townes. N. Y., N. J., Pa., e. S. C., e. Tex. Ecology: One paratype was extracted from the wood of *Celtis occidentalis*, and another paratype and the holotype emerged from the same host material.
Xorides (Xorides) peniculus Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 506. ♂, ♀.
- pictus** Townes. Western Calif.
Xorides (Xorides) pictus Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 505. ♀.
- planus** Townes. Colo., Ariz.
Xorides (Xorides) planus Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 511. ♂, ♀.
- rileyi** (Ashmead). N. Y. s. to n. Fla., w. to Minn. and Mo. Host: *Anoplodera nitens* (Forster)?, *Phymatodes aereus* (Newm.), *P. testaceus* (L.), *Physocnemum andreae* (Hald.), *Xylotrechus colonus* (F.), buprestid? in black oak, borer under willow bark.
Xylonomus rileyi Ashmead, 1889. In Fox, U. S. Dept. Agr., Insect Life 2: 197. Nomen nudum.
Xylonomus rileyi Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 450. ♀. The type-locality is presumably Kirkwood, Mo. because notes in the U. S. Natl. Museum pertaining to the number on the label of the holotype (Bureau of Entomology no. 2384) say: "parasite (and its cocoon) border [sic; presumably borer] under willow bark, April 20, 1880, from Miss Murtfeldt."
- Xylonomus (Xylonomus) ruficoxis* Rohwer, 1913. U. S. Natl. Mus., Proc. 45 (no. 1986): 354. ♀.
- Xylonomus (Xylonomus) lepturae* Rohwer, 1913. U. S. Natl. Mus., Proc. 45 (no. 1991): 534. ♀.
- rudis** Townes. Eastern Calif. Known only from the holotype.
Xorides (Xorides) rudis Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 510. ♀.
- semirufus** Townes, Northern Fla. Known only from the holotype.
Xorides (Xorides) semirufus Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 506. ♀.
- stigmaepteris floridanus** (Ashmead). Northwestern S. C., s.e. Ga., n. Fla., s.e. Tex.
Xylonomus floridanus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 451. ♀.

stigmapterus stigmapterus (Say). Newfoundland (Labrador), n. Man., n. B. C., and s. Alaska s. to n.w. S. C., Iowa, e. N. Dak., and central Alta. Host: *Anoplodera proxima* (Say), *Dryobius sernotatus* Linsley?

Acoenitus stigmapterus Say, 1824. In Keating, Narr. Long's 2nd Exped., v. 2 (App.), p. 325. ♀.

Xylonomus tartarus Morley, 1913. Fauna Brit. India, Hym., v. 3, p. 78. ♀. According to Townes (1961) the holotype is erroneously labeled "India," which is presumed to be an error for Indiana.

Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 113, 175.

SUBFAMILY CRYPTINAE

This is the largest of ichneumonid subfamilies. Townes (1970) recognized 307 genera which he divided among three tribes, the Hemitelini (= Gellini), the Aptesini (= Echthrinini), and the Cryptini (= Mesostenini). Most Cryptinae are external parasites.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12, 537 pp. (genera of world).

TRIBE HEMITELINI

This tribe includes most of the smaller Cryptinae. Many of the species oviposit into the egg cocoons of spiders or cocoons of beneficial insects such as Chrysopidae, Braconidae, or other Ichneumonidae. Species of a number of genera attack the puparia or larvae of cyclorrhaphous Diptera.

SUBTRIBE CHIROTICINA

Most of the species of this subtribe occur in the tropics or subtropics. There are 18 genera, but only the worldwide genus *Chirotica* has Nearctic species.

Genus CHIROTICA Foerster

Chirotica Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 173.

Type-species: *Hemiteles insignis* Gravenhorst. By subsequent monotypy from inclusion by Schmiedeknecht, 1897.

Allocota Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 173. Preocc. by Motschoulsky, 1860.

Type-species: *Allocota confederatae* Ashmead. By subsequent monotypy from inclusion by Ashmead, 1896.

Spinolia Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 173. Preocc. by Dahlbom, 1854; Costa, 1858; and Robineau-Desvoidy, 1863.

Type-species: *Hemiteles maculipennis* Gravenhorst. By subsequent monotypy from inclusion by Schmiedeknecht, 1897.

Syneches Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 173. Preocc. by Walker, 1852.

Type-species: *Hemiteles thyridopteryx* Riley. By subsequent monotypy from inclusion by Ashmead, 1900.

Diaglypta Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 176.

Type-species: *Diaglypta radiata* Ashmead. By subsequent monotypy from inclusion by Ashmead, 1895.

Deuterospinolia Dalla Torre, 1902. Cat. Hym. v. 3, p. 678. N. name for *Spinolia* Foerster.

Hymenosyneches Viereck, 1912. U. S. Natl. Mus., Proc. 42: 149. N. name for *Syneches* Foerster.

Aphadnus Cameron, 1907. Ann. and Mag. Nat. Hist. (7) 20: 26.

Type-species: *Aphadnus rufipes* Cameron. Monotypic. *A. rufipes* is regarded as a synonym of *Chirotica decorata* (Tosquinet), which is one of the intermediate species tending to merge *Chirotica* and *Paraphylax* Foerster (see Townes, 1970).

Between 1944 and 1962 the name *Phobetres* Foerster was used for this genus in North America. Perkins' (1962) correction of the type-species of *Phobetres* from *Phobetres albinopennis* Davis to *Tryphon fuscicornis* Holmgren transferred the name *Phobetres* to the Ctenopelmatinae, Eu-

ryproctini. A similar correction also made by Perkins (1962), regarding the type-species of *Chirotica*, resulted in *Chirotica* being removed from synonymy with *Gelis* to take its present application.

Members of this genus parasitize Psychidae.

Taxonomy: Perkins, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 11: 389, 413-414, 445. —Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 21.

confederatae (Ashmead). Fla., Mo., La.; Cuba, Guatemala, Honduras. Host: *Astala confederata* (Grt.), *Cryptothoelela nigrita* (B. and M.).

Hemiteles alaefasciatus Riley, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 153. Nomen nudum.

Allocota confederatae Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 208. ♀.

conspicua (Cresson). N. C., Tex. Host: Psychid.

Hemiteles conspicuus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 161. ♀.

Taxonomy: Walley, 1941. Canad. Ent. 73: 165.

sheppardi (Walley). Que., Ont., Fla., Idaho, B. C., Wash. Host: *Hyaloscotus pithopoera* (Dyar). *Allocota sheppardi* Walley, 1941. Canad. Ent. 73: 165. ♀.

thyridopteryx (Riley). Mass. s. to Fla., w. to S. Dak. and s. Calif.; Mexico. Host: *Astala edwardsii* (Heyl.), *Cryptothoelela gloveri* (Pack.), *C. nigrita* (B. and M.), *Oiketicus abbotii* Grt., *Thyridopteryx ephemeraeformis* (Haw.). Three to six individuals emerge from a single host.

Hemiteles? thyridopteryx Riley, 1869. Mo. State Ent., Ann. Rpt. 1: 150. ♀, ♂.

Hemiteles thyridopterigis Riley, 1881. U. S. Ent. Comn., Bul. 6: 65. Emend.

Phobetes albinopenis Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 311. ♂.

Hemiteles thyridopterigis var. *leucozonatus* Ashmead, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 152. Nomen nudum.

Hemiteles thyridopterigis var. *fuscus* Riley, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 152. Nomen nudum.

Biology: Balduf, 1937. Ent. Soc. Wash., Proc. 39: 177-178.

SUBTRIBE ACROLYTINA

Some members of this subtribe commonly oviposit into the cocoons of Braconidae or other Ichneumonidae. It is possible that some species may at least occasionally be primary parasites of cocoon spinning Lepidoptera, but I am not aware of information establishing this as fact.

Genus CORMOBIUS Townes

Cormobius Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 32.

Type-species: *Cormobius tenuis* Townes. Monotypic and orig. desig.

There are two undescribed Nearctic species.

tenuis Townes. Md., S. C. Ecology: Two females (holotype and one paratype) were found crawling over the bark of a large standing dead *Quercus*.

Cormobius tenuis Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 32. ♀.

Genus ENCRATEOLA Strand

Encrates Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 180. Preocc. by Gistel, 1848.

Type-species: *Hemiteles (Encratis!?) subimpressus* Brischke. By subsequent monotypy from inclusion by Brischke, 1892. The type-species is considered to be a synonym of *Encrateola laevigata* (Ratzeburg).

Encrateola Strand, 1916. Arch. f. Naturgesch. (Abt. A) 81 (5): 77. N. name for *Encrates* Foerster.

laevigata longicornis (Provancher). Que., N. H., N. Y., Wash., Oreg. *E. laevigata laevigata* (Ratzeburg) occurs in Europe.

Hemiteles longicornis Provancher, 1882. Nat. Canad. 13: 361. ♀.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 34. —Barron, 1975. Nat. Canad. 102: 498 (lectotype selection).

Genus EUDELUS Foerster

Endelus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 179.

Type-species: *Hemiteles scabriculus* Thomson. Monotypically included and desig. by Perkins, 1962.

Idemum Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 179.

Type-species: *Hemiteles (Idemum) crassiformis* Viereck. By subsequent monotypy from inclusion by Viereck, 1917.

Calliphrrus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 210.

Type-species: *Calliphrrus granulatus* Davis. By subsequent monotypy from inclusion by Davis, 1898.

crassiformis (Viereck). Conn.

Hemiteles (Idemum) crassiformis Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 339-340. ♂.

granulosus (Davis). Ill.

Calliphrrus granulatus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 290. ♂.

Genus ISDROMAS Foerster

Phatnacra Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 179.

Type-species: *Hemiteles (Phatnacra) Monterai* Lima. By subsequent monotypy from inclusion by Lima, 1948.

Isdromas Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 179.

Type-species: *Acrolyta aletiae* Ashmead. By subsequent monotypy from inclusion by Ashmead, 1900.

Larsephna Cameron, 1903. Entomologist 36: 97.

Type-species: *Larsephna varipes* Cameron. Desig. by Viereck, 1914.

Daictimorpha Viereck, 1912. U. S. Natl. Mus., Proc. 42: 636.

Type-species: *Daictimorpha peruviana* Viereck. Monotypic and orig. desig.

lycaenae (Howard). Pa. s. to Ala., w. to Iowa and Tex. Host: *Apanteles aletiae* Riley, *A. congregatus* (Say), *Meteorus* sp., *Camptotetis* sp., *Hyposoter fugitivus* (Say).

Hemiteles lycaenae Howard, 1889. In Scudder, Butterflies East. U. S. and Canada, v. 3, p. 1880. ♀.

Hemiteles aletiae Riley, 1890 (1889). In Ashmead, U. S. Natl. Mus., Proc. 12: 401. Nomen nudum.

Hemiteles bucculatricis Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 401. ♀.

Hemiteles graciliariae Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. : 401. ♀.

Orthopelma bedelliae Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 415. ♂.

Hemiteles selmae Riley, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 153. Nomen nudum.

Acrolyta aletiae Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 209. ♀, ♂.

Sychonoporthus(!) *tuckeri* Viereck, 1905. Kans. Acad. Sci., Trans. 19: 315. ♀.

Genus ACROLYTA Foerster

Acrolyta Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 174.

Type-species: *Acrolyta emprettiae* Ashmead. Desig. by Viereck, 1914 from three species included by Ashmead, 1896.

Rhadinocera Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 177.

Type-species: *Hemiteles (Rhadinocera) algonquinus* Viereck. By subsequent monotypy from inclusion by Viereck, 1917.

Mosia Seyrig, 1952. Acad. Malgache, Mem. 39: 69.

Type-species: *Mosia crassicornis* Seyrig. Monotypic and orig. desig.

Parhemiteles Seyrig, 1952. Acad. Malgache, Mem. 39: 82.

Type-species: *Parhemiteles flaviger* Seyrig. Orig. desig.

alticola (Ashmead). Colo., Wash. Host: *Apanteles* sp.

Hemiteles alticola Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 22. ♀.

- mesochori** Ashmead, Conn., Pa., N. C., S. C., Ark. Host: *Apanteles congregatus* (Say).
Ashmead gave D. C. as the type locality, but the syntypes were actually sent to Riley from Norwalk, Conn. by D. N. Couch.
Hemiteles mesochoridis Riley, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 153. Nomen nudum.
Acrolyta mesochori Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 208. ♀.
- nigricapitata** (Cook and Davis). Que. s. to Tenn., w. to Iowa. Host: *Apanteles melanoscelus* (Ratz.), *Meteorus communis* (Cr.).
Hemiteles minutus Riley, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 153. Nomen nudum.
Hemiteles laticinctus Riley, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 153. Nomen nudum.
Mesochorus microgasteris Riley, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 156. Nomen nudum.
Ischnocerus nigricapitatus Cook and Davis, 1891. Mich. Agr. Expt. Sta., Bul. 73: 11. ♀.
Acrolyta empretiae Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 209. ♀.
Hemiteles laticinctus Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 210. ♂.
Hemiteles (Rhadinocera) algonquinus Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 340. ♂.
- Biology: Muesebeck and Dohanian, 1927. U. S. Dept. Agr. Bul. 1487: 15.
- washingtonensis** (Cushman). Maine, N. H., N. Y., Mich. Townes (1970) placed this species as a synonym of *alticola*, but I have examined the holotypes of both and doubt that he is correct.
Stiboscopus washingtonensis Ashmead, 1906. In Slosson, Ent. News 17: 324. Nomen nudum.
Hemiteles (Isdromas) washingtonensis Cushman, 1922. U. S. Natl. Mus., Proc. 61 (8): 14. ♀.
- Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 40.

Genus INDOVIA Seyrig

Indovia Seyrig, 1952. Acad. Malgache, Mem. 39: 132.

Type-species: *Indovia decorata* Seyrig. Orig. desig.

Townes (1970) synonymized *Indovia* with *Stiboscopus* Foerster, but a correction of the type-species of *Stiboscopus* from *Stiboscopus thoracicus* Ashmead to *Hemiteles mandibularis* Provancher makes *Stiboscopus* a synonym of *Lysibia* (which see). *Hemiteles pinifoliae* Cushman and *Alegina laricellae* Mason, which were placed in *Stiboscopus* by Townes, do not belong in *Indovia* and are here left in the subtribe *Mastrina* where they are placed provisionally in *Mastrus*.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 65-66.

- maculithorax** (Ashmead), n. comb. Fla.; Puerto Rico, Virgin Isls., Lesser Antilles. Host: *Apanteles* sp. There is a specimen in the U. S. Natl. Mus. collection which was reared from an *Apanteles* cocoon in 1927 at Sanford, Fla. by W. E. Stone.
Hemiteles maculithorax Ashmead, 1895. Zool. Soc. London, Proc. 65: 780. ♂.
Stiboscopus thoracicus Ashmead, 1890. Ent. Soc. London, Trans. 48: 267. ♀, ♂.

Taxonomy: Townes and Townes, 1966. Amer. Ent. Inst., Mem. 8: 55 (syn.).

Genus NEOPIMLA Ashmead

Neopimpla Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 56.

Type-species: *Neopimpla abbottii* Ashmead. Monotypic and orig. desig.

Cyrtobasis Cushman, 1919. Ent. Soc. Wash., Proc. 21: 114. N. syn.

Type-species: *Cyrtobasis rogae* Cushman. Monotypic and orig. desig.

Microceratops Seyrig, 1952. Acad. Malgache, Mem. 39: 88. N. syn.

Type-species: *Microceratops dentifrons* Seyrig. Monotypic and orig. desig.

Townes (1971) erroneously placed *Neopimpla* as a synonym of *Astomaspis* Foerster and declared that the type locality of *N. abbottii* Ashmead is Zululand in South Africa by virtue of his synonymizing *abbottii* with *Caenopimpla crassa* Morley (1926). However, the handwritten manuscript of Ashmead's (1900) classification of the Ichneumonoidea shows that his parenthetical citation "Africa" was intended for *Hemipimpla* Saussure and not *Neopimpla*. Ashmead's use of the name *abbottii* for the type-species of *Neopimpla* was apparently a lapsus for the name he really intended and was caused by his confusion with his genus *Erythropimpla* (type-species: *E. abbottii* Ashmead). The only specimens ever to be found bearing a label with the name *Neopimpla* in Ashmead's handwriting are two of Cushman's paratypes of *Cyrtobasis rogae*. As noted by Cushman, these specimens run to *Neopimpla* in Ashmead's key to the Pimplini.

Taxonomy: Cushman, 1919. Ent. Soc. Wash., Proc. 21: 116. —Townes, 1971. Ent. Soc. Wash., Proc. 73: 445.

bicarinata (Riley), n. comb. Ill., Mo., Kans., Colo. Host: *Rogas* sp.

Polysphincta bicarinata Riley, 1871. Mo. State Ent., Ann. Rpt. 3: 71. ♂.

Neopimpla abbottii Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 56. ♀. N. syn.

Cyrtobasis rogae Cushman, 1919. Ent. Soc. Wash., Proc. 21: 115. ♀.

Genus DIAGLYPTIDEA Viereck

Diaglyptidea Viereck, 1913. U. S. Natl. Mus., Proc. 46: 371.

Type-species: *Diaglyptidea roepkei* Viereck. Monotypic and orig. desig.

lavoiei (Provancher). Que., Maine, N. H., N. Y., Mich., Wis.

Phyadeuon Lavoiei Provancher, 1882. Nat. Canad. 13: 353. ♀.

Hemiteles pallipennis Provancher, 1882. Nat. Canad. 13: 360. ♀, ♂.

Genus LYSIBIA Foerster

Pemon Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 174.

Type-species: *Pemon proximum* Perkins. Monotypically included and desig. by Perkins, 1962.

Lysibia Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 175.

Type-species: *Hemiteles fulvipes* Gravenhorst. Desig. by Townes, Momoi, and Townes, 1965 from three species included by Townes, Townes, and Gupta, 1961. The type-species is regarded as a junior synonym of *Lysibia nana* (Gravenhorst). The designation of *nana* as type-species by Perkins (1962) is invalid because *nana* was not among the species included by Townes, Townes, and Gupta (1961).

Stiboscopus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 182. N. syn.

Type-species: *Hemiteles mandibularis* Provancher. By subsequent monotypy from inclusion by [Ashmead in] Slosson, 1896. Viereck (1911, 1914) and Perkins (1962) incorrectly believed Ashmead (1900) to be the oldest inclusion of species in *Stiboscopus*; consequently, Viereck's designation of *Stiboscopus thoracicus* Ashmead as the type-species of *Stiboscopus* is invalid.

Haplaspis Townes, 1944. Amer. Ent. Soc., Mem. 11: 190. N. syn.

Type-species: *Hemiteles mandibularis* Provancher. Orig. desig.

Between 1914 and 1944 the name *Astomaspis* Foerster was applied to this genus in the belief that *Hemiteles fulvipes* Gravenhorst was its type-species. In 1944 Townes corrected this error, but he made another in describing *Astomaspis* of authors as the new genus *Haplaspis* while overlooking the fact that the name *Stiboscopus* should have been applied instead; it should have occurred to him to investigate this possibility because of the fact that the combination "*Stiboscopus mandibularis* Slosson, ... 1896" is given in his synonymy for *mandibularis* (Provancher). Since 1961 the name *Lysibia* has been applied to this genus, and I here suppress *Stiboscopus* as a synonym of *Lysibia* because I have been urged not to suppress *Lysibia*. *Stiboscopus* sensu Townes (1970) and Townes and Townes (1973) was a confused mixture of species; the two Nearctic species, *Hemiteles pinifoliae* Cushman and *Alegina laticellae* Mason, belong in the subtribe Mastrina (i.e. where Townes had placed *Stiboscopus*) where I am placing them provisionally in the genus *Mastrus*; the other three species belong in *Indovia*, which is here placed in the subtribe Acrolytina.

- Taxonomy: Slosson, 1896. Ent. News 7: 264 (the combination "*Stiboscopus mandibularis* Prov." was almost certainly provided by Ashmead rather than Davis and was the first inclusion of a species in *Stiboscopus*). —Viereck, 1911. U. S. Natl. Mus., Proc. 40: 193 (incorrect designation of *Stiboscopus thoracicus* Ashmead as type-species of *Stiboscopus*). —Viereck, 1914. U. S. Natl. Mus., Bul. 83: 138 (oversight of first inclusion of species in *Stiboscopus* as well as type-species designation by Viereck, 1911). —Townes, Townes, and Gupta, 1961. Amer. Ent. Inst., Mem. 1: 123 (first inclusion of species in *Lysibia*). —Perkins, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 11: 436, 453. —Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 65. —Townes and Townes, 1973. Amer. Ent. Inst., Mem. 19: 76.
- mandibularis** (Provancher). Que. s. to N. C., w. to Oreg. and Calif. Host: *Apanteles glomeratus* (L.), *A. longicornis* (Prov.), *A. melanoscelus* (Ratz.), *A. scitulus* Riley, *A. xylinus* (Say), *A. yakutatensis* Ash., *Microplitis gortynae* Riley. According to Townes and Townes (1951) the Gravenhorst names *fulvipes* and *nana* have been erroneously applied to this Nearctic species (*L. nana* being Palearctic).
- Hemiteles mandibularis* Provancher, 1875. Nat. Canad. 7: 315. ♀.
- Acrolyta smerinthi* Ashmead, 1900. In Smith, N. J. State Bd. Agr., Ann. Rpt. 27, sup., p. 569. Nomen nudum.

Taxonomy: Townes and Townes, 1951. U. S. Dept. Agr., Agr. Monog. 2: 238.

Biology: Muesebeck and Dohanian, 1927. U. S. Dept. Agr., Bul. 1487: 14 (as *fulvipes*, misdet.). —Cushman, 1928. N. Y. (Cornell) Agr. Expt. Sta., Mem. 101: 929 (as *nana*, misdet.).

SUBTRIBE HEMITELINA

Genus PLEUROGYRUS Townes

Pleurogyrus Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 44.

Type-species: *Hemiteles hungerfordi* Cushman. Orig. desig.

Members of this genus parasitize Gyrinidae which attach their pupal cases to the stems of aquatic plants a few inches above the water line.

Biology: Butcher, 1933. Ent. Soc. Amer., Ann. 26: 79-82.

cheboyganensis (Butcher). Mich. Host: *Gyrinus* sp.

Hemiteles cheboyganensis Butcher, 1933. Ent. Soc. Amer., Ann. 26: 77. ♀.

hungerfordi (Cushman). Mich. Host: *Gyrinus* sp.

Hemiteles hungerfordi Cushman, 1930 (1929). U. S. Natl. Mus., Proc. 76 (25): 4. ♂, ♀.

Taxonomy: Butcher, 1933. Ent. Soc. Amer., Ann. 26: 79.

Genus OBISIPHAGA Morley

Obisiphaga Morley, 1907. Brit. Ichn., v. 2, p. 59.

Type-species: *Aptesis stenoptera* Marshall. Monotypic.

According to Townes (1970) an undescribed species apparently belonging to this genus occurs in the northwestern U. S. The European *O. stenoptera* has been reared from the egg nests of a pseudoscorpion, *Obisium* sp.

Genus AROTREPES Townes

Arotrepes Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 45.

Type-species: *Cryptus pusillus* Cresson. Orig. desig.

mitralis (Provancher). Que.

Platylabus mitralis Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 37. ♀.

pusillus (Cresson). Mass., N. Y., Md., Ill. Ecology: Occurs in marshy meadows.

Cryptus pusillus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 302.

Genus XIPHULCUS Townes

Xiphulcus Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 46.

Type-species: *Hemiteles longulus* Thomson. Orig. desig. The type-species is regarded as a synonym of *x. floricator* (Gravenhorst).

Townes said "this is a moderate sized genus [he knew 15 species], of Holarctic distribution," but the Nearctic species known to him are apparently undescribed.

Taxonomy: Horstmann, 1974. Mus. Natl. Hungarici, Ann. Hist.-Nat. 66: 344 (European spp.).

Genus HEMITELES Gravenhorst

Hemiteles Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 780.

Type-species: *Hemiteles tristator* Gravenhorst. Desig. by Westwood, 1840. The type-species is considered to be a synonym of *H. bipunctator* (Thunberg).

Ocyrmorus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 180.

Type-species: *Hemiteles cingulator* Gravenhorst. Monotypically included and desig. by Townes, 1944. The type-species is considered to be a synonym of *H. bipunctator* (Thunberg).

Members of this genus apparently parasitize spider egg cocoons.

humeralis Provancher. Que. w. to Minn., s. to Tex.

Hemiteles humeralis Provancher, 1874. Nat. Canad. 6: 333. ♀.

Stilpnus appendiculatus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 44. ♂.

Genus ACLASTUS Foerster

Microplex Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 175.

Type-species: *Aclastus rufipes* Ashmead. By subsequent monotypy from inclusion by Roman, 1909.

Daetora Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 175.

Type-species: *Hemiteles solutus* Thomson. Monotypically included and desig. by Perkins, 1962.

Aclastus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 175.

Type-species: *Aclastus rufipes* Ashmead. By subsequent monotypy from inclusion by Ashmead, 1902.

Opisthostenus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 175.

Type-species: *Hemiteles (Opisthostenus) etorofuensis* Uchida. By subsequent monotypy from inclusion by Uchida, 1936.

flagellatus (Davis). Colo., Alta., Wash.

Proclitus flagellatus Davis, 1897. Amer. Ent. Soc., Trans. 24: 246. ♂.

gracilis (Thomson). Greenland: Eurasia.

Hemiteles gracilis Thomson, 1884. Opusc. Ent. 10: 989. ♀, ♂.

Hemiteles solutus Thomson, 1884. Opusc. Ent. 10: 990. ♂, ♀.

Hemiteles minutus Bridgman, 1886. Ent. Soc. London, Trans. 34: 340. ♂, ♀.

Taxonomy: Roman, 1916. Arkiv. for Zool. 10 (7): 6-7. —Roman, 1925 (1924). Arkiv. for Zool 17A (4): 14-15. —Jussila, 1965. Univ. Turku, Ann. (A, II) 34: 153.

karlukensis (Ashmead). Alaska.

Acrolyta karlukensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 186. ♀.

nigritus (Ashmead). Alaska; e. U. S. R.

Stibeutes nigrita Ashmead, 1899 (1898). In Jordan, Fur Seals and Fur-seal Isls. No. Pacific, v. 4, p. 338. ♀.

Spinolia minuta Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 186. ♀. Preocc. in *Aclastus* by Bridgman, 1886.

rufipes (Ashmead). Alaska.

Stiboscopus alaskensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 171. ♀.

Acrolyta aciculata Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 186. ♂.

Aclastus rufipes Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 187. ♀.

Genus POLYAULON Foerster

Polyaulon Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 171.

Type-species: *Polyaulon incertus* Foerster. Desig. by Viereck, 1914 from 12 species included by Foerster, 1871.

Myersia Viereck, 1912. U. S. Natl. Mus., Proc. 43: 575.

Type-species: *Myersia laminata* Viereck. Monotypic and orig. desig.

Thaumatotypidea Viereck, 1912. U. S. Natl. Mus., Proc. 43: 577.

Type-species: *Cremnones tuberculatus* Ashmead. Orig. desig.

Rhacodopteron Capek, 1956. Zool. Listy 5: 285. The author placed the genus in the Braconidae.

Type-species: *Rhacodopteron stiaenicense* Capek. Monotypic and orig. desig.

bimaculatus (Ashmead). Ind.

Orthopelma bimaculatum Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 416. ♂.

canadensis (Harrington). B. C.

Cremnones canadensis Harrington, 1894. Canad. Ent. 26: 213. ♀.

Taxonomy: Strickland, 1912. Ent. Soc. Amer., Ann. 5: 115.

erythroga Ashmead. Va.

Orthopelma erythroga Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 416. ♂.

grandis (Cushman). B. C.

Myersia grandis Cushman, 1921. Ent. Soc. Wash., Proc. 23: 110. ♀.

koebelei (Cushman). Wash., Oreg.

Thaumatotypidea koebelei Cushman, 1921. Ent. Soc. Wash., Proc. 23: 112. ♂.

laminatus (Viereck). Que. s. to Fla., w. to Ohio and Ala.

Myersia laminata Viereck, 1912. U. S. Natl. Mus., Proc. 43: 576. ♀.

Myersia pallida Cushman, 1919. U. S. Natl. Mus., Proc. 55: 522. ♀.

Myersia johnsoni Cushman, 1921. Ent. Soc. Wash., Proc. 23: 110. ♀.

Myersia harringtoni Viereck, 1925. Canad. Ent. 57: 73. ♀.

Taxonomy: Cushman, 1921. Ent. Soc. Wash., Proc. 23: 110.

niger (Viereck). B. C.

Myersia nigra Viereck, 1925. Canad. Ent. 57: 73. ♂.

spinulatus (Strickland). Conn.

Thaumatotypidea spinulatus Strickland, 1912. Ent. Soc. Amer., Ann. 5: 116. ♀.

tuberculatus (Ashmead). Mont., Alaska, Calif. Host: Spider egg cocoon.

Cremnones tuberculatus Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 211. ♀.

Cremnones alaskensis Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 211. ♀.

Taxonomy: Strickland, 1912. Ent. Soc. Amer., Ann. 5: 115.

SUBTRIBE GNYPETOMORPHINA

Genus ANUROTROPUS Cushman

Anurotropus Cushman, 1924. U. S. Natl. Mus., Proc. 64 (4): 4.

Type-species: *Anurotropus minutus* Cushman. Monotypic and orig. desig.

minutus Cushman. Conn., Ga., Mich., Ill., Minn.

Anurotropus minutus Cushman, 1924. U. S. Natl. Mus., Proc. 64 (4): 5. ♂, ♀.

SUBTRIBE GELINA

Genus XENOLYTUS Foerster

Xenolytus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 174.

Type-species: *Xenolytus rufipes* Cameron. By subsequent monotypy from inclusion by Cameron, 1906.

Sternocryptus Roman, 1925 (1924). Arkiv for Zool. 17A (4): 12.

Type-species: *Cryptus bitinctus* Gravenhorst. Monotypic and orig. desig. *Cryptus bitinctus* Gravenhorst is an identification of *Ichneumon bitinctus* Gmelin.

bitinctus (Gmelin). Maine, Ont., B. C., Calif.; Eurasia, New Zealand, Australia, Africa. Ecology: In England commonly found in warehouses, granaries, feedstores, and flour mills where it was most frequently associated with *Tinea pallescentella* Stainton, *Endrosis sarcitrella* (L.), and *Hofmannophila pseudospretella* (Stainton); a series was also reared from a birds nest (Richards, 1949). Adventive.

Ichneumon bitinctus Gmelin, 1790. In Linnaeus, Syst. Nat., ed. 13, v. 1, pt. 5, p. 2719. ♀.
Ichneumon expulsor Thunberg, 1922; 1924. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 263; 9: 316. ♀.

Cryptus apicalis Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 574. ♀.

Phygadeuon limatus Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 358. ♀.

Hemiteles occidentalis Harrington, 1894. Canad. Ent. 26: 213. ♀.

Hemiteles destructivus Cameron, 1898. Manchester Lit. and Phil. Soc., Mem. and Proc. 42 (1): 26. ♀.

Bathymetis antipoda Ashmead, 1900. Ent. News 11: 624. ♀.

Xenolytus rufipes Cameron, 1906. So. African Mus., Ann. 5: 154. ♀.

Taxonomy: Roman, 1912. Zool. Bidr. Uppsala 1: 254 (syn.). —Schmiedeknecht, 1932. Opusc. Ichn., Sup., fasc. 14, p. 41 (syn.). —Townes, Townes, and Gupta, 1961. Amer. Ent. Inst., Mem. 1: 125 (syn.). —Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 52 (syn.).

Biology: Richards, 1949. Roy. Ent. Soc. London, Proc. (Ser. B [Taxonomy]) 18: 25-28 (speculation concerning hosts).

subspinosus (Provancher). Que., N. Y., Alta.

Hemiteles subspinosus Provancher, 1874. Nat. Canad. 6: 333. ♀.

Genus DICHROGASTER Doumerc

Dichrogaster Doumerc, 1955. Soc. Ent. de France, Bul. (in Ann.) (3) 3: LXXXVIII.

Type-species: *Microgaster perlae* Doumerc: Monotypic. The type-species is considered to be a synonym of *D. aestivalis* (Gravenhorst).

Otacustes Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 174.

Type-species: *Otacustes atriceps* Ashmead. Desig. by Viereck, 1914 from two species included by Ashmead, 1894.

Microtorus Foerster, 1868. Naturh. Verh. Rheinlande, Verh. 25: 178.

Type-species: *Microtorus kichijoi* Uchida. Desig. by Townes, 1957 from two species included by Uchida, 1940.

Xenobrachys Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 179.

Type-species: *Hemiteles longicaudatus* Thomson. Monotypically included and desig. by Perkins, 1962.

Brachycephalus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 179. Preocc. by Fitzinger, 1826; Holland, 1857; and Signoret, 1866.

Type-species: *Hemiteles aestivalis* Gravenhorst. Desig. by Townes, 1944 from four species included by Roman, 1925.

Brachycranium Ashmead, 1900. Canad. Ent. 32: 368. N. name for *Brachycephalus* Foerster.

Chrysopoctonus Cushman, 1919. U. S. Natl. Mus., Proc. 55: 518.

Type-species: *Otacustes atriceps* Ashmead. Orig. desig.

Members of this genus parasitize cocoons of Chrysopidae and Hemerobiidae.

Revision: Horstmann, 1973. Ent. Scand. 4: 65-72 (European spp.).

Taxonomy: Cushman, 1924. U. S. Natl. Mus., Proc. 64 (4): 1 (key to N. Amer. spp.).

bicolor (Cushman). Fla. Host: *Nodita pavida* (Hagen).

Chrysopoctonus bicolor Cushman, 1924. U. S. Natl. Mus., Proc. 64 (4): 1. ♂, ♀.

chrysopae chrysopae (Ashmead). rev. status. Del., N. C., S. C., Fla., Miss. Host: *Chrysopa bimaculata* McL., *C. cubana* Hagen, *C. oculata* Say, *C. rufilabris* Burm., *C. sanchezi* Navas.

Otacustes chrysopae Ashmead, 1894. U. S. Dept. Agr., Insect Life 7: 243. ♂.

Otacustes atriceps Ashmead, 1894. U. S. Dept. Agr., Insect Life 7: 244. ♀.

- chrysopae patruelis* (Cushman). Ariz., B. C. s. to Calif. Host: *Chrysopa plorabunda* Fitch.
Chrysopoctonus patruelis Cushman, 1919. U. S. Natl. Mus., Proc. 55: 520. ♂, ♀.
- crassa* (Provancher). Que. s. to D. C., w. to Oreg. Host: *Chrysopa harrisii* Fitch, *C. nigricornis* Burm., *C. plorabunda* Fitch, *C. rufilabris* Burm., *Hemerobius* sp. I believe that Townes and Townes (1951) were incorrect in treating *chrysopae* (Ashmead) and *chrysopae patruelis* (Cushman) as subspecies of *crassa*.
- Hemiteles crassus* Provancher, 1882. Nat. Canad. 13: 361. ♂.
- Hemiteles rileyi* Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 402. ♂.
- Hemiteles hemerobii* Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 404. ♂.
- Hemiteles hemerobicola* (!) Riley and Howard, 1890. U. S. Dept. Agr., Insect Life 3: 153.
- Hemiteles rufiventris* Riley, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 153. Nomen nudum.
- Hemiteles euryptychiae* Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 210. ♀. The correct data for the holotype of *euryptychiae* were cited by Riley under the above nomen nudum, *rufiventris*.
- Hemiteles (Otaustes) cressoniformis* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 339, 340. ♀.
- Taxonomy: Cushman, 1919. U. S. Natl. Mus., Proc. 55: 520. —Townes and Townes, 1951. U. S. Dept. Agr., Agr. Monog. 2: 235.

Genus GELIS Thunberg

- Gelis* Thunberg, 1827. Soc. Sci. Upsala, Nov. Acta 9: 199.
- Type-species: *Mutilla acarorum* Linnaeus. Desig. by Viereck, 1914.
- Pezomachus* Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 867.
- Type-species: *Mutilla acarorum* Linnaeus. Desig. by Curtis, 1835.
- Pezolochus* Foerster, 1850. Arch. f. Naturgesch. 16 (1): 71.
- Type-species: *Pezolochus rufipes* Foerster. Monotypic.
- Heminachus* Ratzeburg, 1852. Ichn. d. Forstins., v. 3, p. 157.
- Type-species: *Heminachus fasciatus* Ratzeburg. Desig. by Viereck, 1914.
- Thaumatotypus* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 172.
- Type-species: *Thaumatotypus femoralis* Brischke. By subsequent monotypy from inclusion by Brischke, 1881.
- Plesiomma* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 176. Preocc. by Macquart, 1838. Placed as a synonym of *Gelis* by Townes (1970), but no species have ever been included.
- Alegina* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 176.
- Type-species: *Algina* (!) *alaskensis* Ashmead. By subsequent monotypy from inclusion by Ashmead, 1902.
- Rhadiurgus* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 177. Preocc. by Loew, 1849.
- Type-species: *Hemiteles bicolorinus* Gravenhorst. By subsequent monotypy from inclusion by Uchida, 1933 (June). The type-species is considered to be a synonym of *Gelis cinctus* (Linnaeus).
- Aschistus* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 177.
- Type-species: *Hemimachus variabilis* Ratzeburg. Desig. by Viereck, 1914 from two species included by Brischke, 1891. The type-species is considered to be a synonym of *Gelis cursitans* (Fabricius).
- Blapsidotira* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 177.
- Type-species: *Hemiteles melanarius* Gravenhorst. Monotypically included and desig. by Perkins, 1962.
- Philonygmus* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 177.
- Type-species: *Philonygmus* (!) *alaskensis* Ashmead. Desig. by Viereck, 1914 from two species included by Ashmead, 1902.
- Barydotira* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 178.
- Type-species: *Barydotira hammari* Viereck. By subsequent monotypy from inclusion by Viereck, 1912.
- Ilapinastes* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 179.

Type-species: *Hemiteles davidsonii* Ashmead. By subsequent monotypy from inclusion by Ashmead, 1896.

Urithreptus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 180. According to Perkins (1962) a male specimen of *Gelis* (species still unidentified) in the Foerster collection bears the name *Urithreptus*. No species included.

Terpiphora Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 185.

Type-species: *Alegina alaskensis* Ashmead. Monotypically included and desig. by Viereck, 1914.

Micromeson Strickland, 1912. Ent. Soc. Amer., Ann. 5: 137.

Type-species: *Micromeson annulatum* Strickland. Desig. by Viereck, 1914.

Pezomachus subg. *Myrmicomorpha* Viereck, 1913. U. S. Natl. Mus., Proc. 44: 566.

Type-species: *Pezomachus (Myrmicomorpha) perniciosus* Viereck. Monotypic and orig. desig.

Gelis subg. *Leptogelis* Ceballos, 1925. Eos 1: 155.

Type-species: *Gelis (Leptogelis) ariasi* Ceballos. Desig. by Townes, 1944.

Thaumatogelis Kupka, 1933. In Schmiedeknecht, Opusc. Ichn., Sup., fasc. 17, p. 7-8. Name invalid; type-species not designated.

Gelis subg. *Cryptogelis* Hellen, 1944. Notulae Ent. 24: 2. Name invalid; type-species not designated.

Gelis subg. *Holcogelis* Aubert, 1957. Muenchen. Ent. Gesell., Mitt. 47: 226.

Type-species: *Pezomachus corruptor* Foerster. Orig. desig.

Arctodeuon Hellen, 1967. Notulae Ent. 47: 100.

Type-species: *Hemiteles glacialis* Holmgren. Monotypic and orig. desig.

Rhadiurginus Hellen, 1967. Notulae Ent. 47: 109. N. name for *Rhadiurgus* Foerster.

Members of this genus are particularly well known as hyperparasites which attack the cocoons of Braconidae or other Ichneumonidae, but there are also many species which attack the egg cocoons of spiders. Apparently, some species of *Gelis* can sometimes be primary parasites in the cocoons of sawflies or small Lepidoptera.

Revision: Strickland, 1912. Ent. Soc. Amer., Ann. 5: 113-140 (of very limited use).

Taxonomy: Perkins, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 11: 462. —Townes, 1970 (1969).

Amer. Ent. Inst., Mem. 12: 53-55.

aciculatus (Strickland). Tex.

Pezomachus foersteri Brues, 1910. Wis. Nat. Hist. Soc., Bul. 8: 69. ♀. Preocc. by Bridgman, 1886.

Pezomachus aciculatus Strickland, 1912. Ent. Soc. Amer., Ann. 5: 136. N. name for *foersteri* Brues.

alegininus Carlson, n. name. Alaska.

Stiboscopus solitarius Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 172. ♂. Preocc. in *Gelis* by Foerster, 1850. Because all of its known synonyms are also preocc., *solitarius* Ashmead is here given the new name *alegininus* in reference to its synonymy with the type-species of *Alegina*.

Algina (!) *alaskensis* Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 188. ♀. Preocc. in *Gelis* by Ashmead, 1890.

Philonygus (!) *alaskensis* Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 189. ♂. Preocc. in *Gelis* by Ashmead, 1890 and Ashmead, 1902, p. 188.

Ilapinastes incertus Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 190. ♂. Preocc. in *Gelis* by Foerster, 1850.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 53.

alogus (Viereck). Kans.

Pezomachus alogus Viereck, 1905. Kans. Acad. Sci., Trans. 19: 321. ♂.

alternatus (Cresson). Ill.

Pezomachus alternatus Cresson, 1872. Canad. Ent. 4: 64. ♀.

annulatus (Strickland). Pa., Md., Tex. Host: Spider eggs.

Micromeson annulatum Strickland, 1912. Ent. Soc. Amer., Ann. 5: 137. ♀.

apantelis Cushman. N. H., Mass., N. Y. Host: *Apanteles melanoscelus* (Ratz.).

Gelis apantelis Cushman, 1927. Jour. Agr. Res. 34: 454. ♂, ♀.

- Biology: Muesebeck and Dohanian, 1927. U. S. Dept. Agr. Bul. 1487: 16-17.
- atratus** (Ashmead). Colo., Alta., Utah. Host: *Apanteles* sp.
- Pezolochus atratus* Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 22. ♀.
- Pezomachus utahensis* Strickland, 1912. Ent. Soc. Amer., Ann. 5: 118. ♀.
- belfragei** (Ashmead). Tex.
- Hemiteles belfragei* Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 339. ♀.
- Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 55.
- bicoloratus** (Cresson). Tex.
- Mesoleptus bicoloratus* Cresson, 1872. Amer. Ent. Soc., Trans. 4: 166. ♂.
- birkmani** (Brues). Tex.
- Pezomachus Birkmani* Brues, 1903. Amer. Ent. Soc., Trans. 29: 121. ♀.
- brevistylus** (Strickland). Pa., N. Y.
- Pezomachus brevistylus* Strickland, 1912. Ent. Soc. Amer., Ann. 5: 119. ♀.
- bruesii** (Strickland). Mass., Pa. Host: Eggs of Gnaphosidae.
- Pezomachus obesus* Brues, 1910. Wis. Nat. Hist. Soc., Bul. 8: 71. ♀. Preocc. in *Gelis* by Ashmead, 1902.
- Pezomachus bruesii* Strickland, 1912. Ent. Soc. Amer., Ann. 5: 136. N. name for *obesus* Brues.
- californicus** (Ashmead). Calif.
- Pezomachus californicus* Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 421. ♀.
- canadensis** (Cresson). Que., Ont., Ill., Mo., Wash.
- Pezomachus canadensis* Cresson, 1872. Canad. Ent. 4: 62. ♀.
- Pezomachus Quebecensis* Provancher, 1875. Nat. Canad. 7: 330. ♀.
- caudatus** (Rudow). Iowa. Ecology: Secondary parasite of *Callosamia promethea* (Drury).
- Pezomachus caudatus* Rudow, 1917. Ent. Ztschr. 30: 102. ♀.
- Taxonomy: Townes and Townes, 1973. Amer. Ent. Inst., Mem. 19: 362.
- cockerelli** (Brues). Colo.
- Pezomachus cockerelli* Brues, 1910. Wis. Nat. Hist. Soc., Bul. 8: 68. ♀.
- coloradensis** (Strickland). Colo.
- Pezomachus coloradensis* Strickland, 1912. Ent. Soc. Amer., Ann. 5: 122. ♀.
- columbianus** (Ashmead). D. C. Host: *Coleophora* sp.
- Hemiteles columbianus* Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 402. ♂.
- compactus** (Cresson). Ill.
- Pezomachus compactus* Cresson, 1872. Canad. Ent. 6: 63. ♀.
- crassulus** (Brues). Tex.
- Pezomachus crassulus* Brues, 1903. Amer. Ent. Soc., Trans. 29: 123. ♀.
- cushmani** Carlson, n. name. Maine, N. H., Mass., N. Y., N. C., Wis., Alaska. Host: *Apanteles melanoscelus* (Ratz.), *Porizon cupressi* (Ashmead), *Neodiprion tsugae* Midd., *Coleophora laricella* (Hbn.).
- Hemiteles apantelis* Cushman, 1927. Jour. Agr. Res. 34: 453. ♂, ♀. Preocc. in *Gelis* by Cushman, 1927, p. 454.
- Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 55.
- Biology: Muesebeck and Dohanian, 1927. U. S. Dept. Agr., Bul. 1487: 15.
- davidsonii** (Ashmead). Oreg., Calif. Host: Spider egg cocoon.
- Hemiteles davidsonii* Ashmead, 1896. In Davidson, Ent. News 7: 320. ♀.
- debilis** (Provancher). Ont.
- Hemiteles debilis* Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 59. ♂.
- delicatus** (Cresson). Tex.
- Mesoleptus delicatus* Cresson, 1872. Amer. Ent. Soc., Trans. 4: 166. ♂.
- dimidiiventris** (Rudow). Iowa. Ecology: Apparently a secondary parasite of *Papilio polyxenes* F. Rudow apparently confused the name *Papilio polyxenes* with that of the European

- papilionid, *Zerynthia hypermnestra* (Scop.), which was known to Rudow by the synonymous name "*Thais polyxena*."
- Pezomachus dimidiaventrus* Rudow, 1917. Ent. Ztschr. 30: 102. ♀.
- Taxonomy: Townes and Townes, 1973. Amer. Ent. Inst., Mem. 19: 362.
- delumbis* (Brues). Wash.
- Pezomachus delumbis* Brues, 1910. Wis. Nat. Hist. Soc., Bul. 8: 75. ♀.
- dispar* (Strickland). Pa., Md. Host: Spider eggs.
- Pezomachus dispar* Strickland, 1912. Ent. Soc. Amer., Ann. 5: 125. ♂, ♀.
- drassi* (Riley). Ohio, Kans., Ariz. Host: Eggs of Gnaphosidae.
- Hemiteles drassi* Riley, 1892. In Howard, Ent. Soc. Wash., Proc. 2: 296. ♂.
- Pezomachus homalommoides* Viereck, 1905. Kans. Acad. Sci., Trans. 19: 294. ♂.
- Pezomachus testaceicoxus* Viereck, 1905. Kans. Acad. Sci., Trans. 19: 322. ♂.
- fenestralis* (Brues). N. H.
- Pezomachus fenestralis* Brues, 1910. Wis. Nat. Hist. Soc., Bul. 8: 71. ♂.
- ferruginosus* (Strickland). B. C., Wash., Oreg. Ecology: Secondary parasite of *Neodiprion tsugae* Midd. according to Furniss and Dowden (1941).
- Pezomachus insolens* Brues, 1910. Wis. Nat. Hist. Soc., Bul. 8: 74. ♀. Preocc. by Foerster, 1850.
- Pezomachus ferruginosus* Strickland, 1912. Ent. Soc. Amer., Ann. 5: 136. N. name for *insolens* Brues.
- Biology: Furniss and Dowden, 1941. Jour. Econ. Ent. 34: 49.
- foveatus* (Brues). Mass.
- Pezomachus foveatus* Brues, 1910. Wis. Nat. Hist. Soc., Bul. 8: 73. ♂.
- gelechiae* (Ashmead). Calif. Ecology: Data files in the U. S. Natl. Museum indicate that *gelechiae* was associated with *Gnorimoschema operculella* (Zell.) which were infesting potato tubers.
- Exolytus gelechiae* Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 397. ♂.
- gracillimus* (Dalla Torre). R. I., N. Y., Pa., Tex.
- Pezomachus gracilis* Cresson, 1872. Canad. Ent. 4: 63. ♀. Preocc. by Foerster, 1850.
- Pezomachus gracillimus* Dalla Torre, 1902. Cat. Hym., v. 3, p. 624. N. name for *gracilis* Cresson.
- Pezomachus angularis* Brues, 1903. Amer. Ent. Soc., Trans. 29: 122. ♀.
- Pezomachus cressonii* Strickland, 1912. Ent. Soc. Amer., Ann. 5: 136. N. name for *gracilis* Cresson; *cressonii* Strickland preocc. by Dalla Torre, 1902.
- habilis* (Brues). Mass.
- Pezomachus habilis* Brues, 1910. Wis. Nat. Hist. Soc., Bul. 8: 72. ♀.
- hammari* (Viereck). Mass., Ark. Host: Casebearer on wild grape. Also reared as a secondary parasite of *Acrobasis indigenella* (Zell.).
- Barydotira hammari* Viereck, 1912. U. S. Natl. Mus., Proc. 43: 584. ♀.
- Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 54.
- inermis* (Viereck). N. Mex.
- Chirotica inermis* Viereck, 1903. In Skinner, Amer. Ent. Soc., Trans. 29: 83. ♂.
- insolitus* (Howard). D. C. Ecology: Secondary parasite of *Orgyia leucostigma* (J. E. S.).
- Pezomachus insolitus* Howard, 1897. U. S. Dept. Agr. Bur. Ent. Tech. Ser. 5: 54. ♂.
- inutilis* Cushman. Mass., Ohio, Ill. Host: *Apanteles melanoscelus* (Ratz.).
- Gelis inutilis* Cushman, 1927. Jour. Agr. Res. 34: 455. ♂, ♀.
- Biology: Muesebeck and Dohanian, 1927. U. S. Dept. Agr. Bul. 1487: 16.
- keenii* (Harrington). B. C.
- Pezomachus Keenii* Harrington, 1894. Canad. Ent. 26: 214. ♀.
- kukakensis* (Ashmead). Alaska.
- Theroscopus kukakensis* Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 191. ♀.
- longipes* (Strickland). Calif.
- Pezomachus longipes* Strickland, 1912. Ent. Soc. Amer., Ann. 5: 123. ♀.

longipes (Rudow). Iowa.

Pezomachus longipes Rudow, 1917. Ent. Ztschr. 30: 103. ♀. Preocc. by Strickland, 1912; not renamed because of taxonomic uncertainties.

Taxonomy: Townes and Townes, 1973. Amer. Ent. Inst., Mem. 19: 362.

longistylus (Strickland). N. Amer.? Described from an unlabeled specimen.

Pezomachus longistylus Strickland, 1912. Ent. Soc. Amer., Ann. 5: 120. ♀.

lymensis (Strickland). Conn. Host: Eggs of Gnaphosidae.

Micromeson lymense Strickland, 1912. Ent. Soc. Amer., Ann. 5: 138. ♀.

macer (Cresson). Mass., N. Y., Pa., Md., Ohio, Ill., Tex. Host: Eggs of *Epeira foliata* (Geoff.), *Argiope* sp.

Pezomachus macer Cresson, 1872. Canad. Ent. 4: 64. ♂.

Pezomachus flavocinctus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 421. ♀.

maculatus (Strickland). Calif.

Pezomachus maculatus Strickland, 1912. Ent. Soc. Amer., Ann. 5: 121. ♀.

manni (Strickland). Calif.

Pezomachus manni Strickland, 1912. Ent. Soc. Amer., Ann. 5: 132. ♂.

meabilis (Cresson). Mass. s. to Va., w. to Iowa and Kans. Host: Eggs of *Agelenopsis naevia* (Walck.).

Pezomachus meabilis Cresson, 1872. Canad. Ent. 4: 62. ♀.

Pezomachus dimidiatus Cresson, 1872. Canad. Ent. 4: 63. ♀.

Pezomachus similis Strickland, 1912. Ent. Soc. Amer., Ann. 5: 127. ♂, ♀.

Pezomachus nodosus Strickland, 1912. Ent. Soc. Amer., Ann. 5: 128. ♀.

micariae (Howard). Mass., Pa., D. C. Host: Eggs of *Micaria* sp.

Pezomachus micariae Howard, 1892. Ent. Soc. Wash., Proc. 2: 294. ♂, ♀.

Hemiteles micarivora Riley, 1892. In Howard, Ent. Soc. Wash., Proc. 2: 295. ♂.

minimus (Walsh). Ill., Okla., Tex. Host: *Apanteles militaris* (Walsh).

Pezomachus minimus Walsh, 1861. Ill. State Agr. Soc., Trans. 4: 368. ♂, ♀.

Biology: Riley, 1870. Mo. State Ent., Ann. Rpt. 2: 52.

nigerrimus (Dalla Torre). Calif.

Pezomachus niger Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 362. ♀.

Preocc. by Brischke, 1878.

Pezomachus nigerrimus Dalla Torre, 1902. Cat. Hym., v. 3, p. 630. N. name for *niger* Provancher.

nigriventris (Brues). Tex.

Pezomachus texanus var. *nigriventris* Brues, 1903. Amer. Ent. Soc., Trans. 29: 122. ♀.

nigrofuscus (Strickland). Pa.

Pezomachus nigrofuscus Strickland, 1912. Ent. Soc. Amer., Ann. 5: 133. ♂.

nocuus Cushman. Mass., N. Y., N. J., Pa., Ohio, N. C. Host: *Apanteles melanoscelus* (Ratz.), Ichneumonidae.

Gelis nocuus Cushman, 1927. Jour. Agr. Res. 34: 455. ♂, ♀.

Biology: Muesebeck and Dohanian, 1927. U. S. Dept. Agr. Bul. 1487: 16.

obesus (Ashmead). Alaska; Sweden.

Theroscopus rufipes Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 191. ♂, ♀. Preocc. in *Gelis* by Bridgman, 1883.

Pezomachus obesus Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 193. ♀.

Pezomachus auripes Strickland, 1912. Ent. Soc. Amer., Ann. 5: 134. ♂.

Pezomachus insularis Strickland, 1912. Ent. Soc. Amer., Ann. 5: 136. N. name for *T. rufipes* Ashmead.

Taxonomy: Roman, 1909. In Hamberg, Naturw. Untersuch. Sarekgebirges Schwedisch-Lappland, v. 4, p. 230.

obscurus (Cresson). Maine s. to Va., w. to Kans. Host: *Bucculatrix canadensisella* Chamb., *Coleophora laricella* (Hbn.), *C. salmani* Heinr., *Apanteles canarsiae* Ash., *A. lacteicolor* Vier., *A. melanoscelus* (Ratz.), *Heterarthrus nemoratus* (Fall.).

Pezomachus obscurus Cresson, 1872. Canad. Ent. 4: 62. ♀.

- Pezolochus bucculatricis* Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 240. ♂, ♀.
Theroscopus americanus Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 211. ♂.
Hemiteles ashmeadii Dalla Torre, 1902. Cat. Hym., v. 3, p. 643. N. name for *T. americanus* Ashmead, which was temporarily preocc. in *Hemiteles*.
- Taxonomy: Muesebeck and Dohanian, 1927. U. S. Dept. Agr. Bul. 1487: 16, 17.
- Biology: Muesebeck and Dohanian, 1927. U. S. Dept. Agr. Bul. 1487: 16, 17. —Friend, 1927. Conn. [State] Agr. Expt. Sta. Bul. 288: 449, 450.
- Taxonomy: Cushman, 1927. Jour. Agr. Res. 34: 456. —Muesebeck and Dohanian, 1927. U. S. Dept. Agr. Bul. 1487: 16.
- ottawaensis** (Harrington). Conn., Ont., W. Va. Host: Eggs of Gnaphosidae?
Pezomachus ottawaensis Harrington, 1896. Canad. Ent. 28: 77. ♀.
Hemiteles ottawaensis Harrington, 1896: Canad. Ent. 28: 78. ♂. Preocc. in *Gelis* by Harrington, 1896, p. 77.
- pennsylvanicus** (Strickland). Pa.
Pezomachus pennsylvanicus Strickland, 1912. Ent. Soc. Amer., Ann. 5: 126. ♀.
- perniciosus** (Viereck). Tex. Host: *Apanteles militaris* (Walsh), *Meteorus laphygmae* Vier., *Rogas laphygmae* Vier.
Pezomachus (Myrmicomorpha) perniciosus Viereck, 1913. U. S. Natl. Mus., Proc. 44: 566. ♀.
- pettitii** (Cresson). Que., R. I., Ont.
Pezomachus Pettitii Cresson, 1872. Canad. Ent. 4: 61. ♀.
Pezomachus sulcatus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 77. ♀.
- popofensis** (Ashmead). Alaska.
Theroscopus popofensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 192. ♂.
- prothesimae** (Riley). Mass. Host: Eggs of *Zelotes subterraneus* (Koch).
Hemiteles prothesimae Riley, 1892. In Howard, Ent. Soc. Wash., Proc. 2: 294. ♂.
- pumilis** (Foerster). Alaska; Europe.
Pezomachus pumilis Foerster, 1850. Arch. f. Naturgesch. 16 (1): 131. ♀.
Pezomachus alaskensis Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 421. ♀.
Pezomachus nigrellus Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 192. ♂, ♀.
Pezomachus minutus Strickland, 1912. Ent. Soc. Amer., Ann. 5: 119. ♀.
- Taxonomy: Roman, 1909. In Hamberg, Naturw. Untersuch. Sarekgebirges Schwedisch-Lappland, v. 4, p. 232.
- robustus** (Strickland). Ariz.
Pezomachus robustus Strickland, 1912. Ent. Soc. Amer., Ann. 5: 120. ♀.
- rotundiceps** (Cresson). Tex.
Mesoleptus? rotundiceps Cresson, 1872. Amer. Ent. Soc., Trans. 4: 167. ♂.
Hemiteles pallidus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 406. ♂. N. syn. The holotype of *pallidus* has not been found, and it is my belief that its holotype is actually the same specimen as the holotype of *rotundiceps*. Although Ashmead's description of the propodeum does not agree perfectly with the holotype of *rotundiceps*, Ashmead is not renowned for his accuracy. There are at least two cases where it is known with certainty that Ashmead redescribed unique specimens from the Belfrage Collection which had already been described by Cresson.
- sessilis** (Provancher). Que., N. Y., S. C., Ohio, Oreg.
Hemiteles sessilis Provancher, 1874. Nat. Canad. 6: 334. ♀.
- Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 55.
- spiraculus** (Strickland). N. Y., N. C. Host: *Microplitis gortynae* Riley.
Pezomachus spiraculus Strickland, 1912. Ent. Soc. Amer., Ann. 5: 124. ♀.
Gelis microplitidis Gahan, 1922. U. S. Natl. Mus., Proc. 61: 5. ♂, ♀.
- stanfordensis** (Strickland). Calif.
Pezomachus stanfordensis Strickland, 1912. Ent. Soc. Amer., Ann. 5: 123. ♀.
- stigmaterus** (Cresson). Tex.
Mesoleptus? stigmaterus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 167. ♂.

stigmatus (Ashmead). Colo.

Hemiteles stigmatus Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 21. ♂.

stricklandi Townes. Calif.

Cremnoides californicus Ashmead, 1890 (1889). Us. Natl. Mus., Proc. 12: 420. ♀. Preocc. in *Gelis* by Ashmead, 1890 (1889), p. 421.

Pezomachus ashmeadii Strickland, 1912. Ent. Soc. Amer., Ann. 5: 135. N. name for *C. californicus* Ashmead. Preocc. in *Gelis* by Dalla Torre, 1902.

Gelis stricklandi Townes, 1944. Amer. Ent. Soc., Mem. 11: 202. N. name for *P. ashmeadii* Strickland.

tantillus (Cresson). R. I., Pa., Ill.

Pezomachus gentilis Cresson, 1872. Canad. Ent. 4: 61. ♂, ♀. Preocc. by Foerster, 1850.

Pezomachus tantillus Cresson, 1872. Canad. Ent. 4: 62. ♀.

Pezomachus cressonii Dalla Torre, 1902. Cat. Hym., v. 3, p. 621. N. name for *P. gentilis* Cresson.

tenellus (Say). Que. s. to Ga., w. to s. Alaska and Calif.; Argentina; Hawaii. Host: *Apanteles lacteicolor* Vier., *A. melanoscelus* (Ratz.), *Bracon pygmaeus* Prov., *Meteorus acronyctae* Mues., *M. communis* Cr.?, *M. datanae* Mues., *M. hyphantriae* Riley, *M. versicolor* (Wesm.), *Microplitis gortynae* Riley, *Casinarina orgyiae* (How.), *Diadegma insulare* (Cr.), *Enicospilus americanus* (Chirst), *Gambrus extrematis* (Cr.), *Hyposoter fugitivus* (Say), *H. rivalis* (Cresson), *Oresbius tsugae* Cush., *Phobocampe clisiocampae* (Weed), *Neodiprion abietis* (Harris), *N. sertifer* (Geoff.), *N. swaini* Midd., *N. tsugae* Midd., *Diprion similis* (Htg.), *Chrysopa harrisii* Fitch, *C. nigricornis* Burm., *C. rufilabris* Burm., *Bucculatrix* sp., *Coleophora frischella* (L.), *C. laricella* Hbn., *C. malivorella* Riley, *C. pruniella* Clem., *C. salmoni* Heinr., *C. serratella* (L.).

Cryptus tenellus Say, 1836. Boston Jour. Nat. Hist. 1: 233. ♀.

Hemiteles nemativorus Walsh, 1869. Canad. Ent. 2: 11. ♀.

Hemiteles nemativorus var. *fuscatus* Walsh, 1869. Canad. Ent. 2: 12. ♀.

Hemiteles utilis Norton, 1869. Amer. Ent. Soc., Trans. 2: 326. ♀.

Hemiteles depressus Provancher, 1874. Nat. Canad. 6: 334. ♀.

Hemiteles melitaeae Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 399. ♀.

Hemiteles coleophorae Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 400. ♀.

Hemiteles variegatus Ashmead, 1890 (1889). In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 153. Nomen nudum.

Hemiteles sordidus Riley, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 153. Nomen nudum.

Hemiteles periliti Riley, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 153. Nomen nudum.

Hemiteles scolyti Ashmead, 1893. In Hopkins, W. Va. Agr. Expt. Sta. Bul. 31: 144. Nomen nudum.

Otaeustes orgyiae Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 209. ♀.

Otaeustes periliti Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 210. ♀.

Otaeustes nigro-oruatus Cameron, 1908. Amer. Ent. Soc., Trans. 34: 244. ♀.

Taxonomy: Cushman and Gahan, 1923. Ent. Soc. Wash., Proc. 23: 163.

Biology: Muesebeck and Dohanian, 1927. U. S. Dept. Agr. Bul. 1487: 12-14. —Doner, 1934. Ent. Soc. Amer., Ann. 27: 442. —Doner, 1926. Ent. Soc. Amer., Ann. 29: 228.

Morphology: Dustan, 1923 (1922). Acadian Ent. Soc., Proc. 8: 75-78 (larva).

terebrator (Ratzeburg). Greenland; Europe. Host: *Microplitis coactus* Lundb.

Pezomachus terebrator Ratzeburg, 1848. Ichn. d. Forstins., v. 2, p. 126. ♀.

Taxonomy: Roman, 1916. Arkiv for Zool. 10 (22): 8.

texanus (Cresson). Tex.

Pezomachus texanus Cresson, 1872. Canad. Ent. 4: 64. ♀.

uniformis (Dalla Torre). N. H. s. to Md., w. to Iowa. Host: Spider eggs.

Pezomachus unicolor Cresson, 1872. Canad. Ent. 4: 64. ♀. Preocc. by Foerster, 1850.

Pezomachus uniformis Dalla Torre, 1902. Cat. Hym., v. 3, p. 635. N. name for *P. unicolor* Cresson.

urbanus (Brues). N. Y.

Pezomachus urbanus Brues, 1910. Wis. Nat. Hist. Soc., Bul. 8: 70. ♂.

virginiensis (Ashmead), n. comb. Va., Ark. Ecology: Associated with *Acrobasis indigenella* (Zell.). This species had been incorrectly placed in the genus *Mastrus* since 1944.

Hemiteles virginiensis Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 404. ♀.

wheeleri (Brues). Ill.

Pezomachus wheeleri Brues, 1903. Amer. Ent. Soc., Trans. 29: 123. ♀.

yakutatensis (Ashmead). Alaska.

Atractodes yakutatensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 169. ♂.

Genus AGASTHENES Foerster

Asthenoptera Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 175.

Type-species: *Hemiteles stagnalis* Thomson. Included and desig. by Hellen, 1967.

Agasthenes Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 178.

Type-species: *Hemiteles varitarsus* Gravenhorst. Included and desig. by Perkins, 1962.

Arachnoleter Cushman, 1924. U. S. Natl. Mus., Proc. 64 (4): 2.

Type-species: *Arachnoleter swezeyi* Cushman. Monotypic and orig. desig.

Townes (1970) says that there are two undescribed Nearctic species. In the U. S. Natl. Museum collection there are specimens of one of them from Mich., Ind., and Minn.; this species parasitizes spider eggs, as does *A. swezeyi* (Cushman), which is known from India, Malaya, the Philippines, and Hawaii.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 57.

SUBTRIBE MASTRINA

Genus PYGOCRYPTUS Roman

Pygocryptus Roman, 1925 (1924). Arkiv for Zool. 17 A (4): 9.

Type-species: *Phygadeuon grandis* Thomson. Monotypic and orig. desig.

Revision: Torgerson, 1974. Canad. Ent. 106: 889-896 (Holarctic spp.).

coryopsis Torgerson. Calif.

Pygocryptus coryopsis Torgerson, 1974. Canad. Ent. 106: 895. ♀.

cruentus Torgerson, n. status. Alta., B. C.

Pygocryptus echthroides cruentus Torgerson, 1974. Canad. Ent. 106: 893. ♀.

echthroides echthroides (Townes). Que., Mich., Alaska, B. C., Oreg., Calif.

Cryptus brevicornis Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 67. ♀.

Preocc. by Gravenhorst, 1829 and Provancher, 1875.

Cryptus brevicinctus (!) Provancher, 1889. Addit. Corr. Faune Ent. Canada Hym., p. 452 (index).

Amydraulax echthroides Townes, 1944. Amer. Ent. Soc., Mem. 11: 174. N. name for *C. brevicornis* Provancher.

echthroides oribasus Torgerson. Colo., Ariz.

Pygocryptus echthroides oribasus Torgerson, 1974. Canad. Ent. 106: 893. ♂, ♀.

erugatus Torgerson. Que. s. to N. C., w. to Mich.

Pygocryptus erugatus Torgerson, 1974. Canad. Ent. 106: 894. ♂, ♀.

exilis Torgerson. Calif.

Pygocryptus exilis Torgerson, 1974. Canad. Ent. 106: 896. ♂.

exochus Torgerson. Que., N. Y., Md., S. C., Mich.

Pygocryptus exochus Torgerson, 1974. Canad. Ent. 106: 895. ♂, ♀.

Genus MASTRUS Foerster

Perosis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 169.

Type-species: *Echthrus armatus* Gravenhorst. Desig. by Viereck, 1914 from two species included by Schmiedeknecht, 1888.

Daictes Foerster, 1868. *Naturh. Ver. Rheinlande, Verh.* 25: 176.

Type-species: *Phygadeuon (Daictes) fukai* Viereck. By subsequent monotypy from inclusion by Viereck, 1911.

Aenopler Foerster, 1868. *Naturh. Ver. Rheinlande, Verh.* 25: 176.

Type-species: *Phygadeuon betulaecola* Ashmead. By subsequent monotypy from inclusion by Ashmead, 1896.

Mastrus Foerster, 1868. *Naturh. Ver. Rheinlande, Verh.* 25: 176.

Type-species: *Phygadeuon (Mastrus) neodiprioni* Viereck. By subsequent monotypy from inclusion by Viereck, 1911.

Isadelpher Foerster, 1868. *Naturh. Ver. Rheinlande, Verh.* 25: 177.

Type-species: *Hemiteles inimicus* Gravenhorst. Monotypically included and desig. by Viereck, 1914.

Zoophthorus Foerster, 1868. *Naturh. Ver. Rheinlande, Verh.* 25: 180.

Type-species: *Hemiteles (Zoophthorus) nigricaniformis* Viereck. By subsequent monotypy from inclusion by Viereck, 1917.

Micromonodon Foerster, 1868. *Naturh. Ver. Rheinlande, Verh.* 25: 195.

Type-species: *Hemicryptus tener* Kriechbaumer. By subsequent monotypy from inclusion by Ashmead, 1900. Ashmead (1900) suppressed the monotypic genus *Hemicryptus* Kriechbaumer as a synonym of *Micromonodon*, which inferred inclusion of *Hemicryptus tener* Kriechbaumer in *Micromonodon* (cf. Perkins, 1962).

Cecidonomus Bridgman, 1880. *Entomologist* 13: 264.

Type-species: *Cecidonomus gallicola* Bridgman. Desig. by Viereck, 1914.

Hemicryptus Kriechbaumer, 1893. *Ent. Nachr.* 19: 152. Preocc. by Zittel, 1885.

Type-species: *Hemicryptus tener* Kriechbaumer. Monotypic.

Chaetomastrus Hellen, 1967. *Notulae Ent.* 47: 105.

Type-species: *Hemiteles hirticeps* Thomson. Monotypic and orig. desig.

Mastrus seems to be an extraordinarily heterogeneous assemblage of species, some of which may prove to belong in the subtribe Phygadeuontina. Dr. Klaus Horstmann will have significantly modified the generic synonymy prior to the appearance of this catalog.

Taxonomy: Ashmead, 1900. *U. S. Natl. Mus., Proc.* 23: 173, 212. — Perkins, 1962. *Brit. Mus. (Nat. Hist.)*, *Bul.* 11: 436.

aciculatus (Provancher). *N. B. s. to Va., w. to s. Alaska and Calif.* Host: *Coccygomimus sanguinipes erythropus* (Vier.), *Itoplectis behrensii* (Cr.), *Meteorus niveitarsis* (Cr.), *Arge* sp., *Gilpinia hercyniae* (Htg.), *Zadiprion townsendi* (Cock.), *Neodiprion nanulus* Schedl, *N. pinetum* (Nort.), *N. pratti pratti* (Dyar), *N. rugifrons* Midd., *N. sertifer* (Geoff.), *N. swaini* Midd., *N. taedae linearis* Ross, *N. tsugae* Midd., *Lambdina fiscellaria fiscellaria* (Gn.), *Protobaormia porcelaria* (Gn.). The observations by Cushman (1919) cast suspicion upon records for *aciculatus* as a primary parasite of Lepidoptera.

Hemiteles aciculatus Provancher, 1886. *Addit. Corr. Faune Ent. Canada Hym.*, p. 60. ♂.

Hemiteles ashmeadii Riley, 1890. *In Riley and Howard, U. S. Dept. Agr., Insect Life* 3: 153. *Nomen nudum*.

Hypocryptus vancoverensis Harrington, 1894. *Canad. Ent.* 26: 248. ♂.

Phygadeuon phryganidia Ashmead, 1896. *Amer. Ent. Soc., Trans.* 23: 207. ♀.

Phygadeuon (Aenopler) argeae Viereck, 1911. *U. S. Natl. Mus., Proc.* 39: 405. ♀.

Phygadeuon (Mastrus) neodiprioni Viereck, 1911. *U. S. Natl. Mus., Proc.* 40: 195. ♀.

Taxonomy: Townes, 1970 (1969). *Amer. Ent. Inst., Mem.* 12: 65 (syn.).

Biology: Cushman, 1919. *U. S. Natl. Mus., Proc.* 55: 524. — Reeks, 1938. *Ent. Soc. Ont., Ann. Rpt.* 69: 27.

Morphology: Finlayson, 1960. *Canad. Ent.* 92: 30-31 (final-instar larva).

albiscapus (Ashmead). *Tex.*

Hemiteles albiscapus Ashmead, 1890 (1889). *U. S. Natl. Mus., Proc.* 12: 403. ♂.

annulatus (Ashmead). *Calif.* Host: Pupa of microlepidopteran.

Hemiteles annulatus Ashmead, 1890 (1889). *U. S. Natl. Mus., Proc.* 12: 402. ♂.

- Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 65.
- autumnalis** (Provancher). Que., R. I., N. Y.
Atractodes autumnalis Provancher, 1882. Nat. Canad. 13: 367. ♂, ♀.
- carpocapsae** (Cushman). Pa. s. to Fla., w. to Oreg. and Calif. Host: *Grapholitha molesta* (Bsk.), *Laspeyresia caryana* (Fitch), *L. pomonella* (L.).
Aenoplax carpocapsae Cushman, 1915. U. S. Natl. Mus., Proc. 48: 509. ♀.
- Taxonomy: Cushman, 1917. U. S. Natl. Mus., Proc. 53: 461 (male described).
- Biology: Flanders, 1926. Pan-Pacific Ent. 3: 44-45. — McClure, 1933. Ent. News 44: 48-49 (effects of sting on host). — McClure, 1933. Ent. Soc. Amer., Ann. 26: 345-347 (variation in life cycle). — McClure, 1937. Nature Notes 4: 38-40. — Lloyd, 1956. Canad. Ent. 88: 80-89 (oviposition behavior).
- caudatus** (Provancher). Que., N. Y., Ont.
Echthrus caudatus Provancher, 1875. Nat. Canad. 7: 313. ♀.
Aenoplax longicauda Walley, 1934. Canad. Ent. 66: 240. ♀.
- cressoni** (Riley). N. H., Mich., Ill., Mo. Host: *Microgaster gelechiae* Riley?, *Gambrus nuncius* (Say).
Hemiteles (?) *Cressoni* Riley, 1869. Mo. State Ent., Ann. Rpt. 1: 177. ♂.
Hemiteles compactus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 398. ♀. Described by virtue of Ashmeads' inclusion of "*compactus* Cresson" in a key; Ashmead did not realize *compactus* was a manuscript name on a specimen Cresson had identified for Riley (see Cushman, 1919).
Hemiteles cressonii Dalla Torre, 1902. Cat. Hym., v. 3, p. 647. Emend.
- Taxonomy: Cushman, 1919. U. S. Natl. Mus., Proc. 55: 525-526. — Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 65.
- extensor** (Cushman). Calif.
Isadelphus extensor Cushman, 1919. U. S. Natl. Mus., Proc. 55: 527. ♀.
- gigas** (Provancher). Que., Ont., Mass., Conn., N. Y., N. J., Alta.
Hemiteles gigas Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 59. ♂.
Platylabus gigantis Dalla Torre, 1902. Cat. Hym., v. 3, p. 783. Unnecessarily proposed n. name for *H. gigas* Provancher (April, 1886) which was not preocc. in *Platylabus* by Kriechbaumer (August, 1886).
Phygadeuon (Bachia?) tumidiformis Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 335, 336. ♂.
Hemiteles (Zoophthorus) nigricaniformis Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 338, 340. ♂.
- hydrophilus** (Ashmead). N. S., Maine, N. Y. Host: *Epinotia nanana* (Treit.).
Hemiteles hydrophilus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 401. ♀.
- intermedius** (Cresson). Tex.
Phygadeuon intermedius Cresson, 1874. Amer. Ent. Soc., Trans. 4: 160. ♀.
- Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 65.
- laplantei** Mason. Newfoundland (insular) s. to Maine, w. to s. Alaska and Oreg. Host: *Meteorus niveitarsis* (Cr.), *Gilpinia hercyniae* (Htg.), *Neodiprion nanulus nanulus* Schedl, *N. pratti banksianae* Roh., *N. swaini* Midd., *N. tsugae* Midd., *Heterarthrus nemoratus* (Fall.), *Pikonema alaskensis* (Roh.), *Pristiphora erichsonii* (Htg.), *Acleris gloverana* (Wlshn.), *A. variata* (Fern.), *Choristoneura fumiferana* (Clem.), *Lambdina fiscellaria fiscellaria* (Gn.), *L. f. lugubrosa* (Hulst), *Rheumaptera hastata* (L.).
Mastrus laplantei Mason, 1968. Canad. Ent. 100: 19. ♂, ♀.
- laricellae** (Mason), n. comb. N. B., P. E. I., Ont., Wis., n.e. Calif. Host: *Argyresthia laricella* Kft. This species is placed provisionally in *Mastrus* (see foregoing discussion under *Lysibia*).
Alegina laricellae Mason, 1961. Canad. Ent. 97: 4. ♂, ♀.
- Morphology: Eidt, 1962. Canad. Ent. 94: 32 (final-instar larva).
- mucronatus** (Provancher). N. H., Ont., Mass., Conn., N. J., Ga. Host: *Gambrus* sp.
Hemiteles mucronatus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 58. ♂.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 65.

pilifrons (Provancher). Que. s. to N. C., w. to B. C. and Calif. Host: *Acronicta betulae* (Riley), *Grapholitha molesta* (Bsk.), *Laspeyresia pomonella* (L.).

Orthocentrus pilifrons Provancher, 1879. Nat. Canad. 11: 279. "♀" = ♂.

Hemiteles cryptiformis Riley, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 153. Nomen nudum.

Aenoplex betulaecola Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 208. ♀.

Aenoplex plesiotypus Cushman, 1915. U. S. Natl. Mus., Proc. 48: 510. ♀.

Taxonomy: Cushman, 1917. U. S. Natl. Mus., Proc. 53: 460.

pinifoliae (Cushman), n. comb. Mass., La. Host: *Exoteleia* sp., *E. pinifoliella* (Chamb.). As with *M. laricellae* (Mason), this species is placed provisionally in *Mastrus* (see foregoing discussion under *Lysibia*).

Hemiteles pinifoliae Cushman, 1933. U. S. Natl. Mus., Proc. 82 (14): 5. ♂, ♀.

polychrosidis (Cushman). R. I., N. Y., Pa. Host: *Paralobesia viteana* (Clem.).

Aenoplex polychrosidis Cushman, 1919. U. S. Natl. Mus., Proc. 55: 524. ♂, ♀.

rubricornis (Ashmead). Va.

Hemiteles rubricornis Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 405. ♀.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 65.

rufipes (Ashmead). Alaska.

Aenoplex rufipes Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 188. ♂.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 65.

smithii (Packard). Que. w. to Wash., s. to N. J., Ill., Colo., and Oreg. Host: *Gambrus extrematis* (Cr.), *Amelastegia glabrata* (Fall.).

Cryptus Smithii Packard, 1865. Boston Soc. Nat. Hist., Proc. 9: 346. ♂, ♀.

Echthrus rubripes Provancher, 1883. Nat. Canad. 14: 16. ♀.

Phaeogenes crassitelus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 41. ♀.

Aenoplex nigrosoma Cushman, 1917. U. S. Natl. Mus., Proc. 53: 460. ♂, ♀.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 65.

subspinosus (Provancher). Que., R. I., N. Y.

Phygadeuon subspinosus Provancher, 1882. Nat. Canad. 13: 336. ♂.

Genus AMYDRAULAX Cushman

Amydraulax Cushman, 1922. U. S. Natl. Mus., Proc. 60 (21): 4.

Type-species: *Amydraulax pulchra* Cushman. Monotypic and orig. desig.

There is an undescribed species which apparently occurs in northern Mexico as well as in the southwestern U. S.; it has been reared from cones of *Pinus ponderosa*. The genus is not known to occur outside of the southwestern part of the Nearctic region.

pulchra Cushman. Calif. Ecology: The only host known for *pulchra* is a cerambycid which bores in the branches of *Sequoia gigantea*. Host: *Callidium sequarium* Fisher.

Amydraulax pulchra Cushman, 1922. U. S. Natl. Mus., Proc. 60 (21): 5. ♀.

Genus APOTEMNUS Cushman

Apotemnus Cushman, 1940. U. S. Natl. Mus., Proc. 88: 359.

Type-species: *Cryptus truncatus* Cushman. Monotypic and orig. desig.

Only the type-species is known.

truncatus Cushman. Oreg., Calif. Ecology: Reared from cones of *Cupressus macrocarpa*.

Apotemnus truncatus Cushman, 1940. U. S. Natl. Mus., Proc. 88: 360. ♀.

Genus HELICOSTIZUS Foerster

Brachycentrus Taschenberg, 1865. Ztschr. f. die Gesam. Naturw. Halle 25: 106. Preocc. by Curtis, 1834.

- Type-species: *Cryptus pimplarius* Taschenberg. Monotypic. The type-species is regarded as a synonym of *H. restaurator restaurator* (Fabricius).
- Helcostizus* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 186.
- Type-species: *Cryptus brachycentrus* Gravenhorst. By subsequent monotypy from inclusion by Schmiedeknecht, 1888. The type-species is regarded as a synonym of *H. restaurator restaurator* (Fabricius).
- Cyrtocryptus* Marshall, 1872. Cat. Brit. Hym., v. 3, p. 41.
- Type-species: *Cryptus brachycentrus* Gravenhorst. Monotypic.
- Mesocryptus* Thomson, 1873. Opusc. Ent. 5: 519, 521.
- Type-species: *Cryptus brachycentrus* Gravenhorst. Monotypic and orig. desig.
- Heterocryptus* Woldstedt, 1873. Bidr. till Kann. af Finlands Natur och Folk 21: 73.
- Type-species: *Cryptus brachycentrus* Gravenhorst. Desig. by Viereck, 1914.
- Asternaulax* Viereck, 1912. U. S. Natl. Mus., Proc. 42: 632.
- Type-species: *Asternaulax fiskei* Viereck. Monotypic and orig. desig.
- Chenberghus* Navas, 1930. Soc. Ent. de Espana, Bol. 13: 43. N. name for *Brachycentrus* Taschenberg.

This genus was formerly placed by Townes in the Cryptini, where it was a member of his now defunct subtribe Echthrina. Townes (1970) said little concerning his placement of *Helcostizus* in the Hemiteliini, which leads me to suppose that he placed it here because he did not know what else to do with it. He mentioned *Helcostizus* as one of a number of genera showing "convergence toward" his newly erected subtribe Gabuniina (Cryptini), but said that in certain cases (without saying which cases) it is uncertain whether these genera should be placed in the Gabuniina or elsewhere.

- Revision: Cushman, 1919. U. S. Natl. Mus., Proc. 55: 531-535. —Townes and Townes, 1962. U. S. Natl. Mus. Bul. 216 (pt. 3): 513-522.
- Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 326.
- annulicornis** (Walsh). N. Y., Md., Va., Mich., Ill., Okla. Host: *Elaphidionoides parallelus* (Newm.)?
- Echthrus annulicornis* Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 159. ♀.
- Helcostizus bicarinatus* Cushman, 1919. U. S. Natl. Mus., Proc. 55: 532. ♀.
- Taxonomy: Cushman, 1924. U. S. Natl. Mus., Proc. 64 (4): 8.
- collinus** (Provancher). Que. Not included in the revision by Townes and Townes (1962) and probably synonymous with one of the taxa included.
- Mesostenus collinus* Provancher, 1879. Nat. Canad. 11 (no. 126): 111. ♂.
- Taxonomy: Barron, 1975. Nat. Canad. 102: 453-454 (lectotype selected).
- oxyura** Townes. Ont., Mich.
- Helcostizus oxyura* Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 517. ♀.
- restaurator canadensis** (Provancher). Que. s. to N. C., w. to Mich. Host: *Atimia confusa* (Say).
- H. restaurator restaurator* (Fabricius) is Eurasian; its synonymy is listed by Townes, Momoi, and Townes (1965).
- Mesochorus Canadensis* Provancher, 1874. Nat. Canad. 6: 299. ♀.
- Asternaulax fiskei* Viereck, 1912. U. S. Natl. Mus., Proc. 42: 632. ♀.
- Taxonomy: Townes, Momoi, and Townes, 1965. Amer. Ent. Inst., Mem. 5: 204-205.
- restaurator yukonensis** (Ashmead). Northwestern N. W. T. w. to Alaska, s. to Ariz. and Calif. Host: *Plectura spinicauda* Mann. Townes and Townes (1962) distinguished *rufiscutum* Cushman as a separate subspecies, but the material they studied included nearly as many specimens which they classified as intermediate between *rufiscutum* and *yukonensis* as there were specimens identified as *rufiscutum*; therefore, I feel it is not practical to recognize *rufiscutum* as a distinct subspecies.
- Pimpla yukonensis* Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 445. ♀.
- Helcostizus rufiscutum* Cushman, 1919. U. S. Natl. Mus., Proc. 55: 533. ♀. N. syn.
- subrectus** Townes. Ariz.
- Helcostizus subrectus* Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 517. ♀.

tibialis Townes, Ont., N. Y., Pa., Mich., Wis.

Helcastizus tibialis Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 516. ♂, ♀.

Genus LOCHETICA Kriechbaumer

Lochetica Kriechbaumer, 1892. Ent. Nachr. 18: 340.

Type-species: *Phygadeuon pimplarius* Thomson. Monotypic. The type-species is regarded as a synonym of *L. Westoni* (Bridgman).

This small Holarctic genus includes three Palearctic species and one undescribed species which occurs in the western U. S. (Townes, 1970).

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 70.

SUBTRIBE ETHELURGINA

Genus RHEMBOBIUS Foerster

Rhembobius Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 184.

Type-species: *Phygadeuon quadrispinus* Gravenhorst. Monotypically included and desig. by Ashmead, 1900.

Ulothymus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 185.

Type-species: *Ichneumon perscrutator* Thunberg. Monotypically included and desig. by Perkins, 1962.

Acanthocryptus Thomson, 1873. Opusc. Ent. 5: 520, 521.

Type-species: *Phygadeuon quadrispinus* Gravenhorst. Monotypic and orig. desig.

This small Holarctic genus was removed from the Aptesini by Townes (1970), who discussed his reasons for transferring it to the Hemitelini. No other genus of Hemitelini is known to have species in which the adult females overwinter, but it is apparently not known if any *Rhembobius* sp. overwinters exclusively in this way. The known hosts are saprophagous Syrphidae.

Revision: Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 272-278.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 112.

abdominalis (Provancher). N. S. s. to Conn., w. to n. Alaska and Calif.; Hawaii. Host: *Eumerus strigatus* (Fall.), *Merodon equestris* (F.), *Xylota* sp. Townes and Gupta (1962) recognized three broadly overlapping subspecies.

Phygadeuon abdominalis Provancher, 1874. Nat. Canad. 6: 280. ♂, ♀.

Phygadeuon 4-carinatus Provancher, 1875. Nat. Canad. 7: 180, 183. ♂.

Platylabus pacificus Harrington, 1894. Canad. Ent. 26: 210. ♀.

Rhembobius abdominalis montanus Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 275. ♂, ♀.

Taxonomy: Cushman, 1930 (1929). U. S. Natl. Mus., Proc. 76 (25): 3.

parcus Townes. Mich., Man., Sask.

Rhembobius parcus Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 273. ♂, ♀.

Genus ETHELURGUS Foerster

Tolmerus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 177. Preocc. by Loew, 1849.

Type-species: *Phygadeuon sodalis* Taschenberg. Monotypically included and desig. by Townes and Townes, 1966.

Ethelurgus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 180.

Type-species: *Hemiteles (Ehtelurgus) loniceræ* Viereck. By subsequent monotypy from inclusion by Viereck, 1917.

Nuneches Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 186.

Type-species: *Phygadeuon sodalis* Taschenberg. Monotypically included and desig. by Perkins, 1962.

Zamicrotoridea Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 340.

Type-species: *Hemiteles (Zamicrotoridea) orbiformis* Viereck. Monotypic.

I have seen one undescribed Nearctic species in the U. S. Natl. Museum collection, but suppose that there are other undescribed Nearctic species because Townes (1970) said that *Ethelurgus* is a moderate sized genus. Males of *Ethelurgus* will not key to the subtribe Ethelurgina in Townes (1970) because only the females have the apical margin of the clypeus impressed.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 7, 72.

syrrhicola (Ashmead). Conn. s. to S. C., w. to Oreg. Host: *Allograpta obliqua* (Say), *Baccha* (*Ocyptamus*) *fascipennis* Wied., *Mesograpta polita* (Say), *Syrphus rectus* O. S. *Hemiteles syrrhicola* Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 399. ♀.
Hemiteles (*Ethelurgus*) *loniceræ* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 340. ♀.
Hemiteles (*Zamicrotoridea*) *orbiformis* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 340. ♂.

SUBTRIBE ENDASEINA

Genus CHARITOPES Foerster

Charitopes Foerster, 1868. Naturh. Verh. Rheinlande, Verh. 25: 181.

Type-species: *Hemiteles* (*Charitopes*) *chrysopæ* Brischke. By subsequent monotypy from inclusion by Brischke, 1890.

Fianonia Seyrig, 1952. Acad. Malgache, Mem. 39: 31.

Type-species: *Fianonia problematica* Seyrig. Monotypic and orig. desig.

The species of this genus which have been reared are parasites of Hemerobiidae.

gastricus (Holmgren). Calif.

Hemiteles gastricus Holmgren, 1869 (1868). Eug. Resa, pt. 2 (Zool.), sect. 1 (Ins.), p. 401. ♀.

Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 106.

mellicornis (Ashmead), n. comb. Mass. s. to S. C., w. to Minn. and Iowa. Host: *Micromus posticus* (Wlkr.).

Hemiteles mellicornis Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 404. ♀.

Charitopes mellicornis Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 383. Nomen nudum.

piceiventris (Harrington). B. C.

Hemiteles piceiventris Harrington, 1894. Canad. Ent. 26: 213. ♀.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 80.

plectiscinus (Roman). Greenland.

Phygadeuon plectiscinus Roman, 1916. Arkiv for Zool. 10 (22): 5. ♂, ♀.

Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 111.

Genus ADIASTOLA Foerster

Adiastola Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 180.

Type-species: *Adiastola americana* Howard. By subsequent monotypy from inclusion by Howard, 1897.

Townes (1970) incorrectly treated *Adiastola* as a synonym of *Mastrus*.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 64.

columbiae (Viereck). D. C. Host: *Iseropus coelebs* (Walsh)?

Adiastola americana Howard, 1897. U. S. Dept. Agr., Div. Ent., Tech. Ser. 5: 54. ♂, ♀.

Temporarily preocc. in *Hemiteles* by *Theroscopus americanus* Ashmead, 1896.

Hemiteles columbiae Viereck, 1910. In Smith, N. J. State Mus., Ann. Rpt. for 1909, p. 631. N. name for *A. americana* Howard.

Genus MEDOPHRON Foerster

Baryntica Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 184.

Type-species: *Stylocryptus elegans* Schmiedeknecht. Monotypically included and desig. by Perkins, 1962.

Medophron Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 185.

Type-species: *Medophron niger* Brischke. By subsequent monotypy from inclusion by Brischke, 1881. The type-species is regarded as a synonym of *M. afflictor* (Gravenhorst).

caudatus (Provancher). Que., s. Alaska.

Cryptus caudatus Provancher, 1875. Nat. Canad. 7: 314. ♀.

Bathymetis bicolor Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 182. ♂, ♀.

dytiscivorus Mason. Ont. Host: *Dytiscus fasciventris* Say.

Medophron dytiscivorus Mason, 1968. Canad. Ent. 100: 21. ♂, ♀.

Genus ENDASYS Foerster

Endasys Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 184.

Type-species: *Stylocryptus analis* Thomson. Desig. by Viereck, 1914 from two species included by Roman, 1909.

Scinascopus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 185.

Type-species: *Phygadeuon cnemargus* Gravenhorst. By subsequent monotypy from inclusion by Brischke, 1891. The type-species is regarded as a synonym of *E. parviventris* (Gravenhorst).

Bachia Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 186. Preocc. by Gray, 1845.

Type-species: *Phygadeuon (Bachia) testaceipes* Brischke. By subsequent monotypy from inclusion by Brischke, 1891.

Stylocryptus Thomson, 1873. Opusc. Ent. 5: 520, 521.

Type-species: *Phygadeuon brevis* Gravenhorst. Monotypic.

Bachiana Strand, 1928 (1926). Arch. f. Naturgesch. (A) 92 (8): 52. N. name for *Bachia* Foerster.

auriculiferus (Viereck). Conn., N. Y.

Phygadeuon (Bachia?) auriculiferus Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 336. ♂.

bicolor (Lundbeck). Greenland.

Phygadeuon bicolor Lundbeck, 1897 (1896). Dansk Naturhist. For. Kjobenhavn, Vidensk. Meddel., p. 227. ♀.

Taxonomy: Roman, 1916. Arkiv for Zool. 10 (22): 4, 5.

maculatus (Provancher). Que. s. to Md., w. to Mich. and Ohio.

Phygadeuon maculatus Provancher, 1875. Nat. Canad. 7: 178, 182. ♀.

monticola (Dalla Torre). Colo.

Phygadeuon montanus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 309. ♀. Preocc. (presently?) in *Phygadeuon* by *Cryptus montanus* Gravenhorst, 1829.

Phygadeuon monticola Dalla Torre, 1902. Cat. Hym., v. 3, p. 689. N. name for *P. montanus* Cresson.

mucronatus (Provancher). Que. s. to Va., w. to Mich. Host: *Arge clavicornis* (F.), *A. pectoralis* (Leach).

Phygadeuon mucronatus Provancher, 1879. Nat. Canad. 11: 73. ♀.

Melophron (!) *abdominalis* Ashmead, 1906. In Slosson, Ent. News 17: 324. Nomen nudum.

paludicola (Brues). Colo.

Oxytorus paludicola Brues, 1908. Wis. Nat. Hist. Soc., Bul. 6: 50. ♂.

pubescens (Provancher). Que. s. to Ga., w. to Alta. and Colo.

Phygadeuon pubescens Provancher, 1874. Nat. Canad. 6: 282. ♂.

Phygadeuon dubius Provancher, 1874. Nat. Canad. 6: 283. ♀.

Alomya pulchra Provancher, 1875. Nat. Canad. 7: 120. ♂.

Phygadeuon pallicoxus Provancher, 1879. Nat. Canad. 11: 75. ♂.

Phygadeuon pallidicoxus Dalla Torre, 1902. Cat. Hym., v. 3, p. 690. Emend.

rotundiceps (Provancher). Que.

Phygadeuon rotundiceps Provancher, 1877. Nat. Canad. 9: 12. ♀.

Taxonomy: Provancher, 1879. Nat. Canad. 11: 74.

- subclavatus** (Say). N. B. s. to Fla., w. to Oreg. and Calif. Host: *Gilpinia hercyniae* (Htg.), *Neodiprion excitans* Roh., *N. lecontei* (Fitch), *N. nanulus nanulus* Schedl, *N. pratti banksianae* Roh., *N. pratti pratti* (Dyar), *N. rugifrons* Midd., *N. sertifer* (Geoff.), *N. suainei* Midd., *N. taedae linearis* Ross, *N. tsugae* Midd., *N. virginiana* Roh., *Zadiprion townsendi* (Cock.).
- Cryptus subclavatus* Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., ed. 2, p. 584. Nomen nudum.
- Cryptus subclavatus* Say, 1836. Boston Jour. Nat. Hist. 1: 237. ♀.
- Phygadeuon vulgaris* Cresson, 1864. Ent. Soc. Phila., Proc. 3: 310. ♀.
- Ichneumon inflatus* Provancher, 1875. Nat. Canad. 7 (1): 24 (key); 7 (3): 83. ♂.
- Platylabus ruficornis* Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 36, 38. ♂, ♀.
- Melophron* (!) *monticola* Ashmead, 1900. In Slosson, Ent. News 11: 319. Nomen nudum.
- Phygadeuon* (*Bathynetis*) *patulus* Viereck, 1911. U. S. Natl. Mus., Proc. 40: 193. ♂.
- Phygadeuon* (*Bachia*?) *brittoni* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 336. ♂.
- Taxonomy: Cushman and Gahan, 1921. Ent. Soc. Wash., Proc. 23: 162. —Finlayson, 1960. Canad. Ent. 92: 25, 32 (final-instar larva).
- Biology: Tripp, 1961. Canad. Ent. 93: 53. —Finlayson, 1963. Canad. Ent. 95: 491.
- texanus** (Cresson). Tex.
- Phygadeuon texanus* Cresson, 1872. Amer. Ent. Soc., Trans. 4: 160. ♂.

Genus GLYPHICNEMIS Foerster

- Glyphicnemis* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 181.
- Type-species: *Phygadeuon vagabundus* Gravenhorst. Monotypically included and desig. by Ashmead, 1900.
- Gnathocryptus* Thomson, 1873. Opusc. Ent. 5: 520, 521.
- Type-species: *Phygadeuon vagabundus* Gravenhorst. Monotypic and orig. desig.
- Semiodes* Harrington, 1894. Canad. Ent. 26: 247.
- Type-species: *Semiodes seminiger* Harrington. Monotypic.

I have seen specimens representing what appear to be several undescribed Nearctic species.

mandibularis (Cresson). Que. s. to Md., w. to B. C. and Calif.

- Phygadeuon mandibularis* Cresson, 1864. Ent. Soc. Phila., Proc. 3: 311. ♀.
- Ischnus ruficornis* Provancher, 1875. Nat. Canad. 7 (4): 110. ♂.
- Phygadeuon ruficornis* Provancher, 1875. Nat. Canad. 7 (6): 179. ♂. Preocc. in *Phygadeuon* by Gravenhorst, 1829 and in *Glyphicnemis* by Provancher, 1875, no. 4, p. 110.
- Phygadeuon crassipes* Provancher, 1875. Nat. Canad. 9: 11. ♀.
- Phygadeuon californicus* Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 358. ♂.
- Semiodes seminiger* Harrington, 1894. Canad. Ent. 26: 247. ♂.

SUBTRIBE BATHYTRICHINA

This subtribe includes six genera, but only *Baththrix*, which is nearly worldwide in distribution, occurs in the Nearctic fauna.

Genus BATHYTRIX Foerster

- Ischnurgops* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 175.
- Type-species: *Cryptus claviger* Taschenberg. Monotypically included and desig. by Viereck, 1914.
- Steganops* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 175.
- Type-species: *Cryptus claviger* Taschenberg. Monotypically included and desig. by Viereck, 1914.
- Baththrix* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 175.
- Type-species: *Baththrix meteori* Howard. Desig. by Viereck, 1914 from two species included by Howard, 1897.
- Panargyrops* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 182.

Type-species: *Cryptus claviger* Taschenberg. Desig. by Viereck, 1914 from two species included by Schmiedeknecht, 1888.

Gausocentrus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 198.

Type-species: *Gausocentrus gyrini* Ashmead. By subsequent monotypy from inclusion by Ashmead, 1894.

Stenoschema Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 220. Nomen nudum.

Leptocryptus Thomson, 1873. Opusc. Ent. 5: 521.

Type-species: *Cryptus claviger* Taschenberg. Desig. by Viereck, 1914 from nine species included by Thomson, 1884.

Agenora Cameron, 1909. Bombay Nat. Hist. Soc., Jour. 19: 722.

Type-species: *Agenora hirticeps* Cameron. Monotypic.

Members of this genus oviposit into cocoons of various insects, often those of Braconidae or other Ichneumonidae.

Revision: Thomson, 1884. Opusc. Ent. 10: 963-966 (European spp.). —Cushman, 1920. U. S.

Natl. Mus., Proc. 58: 261-264. —Viereck, 1925. Canad. Ent. 57: 77-78.

areolaris (Cushman). Alaska, Oreg., Calif. Host: *Neodiprion tsugae* Midd.

Panargyrops areolaris Cushman, 1939. Wash. Acad. Sci., Jour. 29: 397. ♂, ♀.

claviger (Taschenberg). Que., Maine, Tex., Alta., Colo., B. C., Wash.; Eurasia. Host:

Ametastegia glabrata (Fall.).

Cryptus claviger Taschenberg, 1865. Ztschr. f. die Gesam. Naturw. Halle 25: 76. ♂.

Cryptus (*Chaeterymma*?) *ater* Brischke, 1880. Naturf. Gesell. Danzig, Schr. (n. f.) 5: 338. ♂, ♀.

Mesostenus sericeus Provancher, 1875. Nat. Canad. 7: 264. ♂.

Cryptus sericeifrons Provancher, 1879. Nat. Canad. 11 (no. 125): 132. ♀.

Agenora hirticeps Cameron, 1909. Bombay Nat. Hist. Soc., Jour. 19: 722. ♂.

Bathythrix tibialis Cushman, 1917. U. S. Natl. Mus., Proc. 53: 458. ♂, ♀.

Panargyrops texanus Cushman, 1920. U. S. Natl. Mus., Proc. 58: 262. ♀. Preocc. in

Bathythrix by Ashmead, 1890.

Panargyrops pacificus Cushman, 1920. U. S. Natl. Mus., Proc. 58: 262. ♀.

Thysiotorus (*Panargyrops*) *tegularis* Viereck, 1925. Canad. Ent. 57: 78. ♀.

Thysiotorus (*Panargyrops*) *conjunctus* Viereck, 1925. Canad. Ent. 57: 78. ♂, ♀.

Taxonomy: Oehlke, 1966 (1965). Beitr. z. Ent. 15: 845-846.

fragilis (Viereck). N. Mex.

Plesiognathus (?) *fragilis* Viereck, 1903. In Skinner, Amer. Ent. Soc. Trans. 29: 82. ♂.

gyrinophaga (Cushman). N. Y., Ont., Mich., Iowa. Host: *Gyrinus* sp.

Gausocentrus gyrini Ashmead, 1894. Canad. Ent. 26: 25. ♂. Preocc. in *Bathythrix* by

Hemiteles gyrini Parfitt, 1881.

Hemiteles gyrinophagus Cushman, 1930 (1929). U. S. Natl. Mus., Proc. 76 (25): 5. N. name for *G. gyrini* Ashmead.

Panargyrops insula DeGant, 1933. U. S. Natl. Mus., Proc. 82: 2. ♂, ♀.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 90 (syn.).

latifrons (Cushman). Southern Alaska, Wash., Oreg. Host: *Neodiprion tsugae* Midd., *Meteorus* sp.?

Thysiotorus latifrons Cushman, 1939. Wash. Acad. Sci., Jour. 29: 396. ♂, ♀.

metei (Howard). R. I. and N. Y. s. to Ga. and Miss. Host: *Meteorus communis* (Cr.), *Iseropus coelebs* (Walsh)?

Bathythrix metei Howard, 1897. U. S. Dept. Agr., Div. Ent., Tech. Ser. 5: 53. ♂, ♀.

peregrina (Cresson). Que. s. to Va., w. to Iowa and Kans.

Mesoleptus? *peregrinus* Cresson, 1868. Amer. Ent. Soc. Trans. 2: 102. ♂, ♀.

Panargyrops thoracicus Cushman, 1919. U. S. Natl. Mus., Proc. 55: 528. ♀.

pimplae Howard. N. Y. s. to Va., w. to S. Dak. Host: *Gambrus extrematis* (Cr.), *Iseropus coelebs* (Walsh)?, *Gyrinus* sp.?

Bathythrix pimplae Howard, 1897. U. S. Dept. Agr., Div. Ent., Tech. Ser. 5: 54. ♀.

Biology: Butcher, 1933. Ent. Soc. Amer., Ann. 26: 82.

subargentea (Cresson). Pa., Alta., Idaho, Wash.

Cryptus subargenteus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 302. ♀.

Exolytus sericeifrons Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 355. ♀. Preocc. in

Bathythrix by *Cryptus sericeifrons* Provancher.

Thysiotorus (*Panargyrops*) *seamansi* Viereck, 1925. Canad. Ent. 57: 77. ♀.

texana (Ashmead). Tex.

Stilpnus texanus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 397. ♀.

triangularis (Cresson). Maine w. to Wis., s. to Ala. Host: *Apanteles melanoscelus* (Ratz.), *Meteorus versicolor* (Wesm.), *Hyposoter* sp., *Phobocampe geometrae* (Ash.), *Diprion similis* (Htg.).

Mesoleptus triangularis Cresson, 1868. Amer. Ent. Soc., Trans. 2: 101. ♂.

Mesostenus pallipes Provancher, 1875. Nat. Canad. 7: 264. ♀.

Thysiotorus? smithi Cushman, 1920. U. S. Natl. Mus., Proc. 58: 263. ♂, ♀.

Taxonomy: Cushman, 1939. Wash. Acad. Sci., Jour. 29: 396 (syn.).

SUBTRIBE PHYGADEUONTINA

Genus OECOTELMA Townes

Oecotelma Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 94.

Type-species: *Hemiteles cushmani* Butcher. Monotypic and orig. desig.

cushmani (Butcher). Mich. Host: *Gyrinus* sp.

Hemiteles cushmani Butcher, 1933. Ent. Soc. Amer., Ann. 26: 76. ♂, ♀.

Genus SULCARIUS Townes

Sulcarius Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 95.

Type-species: *Hemiteles hellbachi* Schmiedeknecht. Orig. desig.

Species of this genus apparently parasitize larvae of caddisflies whose cases are left exposed by the receding waters of vernal ponds or intermittent streams.

biannulatus (Gravenhorst). Minn.?, Ill.?, Europe. Host: *Limnephilus indivisus* Walker. North American specimens were identified as *biannulatus* by Roman (1925) and Mickel and Milliron (1939), but the question of conspecificity of Nearctic and Palearctic specimens has apparently not been readdressed; therefore, the occurrence of *biannulatus* in North America remains unsubstantiated.

Hemiteles biannulatus Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 846. ♀.

Hemiteles Hellbachi Schmiedeknecht, 1905. Opusc. Ichn., v. 2, p. 851. ♀. Syn. verified by Dr. Klaus Horstmann (personal commun., 1976).

Hemiteles biannulatus (!) Oehlke and Townes, 1969. Beitr. z. Ent. 19: 400.

Taxonomy: Roman, 1925 (1924). Arkiv for Zool. 17 A (4): 16. —Hellen, 1967. Notulae Ent. 47: 107. —Oehlke and Townes, 1969. Beitr. z. Ent. 19: 400. —Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 96.

Biology: Mickel and Milliron, 1939. Ent. Soc. Amer., Ann. 42: 578-580.

bicornutus (Ashmead). Mo.

Hemiteles bicornutus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 403. ♂.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 96.

glacialis (Ashmead). B. C. The type-locality (Lowe Inlet, B. C.) was erroneously recorded by Townes (1944) as an Alaskan locality.

Philonygus (!) *glacialis* Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 189. ♂.

Taxonomy: Townes, 1944. Amer. Ent. Soc., Mem. 11: 186. —Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 96.

Genus ORTHIZEMA Foerster

Orthizema Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 178.

Type-species: *Hemiteles (Orthizema) ornatus* Brischke. By subsequent monotypy from inclusion by Brischke, 1890. The type-species is regarded as a synonym of *O. subannulatum* (Bridgman).

Naetes Foerster, 1868. Naturh. Ver. Rheinlande, Ver. 25: 185.

Type-species: *Hemiteles (Naetes(!)) rufus* Brischke. By subsequent monotypy from inclusion by Brischke, 1892. The type-species is regarded as a synonym of *O. hadrocerus* (Thomson).

Phyzelus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 185.

Type-species: *Phyzelus fasciatus* Brischke. By subsequent monotypy from inclusion by Brischke, 1888. Townes and Gupta (1962) disputed Perkins' (1962) synonymy of *fasciatus* with *Aptesis flagitator* (Rossi) on the premise that *A. flagitator* does not agree with the original description of *fasciatus* (the holotype of *fasciatus* having been destroyed), and Townes (1970) placed *fasciatus* as a synonym of *O. hadrocerus* (Thomson).

Townes (1970) stated that *Orthizema* is a large genus of Holarctic distribution, but did not state how many undescribed Nearctic species he has seen.

Taxonomy: Perkins, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 11: 446. — Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 247. — Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 97-98.

testaceipes (Cushman). N. H., N. Y., Pa.

Adiastolus testaceipes Ashmead, 1906. In Slosson, Ent. News 17: 324. Nomen nudum.
Lyneon? testaceipes Cushman, 1922. U. S. Natl. Mus., Proc. 61 (8): 17. ♀.

Genus UCHIDELLA Townes

Itamus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 179. Preocc. by Schmidt-Goebel, 1846.

Type-species: *Hemiteles (Itamus) okamotoi* Uchida. By subsequent monotypy from inclusion by Uchida, 1936. The type-species is regarded as a synonym of *U. marginata* (Uchida).

Uchidella Townes, 1957. Ent. Soc. Wash., Proc. 59: 109. N. name for *Itamus* Foerster.

Except for one species known from Taiwan, *Uchidella* is said to be a Holarctic genus of moderate size (see Townes, 1970). There are no described Nearctic species.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 99.

Genus GNOTUS Foerster

Gnotus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 179.

Type-species: *Hemiteles tenuicornis* Gravenhorst. Included and desig. by Perkins, 1962. The type-species is regarded as a synonym of *G. tenuipes* (Gravenhorst).

chionops (Gravenhorst). N. Y., Pa., Md., Mich.; Japan; Europe. Townes (1970) stated that *chionops* is Holarctic without mentioning specific localities outside Europe; these he communicated to me personally and stated that he regards the European, Japanese, and Nearctic specimens he has seen as belonging to three separate subspecies.

Hemiteles chionops Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 797. ♂.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 100.

Genus HEDYLUS Foerster

Hedylus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 183.

Type-species: *Hedylus crassicornis* Ashmead. By subsequent monotypy from inclusion by Ashmead, 1899.

This genus is transferred from the Endaseina where Townes (1970) placed it as a synonym of *Medophron*. Although the type-species of *Hedylus* somewhat resembles *Medophron* species in the structure of the head and ovipositor, it differs from *Medophron* species so greatly in wing venation and petiolar structure that it seems illogical to suggest any close phyletic relationship

between *Hedylus* and *Medophron*. In *Hedylus crassicornis* the nervellus is reclivous, the discoidella is absent, the apical portion of the mediella is very strongly curved, and the petiole has the apex of the sternite opposite the spiracles. In Townes' (1970) key to the genera of Phygadeuontina *H. crassicornis* runs to *Stibeutes*.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 81, 92-94.

brooksi (Brooks), n. comb. W. Va. Host: *Craonius inaequalis* (Say). This species was placed in *Stibeutes* by Townes (1970); it seems more a misfit in *Stibeutes* than in *Hedylus*.

Stiboscopus brooksi Ashmead, 1906. In Brooks, W. Va. Agr. Expt. Sta., Bul. 100: 240. Nomen nudum.

Stiboscopus brooksi Brooks 1918. U. S. Dept. Agr., Bul. 730: 14. ♀.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 100, 395.

crassicornis Ashmead. N. H., Wis.; e. U. S. S. R.

Hedylus crassicornis Ashmead, 1899 (1898). In Jordan, Fur Seals and Fur Seal Isls. No. Pacific, v. 4, p. 339. ♀.

Genus STIBEUTES Foerster

Stibeutes Foerster, 1850. Arch. f. Naturgesch. 16 (1): 76.

Type-species: *Stibeutes gravenhorstii* Foerster. Desig. by Ashmead, 1900.

Chamaezelus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 181.

Type-species: *Stibeutes heinemanni* Foerster. Monotypically included and desig. by Perkins, 1962.

Schizopleuron subg. *Schizopleuron* Aubert, 1968. Soc. Ent. de. Mulhouse, Bul. 24: 6.

Described as *Schizopleuron* n. genus or *Medophron* subg. *Schizopleuron* n. subg.

Type-species: *Medophron* (*Schizopleuron*) *tricinctor* Aubert. Monotypic. The type-species was alternatively described as *Schizopleuron tricinctor* Aubert.

yuasai (Bradley). N. Y.

Phygadeuon (*Stibeutes*) *yuasai* Bradley, 1918. Brooklyn, Ent. Soc., Bul. 13: 99. ♀.

Genus THEROSCOPUS Foerster

Theroscopus Foerster, 1850. Arch. f. Naturgesch. 16 (1): 72.

Type-species: *Pezomachus pedestris* Gravenhorst. Desig. by Viereck, 1914. *P. pedestris* Gravenhorst is an identification of *Ichneumon pedestris* Fabricius.

Chamerpes Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 172.

Type-species: *Pezomachus hemipterus* Gravenhorst. Monotypically included and desig. by Viereck, 1914. *P. hemipterus* Gravenhorst is an identification of *Ichneumon hemipterus* Fabricius which Viereck referred to as "*Hemiteles hemipterus* Gravenhorst."

Eriplanus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 180.

Type-species: *Hemiteles* (*Eriplanus*) *metacomet* Viereck. By subsequent monotypy from inclusion by Viereck, 1917.

Phyrtus Foerster, 1868. Naturh. Verh. Rheinlande, Verh. 25: 181.

Type-species: *Pezomachus hemipterus* Gravenhorst. Monotypically included and desig. by Ashmead, 1900. *P. hemipterus* Gravenhorst is an identification of *Ichneumon hemipterus* Fabricius which Ashmead referred to as "*Hemiteles hemipterus* Gravenhorst."

Thysiotorus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 181.

Type-species: *Hemiteles* (*Physiotorus*!) *brevipennis* Brischke. Desig. by Viereck, 1914 from two species included by Dalla Torre, 1902. Dalla Torre made the apparently erroneous assumption that *Physiotorus* was a typographical error for *Thysiotorus*. Cushman (1939) and Perkins (1962) suggest that *Physiotorus* was a lapsus Brischke made for *Phyrtus* instead of a typographical error for *Thysiotorus*.

Odontoneura Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 185. N. syn.

Type-species: *Phygadeuon annulicornis* Thomson. Monotypically included and desig. by Perkins, 1962. The systematic position of the type-species is discussed by Frilli (1973).

Aenoplegimorpha Viereck, 1912. U. S. Natl. Mus., Proc. 42: 147.

Type-species: *Aenoplegimorpha phytonomi* Viereck. Monotypic and orig. desig.

Townes (1970) said that *Theroscopus* "is a large genus of Holarctic distribution; the hosts are probably various small cocoons."

Taxonomy: Cushman, 1939. Wash. Acad. Sci., Jour. 29: 395-396. —Perkins, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 11: 392. —Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 101.

—Frilli, 1973. Entomologica 9: 95.

nigriceps (Ashmead). Calif.

Hemiteles nigriceps Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 400. ♀.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 101.

ruficoxus (Provancher). Que. s. to Conn., w. to Alta. and Utah; Eurasia. Adventive? Host:

Hypera postica (Gyll.). The name which has most frequently been applied to this species is *micator* (Gravenhorst), but the original description of *Ichneumon micator* Gravenhorst (1807) cannot apply to this species primarily because Gravenhorst specifically described the female (male not described) as having the scape yellowish-brown and only the apices of abdominal tergites 1 and 2 yellowish-brown; in addition, the *micator* female apparently has black coxae. Cushman (1922) apparently based his suppression of *Aenoplegimorpha phytonomi* as a synonym of *micator* upon a specimen in the U. S. Natl. Museum collection identified as *micator* by Schmiedeknecht. The European concept of *micator* apparently had evolved from Gravenhorst's (1829) expanded definition of the species. Dr. Klaus Horstmann told me (personal commun., 1976) that Gravenhorst (1829) described a senior synonym of *ruficoxus*, and its identity will probably be published prior to the appearance of this catalog.

Hemiteles ruficoxus Provancher, 1874. Nat. Canad. 6: 331. ♂, ♀.

Phygadeuon cornutus Provancher, 1882. Nat. Canad. 13 (no. 155): 334 (key); 13 (no. 156): 356. ♀.

Hemiteles politus Bridgman, 1883. Ent. Soc. London, Trans. 31: 146. ♀. Uncertain syn.; placed as a synonym of *micator* by Horstmann (1972).

Phaenogenes recticornis Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 42. ♂, ♀.

Aenoplegimorpha phytonomi Viereck, 1912. U. S. Natl. Mus., Proc. 42: 147. ♂.

Hemiteles (Eriplanus) metacomet Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist.

Survey Bul. 22: 340. ♀.

Phygadeuon silesiacus Habermehl, 1919. Ztschr. f. Wiss. Insectenbiol. 15: 104. ♀.

Uncertain syn.; placed as a synonym of *micator* by Habermehl (1926).

Taxonomy: Gravenhorst, 1807. Vergl. Uebers. Zool. Systeme, p. 260. —Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 832. —Cushman, 1922. Ent. Soc. Wash., Proc. 24: 64. —Roman, 1925 (1924). Arikiv for Zool. 17 A (4): 15-16. —Habermehl, 1926. Deut. Ent. Ztschr. (for 1926), p. 331. —Horstmann, 1972. Entomologist 105: 220.

Biology: Webster, 1912. U. S. Dept. Agr., Bur. Ent., Bul. 112: 34. —Boulanger, 1969. Ent. Soc. Wash., Proc. 71: 149-150.

scapiphorus (Provancher). Que., Mass., R. I., N. Y.

Atractodes scapiphorus Provancher, 1874. Nat. Canad. 6: 151. ♂.

Taxonomy: Townes, 1939. Canad. Ent. 71: 92. —Barron, 1975. Nat. Canad. 102: 561.

Genus MEGACARA Townes

Megacara Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 102.

Type-species: *Phygadeuon lucens* Provancher. Orig. desig.

This is a small Holarctic genus, with *lucens* (Provancher) being the only described Nearctic species.

lucens (Provancher). Que., Wash.

Phygadeuon lucens Provancher, 1874. Nat. Canad. 6: 281. ♀.

Genus PHYGADEUON Gravenhorst

Phygadeuon Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 635.

Type-species: *Phygadeuon flavimanus* Gravenhorst. Desig. by Westwood, 1840.

Apterophygus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 172.

Type-species: *Apterophygus*(?) *paradoxus* Bridgman. By subsequent monotypy from inclusion by Bridgman, 1889.

Gunopaches Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 174.

Type-species: *Gunopaches crassus* Perkins. Monotypically included and desig. by Perkins, 1962.

Habromma Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 176.

Type-species: *Habromma nigrum* Ashmead. By subsequent monotypy from inclusion by Ashmead, 1902.

Pantolispa Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 178.

Type-species: *Gunopaches crassus* Perkins. Monotypically included and desig. by Perkins, 1962.

Isochresta Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 181.

Type-species: *Isochresta unieincta* Ashmead. By subsequent monotypy from inclusion by Ashmead, 1902.

Bathymetis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 182.

Type-species: *Phygadeuon* (*Bathymetis*) *cylindricus* Brischke. Desig. by Viereck, 1914 from two species included by Brischke, 1891.

Iselir Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 182.

Type-species: *Phygadeuon nitidus* Gravenhorst. Desig. by Viereck, 1914 from seven species included by Dalla Torre, 1902.

Homelys Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 182. Preocc. by Meyer, 1844.

Type-species: *Phygadeuon lapponicus* Thomson. By subsequent monotypy from inclusion by Roman, 1909.

Ernoctona Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 183.

Type-species: *Phygadeuon rugulosus* Gravenhorst. Monotypically included and desig. by Perkins, 1962.

Zaphleges Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 184.

Type-species: *Phygadeuon leucostigmus* Ashmead. By subsequent monotypy from inclusion by Ashmead, 1900.

Phygadeuon subg. *Ischnocryptus* Kriechbaumer, 1892. Ent. Nachr. 18: 351.

Type-species: *Phygadeuon nitidus* Gravenhorst. Desig. by Viereck, 1914.

Members of this large genus parasitize the pupae of cyclorrhaphous Diptera.

aciculatus Provancher. Que., N. H., N. Y., Minn., Alta.

Phygadeuon aciculatus Provancher, 1882. Nat. Canad. 13 (no. 155): 336 (key); 13 (no. 156): 356. ♂.

alaskensis (Ashmead), n. comb. Alaska. The holotype has been found.

Microcryptus alaskensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 184. ♂.

albirictus Cresson. Calif.

Phygadeuon albirictus Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 358. ♂.

americanus (Cushman). Maine, N. H., N. Y.

Epitomus americanus Ashmead, 1902. In Slosson, Ent. News 13: 320. Nomen nudum.

Plesignathus americanus Cushman, 1922. U. S. Natl. Mus., Proc. 61 (8): 23. ♀.

canadensis (Provancher). Que.

Stilpnus Canadensis Provancher, 1875. Nat. Canad. 7: 112. ♂.

capitalis Provancher. Que., Ont., N. Y.

Phygadeuon capitalis Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 57. ♂.

cephalicus Provancher. Que., N. C.

Phygadeuon cephalicus Provancher, 1882. Nat. Canad. 13 (no. 155): 335 (key); 13 (no. 156): 354. ♂.

coloradensis (Ashmead). Colo.

Nematomicrus coloradensis Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 395. ♀.

- cylindraceus** Ruthe. Greenland; Europe. Host: *Fucellia fucorum* (Fall.), *Spaziphora hydromyzina* (Fall.).
Phygadeuon cylindraceus Ruthe, 1859. Stettin. Ent. Ztg. 20: 367. ♂, ♀.
Phygadeuon sudvoldensis Morley, 1947 (1946). Suffolk Nat. Soc., Trans. 6: 37. ♂, ♀.
- Taxonomy: Roman, 1916. Arkiv for Zool. 10 (22): 5. — Aubert, 1975. Soc. Ent. de Mulhouse, Bul. 31: 15 (syn.).
- Biology: Nielsen, 1907. Meddel. om Groenland 39: 385. — Baines and Finlayson, 1949. Ent. Monthly Mag. 85: 150-151.
- epochrae** Viereck. Mont. Host: *Epochra canadensis* (Loew).
Phygadeuon (Plesignathus) epochrae Viereck, 1913. U. S. Natl. Mus., Proc. 44: 567. ♂, ♀.
- hudsonicus** (Cresson). "Hudson's Bay Territory."
Stilpnus hudsonicus Cresson, 1868. Amer. Ent. Soc., Trans. 2: 95. ♂.
- laticinctus** Ashmead. Colo.
Phygadeuon laticinctus Ashmead, 1890. Colo. Biol. Soc., Bul. 1: 21. ♀.
- lechevallieri** Provancher. Que.
Phygadeuon Lechevallieri Provancher, 1882. Nat. Canad. 13 (no. 155): 334 (key); 13 (no. 156): 356. ♀.
- manitouensis** (Viereck). N. Y., Colo., Wash.
Hemiteles (Diaglyptaf) manitouensis Viereck, 1905. Kans. Acad. Sci., Trans. 19: 290. ♂.
- melanocerus** Viereck. Que., R. H., Conn., N. Y., Sask.
Phygadeuon (Plesignathus) melanocerus Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 336. ♂.
- mignaulti** Provancher. Que.
Phygadeuon Mignaulti Provancher, 1882. Nat. Canad. 13 (no. 155): 334 (key); 13 (no. 156): 355. ♀.
Phygadeuon mignaultii Dalla Torre, 1902. Cat. Hym., v. 3, p. 688. Emend.
- montivagus** (Ashmead). Colo.
Phaeogenes montivagus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 13: 394.
- nortoni** Viereck. Conn., N. Y. Townes (1970) seems to have suggested that this species may not belong in *Phygadeuon*.
Phygadeuon (Plesignathus) nortoni Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 336. ♂.
- Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 103.
- ovalis** Provancher. Que., N. Y.
Phygadeuon ovalis Provancher, 1875. Nat. Canad. 7: 180. ♂, ♀.
- parallelus** Provancher. Que. Townes (1944) incorrectly suppressed *parallelus* as a synonym of *P. canadensis* (Provancher).
Phygadeuon parallelus Provancher, 1882. Nat. Canad. 13 (no. 155): 335 (key); 13 (no. 156): 356. ♂.
- pisinnus** Walkley. Colo.
Ichneumon exiguus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 182. ♀. Preocc. in *Phygadeuon* by Gravenhorst, 1829.
Phygadeuon pisinnus Walkley, 1958. In Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2, Sup. 1, p. 45. N. name for *I. exiguus* Cresson.
- pumilus** (Cresson). N. H., R. I., N. Y., N. J., Del.
Cryptus pumilus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 301. ♀.
- Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 103.
- quadriceps** (Ashmead). Alaska; e. U. S. S. R.
Bachia nigra Ashmead, 1899 (1898). In Jordan, Fur Seals and Fur Seal Isls. No. Pacific, v. 4, p. 340. ♀. Preocc. in *Phygadeuon* by Provancher, 1874 and 1876. The association of the female holotype of *Bachia nigra* (described from Ostrov Bering [i.e. Bering Isl.], U. S. S. R.) with the male holotypes of the following synonyms (described from Alaska [Unga Isl. and St. Paul Isl.]) should be considered tentative.
Bathymetis unguae Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 180. ♂.

- Bathymetis quadriceps* Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 181. ♂.
Bathymetis simulator Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 184. ♂.
- Taxonomy: Cushman, 1922. U. S. Natl. Mus., Proc. 60 (21): 3. — Walkley, 1958. In Krombein et al., U. S. Dept. Agr., Agr. Monog. 2, Sup. 1, p. 45.
- quintilis** Viereck. Conn.
Phygadeuon (Plesignathus) quintilis Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 336. ♀.
- sanctipauli** (Ashmead). Alaska.
Stiboscopus sanctipauli Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 171. ♀.
Stiboscopus mandibularis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 172. ♂. N. syn.
 Preocc. in *Phygadeuon* by Cresson, 1864.
Bathymetis nigricornis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 177. ♂, ♀. N. syn.
Bathymetis imitator Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 177. ♂, ♀. N. syn.
Bathymetis simulans Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 178. ♀. N. syn.
Bathymetis rubrocincta Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 178. ♂, ♀. N. syn.
Bathymetis simillima Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 179. ♂, ♀. N. syn.
Bathymetis confusa Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 180. ♂, ♀. N. syn.
Plesignathus (!) *rubrocinctus* Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 184. ♂. Preocc. in *Phygadeuon* by Ashmead, 1902, p. 178.
- scabrosus** (Provancher). Que.
Hemiteles scabrosus Provancher, 1874. Nat. Canad. 6: 332. ♀.
- Taxonomy: Gahan and Rohwer, 1917. Canad. Ent. 49: 429. — Barron, 1975. Nat. Canad. 102: 560 (rejection of lectotype selected by Gahan and Rohwer, 1917).
- slossonae** Cushman. N. H.
Bathymetis slossonae Ashmead, 1906. In Slosson, Ent. News 17: 324. Nomen nudum.
Phygadeuon slossonae Cushman, 1922. U. S. Natl. Mus., Proc. 61 (8): 21. ♀.
- solidus** Lundbeck. Greenland.
Phygadeuon solidus Lundbeck, 1897 (1896). Dansk. Naturhist. For., Vidensk. Meddel. (for 1896), p. 225. ♀.
- Taxonomy: Roman, 1916. Arkiv for Zool. 10 (22): 2.
- subfuscus** Cresson. Que., Mass., N. Y., Ohio, Ill., Iowa.
Phygadeuon subfuscus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 311. ♀.
Platylabus crassicornis Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 37. ♀.
- timidus** Cresson. Tex.
Phygadeuon timidus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 161. ♂.
- townsendi** (Ashmead). Mich.
Hemiteles townsendi Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 405. ♂.
Hemiteles townsendii Dalla Torre, 1902. Cat. Hym., v. 3, p. 667. Emend.
- unicinctus** (Ashmead). Alaska.
Habromma nigrum Ashmead, 1902. Wash. Acad. Sci., Proc. 24: 188. ♂. Preocc. in *Phygadeuon* by Provancher, 1874 and 1876 and by *Bachia nigra* Ashmead, 1899.
Isochresta unicincta Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 190. ♂.
- Taxonomy: Cushman, 1922. U. S. Natl. Mus., Proc. 60 (21): 3.
- vernalis** (Brues). Mass.
Microcryptus (Theroscopus) vernalis Brues, 1910. Wis. Nat. Hist. Soc., Bul. 8: 77. ♀.
- victoriensis** Townes. B. C.
Centeterus canadensis Harrington, 1894. Canad. Ent. 26: 210. ♀. Preocc. in *Phygadeuon* by Provancher, 1875.
Phygadeuon victoriensis Townes, 1944. Amer. Ent. Soc., Mem. 11: 226. N. name for *C. canadensis* Harrington.
- zapotecus** Cresson. Pa., Tenn., S. C.; Mexico.
Phygadeuon zapotecus Cresson, 1873. Acad. Nat. Sci. Phila., Proc. 25: 140. ♂.

Genus CERATOPHYGADEUON Viereck

Ceratophygadeuon Viereck, 1924. *Canad. Ent.* 56: 110.

Type-species: *Ceratophygadeuon taeniatus* Viereck. Monotypic.

Remonzia Seyrig, 1952. *Acad. Malgache, Mem.* 39: 21.

Type-species: *Remonzia impostor* Seyrig. Monotypic.

Remonzia subg. *Euremonzia* Aubert, 1965. *Soc. Ent. Mulhouse, Bul.* 21: 17.

Type-species: *Remonzia (Euremonzia) parvicandator* Aubert. Monotypic and orig. desig.

Townes' (1970) description and key characters for this genus are partly inaccurate and misleading. In making his description and choosing the characters to use in his key to the genera of the Phygadeuontina, Townes appears to have neglected the type-species of *Ceratophygadeuon* and based his description and key mainly upon a group of species (which I will call the *perditus* group) whose members are at least in part parasitic upon the larvae of Stratiomyidae. However, even the males of the *perditus* group (and occasionally the females as well) often have two median apical teeth on the clypeus instead of the "single median tooth" described by Townes. Viereck described *Ceratophygadeuon* as having the "clypeus bituberculate at [the] apex," which roughly agrees with the two specimens of the type-species I have seen and with Townes' figure of that species (One of the specimens is like Townes figure in having what could be described as a single bifid clypeal tooth). In addition to its sharp facial tubercle (whence the name *Ceratophygadeuon*), the type-species has a rather unusual mandible which is short, very broad basally, narrowed very little from base to apex, and transversely concave on its outer surface; in the two examined specimens, both of the mandibular teeth have been worn down, but probably were almost equal in length. In species of the *perditus* group, the mandible is long, narrow, rather strongly tapered somewhat internal to the upper tooth, which seems to agree with what little Townes says concerning the mandible of *Ceratophygadeuon*. I do not know if either of the names *Remonzia* or *Euremonzia* would be applicable to members of the *perditus* group.

Taxonomy: Townes, 1970 (1969). *Amer. Ent. Inst., Mem.* 12: 94, 104, 399.

brevacus (Townes). Que., N. Y., Mich., Minn., Sask.

Platylabus aciculatus Provancher, 1886. *Addit. Corr. Faune Ent. Canada Hym.*, p. 36, 37.

♀. Formerly preocc. in *Phygadeuon* by Provancher, 1882. The variant spelling "*acilatus*" which appears on p. 37 of the "Additions" was rejected in favor of *aciculatus* by Provancher (1889) in the errata (p. 476) of the same work.

Phygadeuon brevacus Townes, 1944. *Amer. Ent. Soc., Mem.* 11: 220. N. name for *Platylabus aciculatus* Provancher.

perditus (Provancher). Que., Ont., N. Y., Sask.

Cryptus perditus Provancher, 1886. *Addit. Corr. Faune Ent. Canada Hym.*, p. 73. ♂.

provancheri (Walkley). Que.

Platylabus cincticornis Provancher, 1886. *Addit. Corr. Faune Ent. Canada Hym.*, p. 38. ♀. Formerly preocc. in *Phygadeuon* by Cresson, 1864.

Phygadeuon provancheri Walkley, 1958. In Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2, Sup. 1, p. 45. N. name for *Platylabus cincticornis* Provancher.

taeniatus Viereck. Que., Ont., Sask.; Sweden.

Ceratophygadeuon taeniatus Viereck, 1924. *Canad. Ent.* 56: 111. ♀.

Phygadeuon confrons Roman, 1925 (1924). *Arkiv for Zool.* 17 A (4): 10. ♀.

Taxonomy: Roman, 1938. *Ent. Tidskr.* 59: 35 (syn.).

SUBTRIBE STILPNINA

So far as is known members of this subtribe are parasites of cyclorrhaphous Diptera, ovipositing into late-instar larvae and emerging from puparia.

Genus STILPNUS Gravenhorst

Stilpnus Gravenhorst, 1829. *Ichn. Europaea*, v. 1, p. 664.

Type-species: *Stilpnus gagates* Gravenhorst. Desig. by Curtis, 1832.

Xestophyes Foerster, 1868. *Naturh. Ver. Rheinlande, Verh.* 25: 189.

Type-species: *Xestophya fallax* Foerster. Desig. by Ashmead, 1900 from two species included by Foerster, 1876.

Polyrhembia Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 189.

Type-species: *Hemiteles tenebriocosus* Gravenhorst. Included and desig. by Foerster, 1876.

Xestophya Foerster, 1876. Naturh. Ver. Rheinlande, Verh. 33: 27. Emend.

Townes (1970) said *Stilpnus* is a moderately large genus, known from the Holarctic and Neotropic regions.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 106.

gagates (Gravenhorst). Que. s. to N. C., w. to Alaska and Calif.; Honduras, Chile; Europe.

Host: *Fannia canicularis* (L.).

Ichneumon gagates Gravenhorst, 1807. Vergl. Uebers. Zool. Systeme, p. 263. [female].

Stilpnus americanus Cresson, 1868. Amer. Ent. Soc., Trans. 2: 95. ♂, ♀.

Megastylus politus Provancher, 1875. Nat. Canad. 7: 331. ♂.

Hemiteles orbicularis Provancher, 1879. Nat. Canad. 11 (no. 124): 123. "♂" = ♀.

Stilpnus anthomyidiperda Viereck, 1912. U. S. Natl. Mus., Proc. 42: 644. ♂, ♀.

Stilpnus gagates var. *Robinsoni* Roman, 1922. In Skottsberg, Nat. Hist. Juan Fernandez and Easter Isl., v. 3, p. 293. ♀.

Taxonomy: Townes and Townes, 1966. Amer. Ent. Inst., Mem. 8: 56 (syn.). — Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 106 (syn.).

Biology: Legner, 1966. Jour. Econ. Ent. 59: 999.

laevis Provancher. Que.

Stilpnus laevis Provancher, 1882. Nat. Canad. 13: 332. ♀.

Stilpnus levis Dalla Torre, 1902. Cat. Hym., v. 3, p. 738. Emend.

tenebriocosus (Gravenhorst). Greenland, Alaska; Europe.

Hemiteles tenebriocosus Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 785. ♂.

Ichneumon nitidulator Zetterstedt, 1838. Insecta Lapponica ... Hym., p. 362. "♂" = ♀.

Taxonomy: Roman, 1918. Arkiv for Zool. 12 (2): 30-31 (syn.).

Genus MESOLEPTUS Gravenhorst

Mesoleptus Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 3.

Type-species: *Ichneumon laevigatus* Gravenhorst. Desig. by Curtis, 1837.

Erolytus Holmgren, 1859 (1858). Svenska Vetensk.-Akad., Ofvers af ... Forhandl. 15: 328.

Type-species: *Ichneumon laevigatus* Gravenhorst. Monotypic and orig. desig.

Erolytus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 189. Preocc. by Holmgren, 1858.

Type-species: *Ichneumon laevigatus* Gravenhorst. Included and desig. by Foerster, 1876.

Gravenhorst's concept of *Mesoleptus* included elongate Ichneumonidae of diverse affinities. The species placed in *Mesoleptus* by Provancher and Cresson were of comparable diversity, but most European authors restricted the application of the name to a group of species now in the Ctenopelmatinae: Euryproctini.

borealis (Davis). "Hudson Bay Territory."

Erolytus borealis Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 355. "♂" = ♀.

davisii (Dalla Torre). Colo.

Erolytus petiolaris Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 355. ♂. Preocc. in

Mesoleptus by Thomson, 1884.

Erolytus davisii Dalla Torre, 1902. Cat. Hym., v. 3, p. 727. N. name for *E. petiolaris* Davis.

declivus (Provancher). Que., Ont., N. Y., Oreg. Host: *Sepedon fuscipennis* Loew, *Pherbiella schoenherri maculata* (Cr.).

Hemiteles declivus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 60. ♂, ♀.

Atractodes sepedontis Ashmead, 1901. In Needham and Betten, N. Y. State Mus. Bul. 47: 588. ♀.

Taxonomy: Barron, 1975. Nat. Canad. 102: 459 (lectotype selected).

glaucus (Davis). N. Y., Mich.

Erolytus glaucus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 354. ♂, ♀.

ignotus Cresson. N. Y., Ohio, W. Va.

Mesoleptus ignotus Cresson, 1868. Amer. Ent. Soc., Trans. 2: 103. ♀.

Erolytus melanoscelis DeGant, 1933. U. S. Natl. Mus., Proc. 83: 3. ♀.

ithacae (Ashmead). Que., Ont., Conn., N. Y., N. J.

Pyracmon incompletum Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 90. ♀. Preocc. in *Mesoleptus* by Provancher, 1875.

Erolytus ithacae Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 206. ♀.

Genus ATRACTODES Gravenhorst

Atractodes Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 739.

Type-species: *Atractodes bicolor* Gravenhorst. Desig. by Westwood, 1840.

Zetesima Foerster, 1876. Naturh. Ver. Rheinlande, Verh. 33: 27.

Type-species: *Zetesima rufipes* Foerster. Monotypic and orig. desig. The name of the type-species is preocc. in *Atractodes* by Provancher, 1874.

Asyncrita Foerster, 1876. Naturh. Ver. Rheinlande, Verh. 33: 29.

Type-species: *Atractodes foveolatus* Gravenhorst. Orig. desig.

aciculatus (Davis). N. H., N. Y.

Erolytus aciculatus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 354. ♂, ♀.

alamagnus (Davis). Colo.

Erolytus alamagnus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 355. ♂.

alaskensis (Ashmead). Alaska, Wash., Oreg.

Erolytus alaskensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 167. ♀.

Erolytus seldoviae Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 168. ♂.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 107 (syn.).

ambiguus Ruthe. Alaska; n. Eurasia. Ecology: Occurs in moist biotypes (see Petersen, 1956).

Atractodes ambiguus Ruthe, 1859. Stettin. Ent. Ztg. 20: 377. ♀.

Erolytus ungae Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 167. ♂, ♀.

Erolytus insularis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 168. ♀.

Atractodes truncator Roman, 1909. In Hamberg, Naturw. Untersuch. Sarekgebirges Schwedisch-Lappland, v. 4, p. 228. ♂, ♀.

Taxonomy: Roman, 1928. In Lindroth, Goteborgs K. Vetensk. Vitterhets-Samhalles Handl. (5B) 1 (4): 20 (syn.). —Townes, 1944. Amer. Ent. Soc., Mem. 11: 229 (syn.).

Biology: Petersen, 1956. In Fridhriksson and Tuxen, Zool. Iceland, v. 3, pt. 49-50, p. 70.

americanus (Ashmead). N. H., N. Y., N. C., S. C., Tenn., Kans. Ecology: Found in late fall at carrion.

Ischnus americanus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 394. ♀.

arcticus Holmgren. Greenland; n. Eurasia.

Atractodes arcticus Holmgren, 1872. Svenska Vetensk.-Akad., Ofvers af ... Forh. 29 (6): 99. ♂.

Taxonomy: Roman, 1916. Arkiv for Zool. 10 (22): 8. —Roman, 1934. Ann. and Mag. Nat. Hist. (10) 14: 607-608.

ashmeadi Cushman. N. H.

Asyncrita compressa Ashmead (!), 1897. In Slosson, Ent. News 8: 237. Lapsus for and misidentification of *Stilpnus compressus* Cresson (compare Ashmead, 1900 with Cushman, 1922).

Atractodes ashmeadi Cushman, 1922. U. S. Natl. Mus., Proc. 61 (8): 6. ♀.

Taxonomy: Ashmead, 1900. In Smith, N. J. State Bd. Agr., Ann. Rpt. 27, sup., p. 568.

aterrimus Holmgren. Greenland.

Atractodes aterrimus Holmgren, 1872. Svenska Vetensk.-Akad., Ofvers af ... Forh. 29 (6): 98. ♂.

Taxonomy: Roman, 1916. Arkiv for Zool. 10 (22): 9. —Roman, 1934. Ann. and Mag. Nat. Hist. (10) 14: 607 (description of female).

- brevissimus** (Dalla Torre). N. H., R. I., N. Y., Mich., Wash.
Erolytus brevis Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 355. ♀. Preocc. by Foerster, 1876.
Erolytus brevissimus Dalla Torre, 1902. Cat. Hym., v. 3, p. 727. N. name for *E. brevis* Davis.
Atractodes serpedontes (!) Ashmead, 1902. In Slosson, Ent. News 13: 6. Lapsus for and misidentification of *Atractodes sepedontis* Ashmead, a synonym of *Mesoleptus declivus* (Cresson).
Atractodes serpedontus Cushman, 1922. U. S. Natl. Mus., Proc. 61 (8): 7.
 Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 107 (syn.).
- compressus** (Cresson). Colo.
Stilpnus? compressus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 260. ♂.
- cultus** (Davis). Colo.
Erolytus cultus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 355. ♀.
- fatuus** Townes. N. Mex.
Phygadeuon polita Viereck, 1903. In Skinner, Amer. Ent. Soc., Trans. 29: 82. ♂. Preocc. in *Atractodes* by Provancher, 1874 and Ashmead, 1890.
Atractodes fatuus Townes, 1944. Amer. Ent. Soc., Mem. 11: 231. N. name for *P. polita* Viereck.
- gillettei** (Ashmead). Colo.
Seleucus gillettei Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 206. ♂.
- grandis** Cushman. N. H.
Erolytus grandis Ashmead, 1900. In Slosson, Ent. News 11: 320. Nomen nudum.
Atractodes grandis Cushman, 1922. U. S. Natl. Mus., Proc. 61 (8): 7. ♀.
- kincaidi** (Ashmead). Alaska.
Erolytus perplexus Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 165. ♂.
Erolytus sanctipauli Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 166. ♀.
Erolytus kincaidi Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 167. ♀.
 Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 107 (syn.).
- laphroscopoides** (Viereck). Ariz.
Hemiteles (Diaglypta?) laphroscopoides Viereck, 1905. Kans. Acad. Sci., Trans. 19: 294. ♂.
- necrix** Mason. S. C. Ecology: Occurs on carrion.
Atractodes necrix Mason, 1971. In Payne and Mason, Ent. Soc. Wash., Proc. 73: 139. ♀.
- nigricoxus** Provancher. Que., Mass.
Atractodes nigricoxus Provancher, 1882. Nat. Canad. 13: 368. ♂.
Atractodes nigricoxatus Dalla Torre, 1902. Cat. Hym., v. 3, p. 722. Unnecessary n. name for *nigricoxus* Provancher; not preocc. by *nigricoxis* Foerster, 1876.
- pacificus** Townes. B. C.
Angitia Americana Harrington, 1894. Canad. Ent. 26: 246. ♀. Preocc. in *Atractodes* by Ashmead, 1890.
Atractodes pacificus Townes, 1944. Amer. Ent. Soc., Mem. 11: 232. N. name for *Angitia americana* Harrington.
- politus** (Provancher). Que.
Campoplex politus Provancher, 1874. Nat. Canad. 6: 144. ♀. Preocc. by Foerster, 1868. Not renamed because of uncertain synonymy.
- popofensis** (Ashmead). Alaska; e. U. S. S. R.
Erolytus niger Ashmead, 1899 (1898). In Jordan, Fur Seals and Fur Seal Isls. No. Pacific, v. 4, p. 338. ♀. Preocc. in *Atractodes* by Brulle, 1846.
Erolytus popofensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 166. ♂, ♀.
Atractodes ebeninus Walkley, 1958. In Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2, sup. 1, p. 45. N. name for *E. niger* Ashmead; this n. name was unnecessary because it was proposed when *popofensis* was already standing as a junior synonym of *E. niger*.
- rufiventris** (Ashmead). Mich., S. Dak.
Seleucus rufiventris Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 207. ♀.
Erolytus dakotaensis Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 354. ♂.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 107 (syn.).
ungensis (Ashmead). Sask., Alaska.

Erolytus ungensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 169. ♀.
Erolytus rubrocinctus Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 169. ♂.

SUBTRIBE CREMNODINA

Genus CREMNODES Foerster

Cretnodes Foerster, 1850. Arch. f. Naturgesch. 16 (1): 72.

Type-species: *Ichneumon atricapillus* Gravenhorst. Orig. desig.

Caenomeris Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 174.

Type-species: *Xestophya nigripes* Ashmead. Monotypically included and desig. by Townes, 1944.

Stygera Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 176.

Type-species: *Stygera rufipes* Perkins. Monotypically included and desig. by Perkins, 1962.

Cremnias Roman, 1939. Ent. Tidskr. 60: 186. Unnecessary n. name for *Cretnodes* Foerster, which is not preocc. by Gerst, 1858. Roman thought *Cretnodes* was described by Foerster in 1868.

Taxonomy: Perkins, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 11: 397-398, 411, 415, 454.

nigripes (Ashmead). Alaska.

Xestophya polita Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 162. ♂, ♀.

Xestophya nigripes Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 163. ♂.

UNPLACED TAXA OF HEMITELINI

Hemiteles nigricans Provancher, 1882. Nat. Canad. 13: 360. ♂. Que.

Taxonomy: Barron, 1975. Nat. Canad. 102: 514.

TRIBE APTESINI

In transferring the genus *Echthrus* to the group he formerly called the Hemigastrini, Townes (1970) changed the name of the group to Echthrini because of his preference to base supergeneric group names upon the oldest included genus rather than upon the oldest supergeneric name; following the latter practice would have resulted in his retention of the name Hemigastrini. Because of my belief that *Hemigaster* actually belongs in the group Townes (1970) called the subtribe Baryceratina (tribe Cryptini), the name Hemigastrina is here applied to that subtribe.

Most Aptesini oviposit into the cocoons of sawflies, but the species of *Echthrus* and *Demopheles* parasitize wood boring Coleoptera, and *Polytribax* parasitizes Lepidoptera.

Revision: Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 1-305.

Taxonomy: Townes, 1970(1969). Amer. Ent. Inst., Mem. 12: 111-140 (genera of world).

Genus DEMOPHELES Foerster

Demopheles Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 186.

Type-species: *Phygadeuon caliginosus* in the sense of Thomson (1873). By subsequent monotypy from inclusion by Ashmead, 1900. Ashmead (1900) suppressed the monotypic genus *Mecocryptus* as a synonym of *Demopheles*, thereby including the type-species of *Mecocryptus* (which see) in *Demopheles* (cf. Perkins, 1962).

Mecocryptus Thomson, 1873. Opusc. Ent. 5: 520, 521.

Type-species: *Phygadeuon caliginosus* Gravenhorst, not as restricted by Taschenberg and Frilli. Monotypic and orig. desig. Thomson did not say that he was applying the name *caliginosus* to Gravenhorst's female, but this is implied by the fact that on the same two pages he described a new genus and species, *Stenocryptus nigriventris*, for what he believed to be *Phygadeuon caliginosus*.

"Taschenberg;" Taschenberg applied the name *caliginosus* to Gravenhorst's male and validated the name *Phygadeuon corruptor* for Gravenhorst's female. Frilli (1975) selected Gravenhorst's male as the lectotype of *caliginosus*, leaving *corruptor* as the valid name for *P. caliginosus* in the sense of Thomson.

A single species of Holarctic distribution is known; it was revised by Townes (1963) to include four subspecies, the European *D. corruptor corruptor*, the Japanese *D. corruptor atripes* Townes, and two Nearctic ones.

Revision: Townes, 1963. Ent. Soc. Wash., Proc. 65: 47-50.

Taxonomy: Gravenhorst, 1829. Ichn. Europaea, v. 2, pp. 645-646. —Taschenberg, 1865. Ztsch. f. die Gesam. Naturw. Halle 25: 22, 49. —Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 177, 214. —Perkins, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 11: 416. —Frilli, 1975 (1974). Soc. Ent. Ital., Mem. 53: 127-129.

corruptor matorus (Provancher). Que. s. to Ga., w. to w. Ont. and possibly Alta. Host: *Clytus ruricola* (Oliv.). The Alta. record is based upon a male from Edmonton, and the distinction between the Nearctic subspecies is so far based only upon females. *Phygadeuon matorus* Provancher, 1879. Nat. Canad. 11: 68. ♀.

corruptor rufatus Townes. Colo., N. Mex., Wash.

Demopheles corruptor rufatus Townes, 1963. Ent. Soc. Wash., Proc. 65: 49. ♀.

Genus JAVRA Cameron

Cnemocryptus Cameron, 1903. Manchester Lit. and Phil. Soc., Mem. and Proc. 47 (14): 38.

Type-species: *Cnemocryptus validicornis* Cameron. Monotypic. The type-species is regarded as a synonym of *J. parviceps* Cameron.

Javra Cameron, 1903. Manchester Lit. and Phil. Soc., Mem. and Proc. 47 (14): 47.

Type-species: *Javra parviceps* Cameron. Monotypic.

Finchra Cameron, 1907. Ztschr. System. Hym. Dipt. 7: 463.

Type-species: *Finchra gracilis* Cameron. Monotypic.

Monocryptus Hellen, 1956. Notulae Ent. 36: 135.

Type-species: *Cratocryptus opacus* Thomson. Monotypic.

This genus is Holarctic and Oriental, with most of the species occurring in Asia.

glaesaria Townes. R. I., N. Y., Ont.

Javra glaesaria Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 13. ♀.

rugata Townes. Va., Ohio.

Javra rugata Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 12. ♀.

Genus PARMORTHA Townes

Parmortha Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 14.

Type-species: *Parmortha pleuralis atripes* Townes. Orig. desig. *P. pleuralis atripes* is regarded as a synonym of *P. pleuralis albonaculata* (Ashmead).

This is a small genus of Holarctic distribution. The hosts are allantine sawflies which pupate in the stems of weeds and shrubs.

circumcincta circumcincta (Provancher). Que. w. to e. B. C., s. to n. S. C. and Colo.

Cryptus circumcinctus Provancher, 1879. Nat. Canad. 11 (no. 125): 132. ♂.

circumcincta flavipes (Harrington). Alta. s. to Colo., w. to B. C. and Calif. Host: *Ametastegia glabrata* (Fall.).

Cryptus flavipes Harrington, 1894. In Townes and Gupta, Amer. Ent. Inst., Mem. 26: 212. ♀.

parvula (Gravenhorst). N. S. and n. Ont. w. to Alaska, s. to N. J. and Oreg; Eurasia. Host:

Ametastegia glabrata (Fall.).

Cryptus parvulus Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 459. ♀ (♂ misdet.).

Cryptus erythropus Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 469. ♂.

Cryptus velor Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., ed. 2, p. 584. Nomen nudum.

Cryptus velor Cresson, 1864. Ent. Soc. Phila., Proc. 3: 293. ♀.

Cryptus osculatus Provancher, 1874. Nat. Canad. 6: 178. ♂.

Isotina(!) tibialis Ashmead, 1897. In Slosson, Ent. News 8: 237. Nomen nudum.

pleuralis arctica Townes. Northern Que., N. W. T., Alaska. *P. pleuralis pleuralis* (Thomson) occurs in Europe, and *P. pleuralis albomaculata* (Ashmead) occurs in Japan.

Parmortha pleuralis arctica Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 19. ♂, ♀.

pleuralis signata (Provancher). Southern Que. w. to s. Alaska, s. to N. C. and Wash. Host: *Ametastegia glabrata* (Fall).

Cryptus quebecensis Provancher, 1874. Nat. Canad. 6: 179. ♀.

Cryptus signatus Provancher, 1874. Nat. Canad. 6: 179. ♀.

Parmortha pleuralis alpina Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 22. ♀. N. syn.

Taxonomy: Barron, 1975. Nat. Canad. 102: 540, 566-567 (discussion of Provancher types).

Genus CRATOCRYPTUS Thomson

Cratocryptus Thomson, 1873. Opusc. Ent. 5: 521.

Type-species: *Cryptus furcator* Gravenhorst. Desig. by Viereck, 1914.

This genus includes only two species which Townes (1970) said "might better be treated as subspecies."

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 128.

petilus Townes. Que., Ont., Mich., B. C. Host: *Cephalcia* sp.

Cratocryptus petilus Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 26. ♂, ♀.

Genus CUBOCEPHALUS Ratzeburg

Cubocephalus Ratzeburg, 1848. Ichn. d. Forstins., v. 2, p. 121.

Type-species: *Cryptus fortipes* Gravenhorst. Monotypic. The type-species is regarded as a synonym of *Cubocephalus distinctor* (Thunberg).

Ecportheta Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 184.

Type-species: *Cryptus fortipes* Gravenhorst. Monotypically included and desig. by Ashmead, 1900.

Pammachus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 184.

Type-species: *Stenocryptus nigriventris* Thomson. By subsequent monotypy from inclusion by Ashmead, 1900. Ashmead (1900) suppressed the monotypic genus *Stenocryptus* as a synonym of *Pammachus*, thereby including *S. nigriventris* (cf. Perkins, 1962).

Chaeretymma Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 187.

Type-species: *Cryptus anatorius* Gravenhorst. Monotypically included and desig. by Schmiedeknecht, 1890.

Stenocryptus Thomson, 1873. Opusc. Ent. 5: 520, 521.

Type-species: *Stenocryptus nigriventis* Thomson. Monotypic and orig. desig.

Microcryptus Thomson, 1873. Opusc. Ent. 5: 520, 521.

Type-species: *Cryptus erythrinus* Gravenhorst. Monotypic.

Planocryptus Heinrich, 1949. Muenchner Ent. Gesell., Mitt. 35-39: 56.

Type-species: *Planocryptus mirabilis* Heinrich. Orig. desig.

This is a large Holarctic genus. The few available rearing records indicate that the species parasitize sawflies which pupate in plant tissue, under bark, etc.

Taxonomy: Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 31, 186, 218. —Perkins, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 11: 442.

alacris (Cresson). Newfoundland (Labrador) s. to n.w. S. C., w. to Alaska and Calif. Host:

Ametastegia glabrata (Fallen). In the tribal revision of Townes and Gupta (1962),

Townes recognized four subspecies, three of which were sympatric.

Cryptus alacris Cresson, 1864. Ent. Soc. Phila., Proc. 3: 306. ♀.

Leptobatus Canadensis Provancher, 1875. Nat. Canad. 7 (5): 145. ♀. N. syn.

- Mesostenus nigricornis* Provancher, 1875. Nat. Canad. 7 (9): 264. ♂. Temporarily preocc. in *Cryptus* by Brulle, 1846.
- Cryptus eburniefrons* Provancher, 1879. Nat. Canad. 11 (no. 125): 133. ♂.
- Cryptus mellipes* Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 68. ♀.
- Cryptus erythropygus* Provancher, 1886. Addit. Corr. Faune Ent. Canada, Hym., p. 69. ♀. N. syn.
- Phygadeuon ater* Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 20. ♀. N. syn.
- Cryptus Lavogleri* Dalla Torre, 1902. Cat. Hym., v. 3, p. 576. N. name for *M. nigricornis* Provancher.
- Chaeretymma minuta* Cushman, 1917. U. S. Natl. Mus., Proc. 53: 465. ♂, ♀. N. syn.
- Taxonomy: Barron, 1975. Nat. Canad. 102: 441, 453-454, 464, 467, 508, 528-529 (discussion of Provancher types).
- annectus** Townes. N. S. w. to n. Alaska, s. to N. H., N. Mex., and Calif.
- Phaeogenes nigricornis* Provancher, 1882. Nat. Canad. 13: 330. ♂. Preocc. in *Cubocephalus* by *Mesostenus nigricornis* Provancher, 1875.
- Cryptus spissicornis* Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 361. ♀. Preocc. by Provancher, 1886.
- Cubocephalus annectus* Townes, 1944. Amer. Ent. Soc., Mem. 11: 234. N. name for *Cryptus spissicornis* Provancher.
- Cubocephalus atricornis* Townes, 1944. Amer. Ent. Soc., Mem. 11: 235. N. name for *P. nigricornis* Provancher, 1888.
- annulatus** (Cresson). Que. w. to Alta., s. to w. N. C. Ecology: Two specimens emerged from the canes of raspberries which were infested by *Agrilus aurichalcus* Redt.
- Phygadeuon annulatus* Cresson, 1864. Ent. Soc. Phila., Proc. 3: 308. ♀.
- Cryptus ruficornis* Provancher, 1875. Nat. Canad. 7 (6): 176. ♂.
- aquilonius** Townes and Gupta. Newfoundland (Labrador) w. to n. B. C., Yukon, and Alaska; also Colo.
- Cubocephalus aquilonius* Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 53. ♂, ♀.
- ardens** Townes. N. H., Ont., Mich., Wis., Colo., Alaska.
- Cubocephalus ardens* Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 109. ♂, ♀.
- armillatus** Walkley. Que.
- Cryptus collaris* Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 71. Preocc. by Rudow, 1883.
- Cubocephalus armillatus* Walkley, 1958. In Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2, Sup. 1, p. 45. N. name for *Cryptus collaris* Provancher.
- ashmeadii** (Harrington). Mont., Ariz., B. C., Wash., Oreg., Calif. Host: *Ametastegia glabrata* (Fall.), *Trypoxylon* sp.
- Chaeretymma ashmeadii* Harrington, 1894. Canad. Ent. 26: 212. ♀.
- atriclunis** Townes and Gupta. Maine w. to B. C., s. to N. J. and s. Mich.
- Cubocephalus atriclunis* Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 56. ♂, ♀.
- baldaufii** (Dalla Torre). Que. w. to Sask., s. to N. Y., Ind., and Minn.
- Cryptus scutellatus* Provancher, 1877. Nat. Canad. 9: 12. ♂. Preocc. by Smith, 1858.
- Cryptus baldaufii* Dalla Torre, 1902. Cat. Hym., v. 3, p. 563. N. name for *Cryptus scutellatus* Provancher.
- brevicornis** (Taschenberg). Northern Que., n. Mich., Colo., n. Yukon, Alaska; Europe.
- Phygadeuon brevicornis* Taschenberg, 1865. Ztschr. f. die Gesam. Naturw. Halle 25: 48. ♀.
- caligneus** Townes. N. C.
- Cubocephalus caligneus* Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 109. ♀.
- callicerus** Townes. N. S., Que., N. Y., Ont., Mich., Ohio.
- Cubocephalus callicerus* Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 115. ♂, ♀.
- carnosus** Townes. Que., N. H., Mich., Ohio.
- Cubocephalus carnosus* Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 114. ♂, ♀.

- cincticornis** (Cresson). Que. s. to Pa., w. to Mich. and Ill.
Phygadeuon cincticornis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 309. ♀.
- contractus** Townes and Gupta. Newfoundland (Labrador) w. to n. Yukon and Alaska, s. to N. Y., Mich., Colo., and Wash.
Cubocephalus contractus Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 46. ♂, ♀.
- denticulatus denticulatus** Townes. Que., Maine, Vt., N. Y., Mich.
Cubocephalus denticulatus denticulatus Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 43. ♂, ♀.
- denticulatus obscuripes** Townes. Alaska.
Cubocephalus denticulatus obscuripes Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 42. ♀.
- dreisbachi** Townes. Que. s. to Conn., w. to Alta. and Kans. Townes (1962) said this species "is very close to *C. ashmeadii* and may prove to be an eastern subspecies of it."
Cubocephalus dreisbachi Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 94. ♂, ♀.
- euryops** Townes. Vt., Ont., Mich., Minn.
Cubocephalus euryops Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 64. ♂, ♀.
- flavipes** Townes. N. Y., Mich.
Cubocephalus flavipes Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 72. ♂, ♀.
- hebes** Townes. Sask., Mont.
Cubocephalus hebes Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 66. ♂, ♀.
- hirtipes hirtipes** Townes. Alta. s. to N. Mex., w. to Wash. and Calif.
Cubocephalus hirtipes hirtipes Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 122. ♂, ♀.
- hirtipes trachodes** Townes. N. H. Ecology: Occurs above timberline on Mt. Washington.
Cubocephalus hirtipes trachodes Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 122. ♂, ♀.
- impressus** (Provancher). Que. s. to n. Ga., w. to Minn. and Colo.
Ischnus impressus Provancher, 1875. Nat. Canad. 7: 112. ♂.
- incisus atriventris** Townes and Gupta. Ariz.
Cubocephalus incisus atriventris Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 44. ♀.
- incisus incisus** Townes and Gupta. N. Y., Mich.
Cubocephalus incisus incisus Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 45. ♂, ♀.
- incognitus** (Provancher). Que., Vt., Mass., N. Y., Ont., Mich., Wyo.
Cryptus incognitus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 70. ♂.
- inhabilis** (Provancher). Que. w. to Alta. and Wash., s. to e. Tenn., Colo., and Calif.
Phygadeuon inhabilis Provancher, 1877. Nat. Canad. 9: 11. ♀.
Cubocephalus inhabilis umbonater Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 87. ♂, ♀. N. syn.
- laticeps** (Cresson). N. B. s. to S. C., w. to Minn., S. Dak., Tex., and Calif.
Cryptus laticeps Cresson, 1872. Amer. Ent. Soc., Trans. 4: 157. ♂.
- lissopleuris** Townes and Gupta. Maine, N. Y., Pa., s. w. N. C.
Cubocephalus lissopleuris Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 59. ♂.
- longicaudus** (Provancher). Que. s. to Ga., w. to Minn.
Cryptus longicaudus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 68. ♀.
Cryptus schmuckii Dalla Torre, 1902. Cat. Hym., v. 3, p. 588. Unnecessary n. name for *Cryptus longicaudus* Provancher; the latter not preocc. by *Cryptus longicaudus* Brulle.
- maurus** (Cresson). Que., Ont., Mich., N. W. T., Alta., B. C., Calif.
Echthrus? maurus Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 381. ♀.

miarus Townes and Gupta. Maine, N. H., N. Y., n.w. S. C., Mich., Wis.

Cubocephalus miarus Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 54. ♂, ♀.

micans Townes. P. E. I. s. to N. Y., w. to Minn.

Cubocephalus micans Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 112. ♂, ♀.

molaris Townes and Gupta. Que., N. Y., Ont., Minn., Wyo., Colo., N. Mex., Yukon, B. C., Oreg., Calif.

Cubocephalus molaris leechi Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 50. ♂. N. syn.

Cubocephalus molaris molaris Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 50. ♂, ♀.

Cubocephalus molaris cervinus Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 51. ♂, ♀. N. syn.

nigriventris (Thomson). Que. w. to B. C., s. to s.w. N. C., Mich., Colo., and Oreg.; Eurasia. In describing *nigriventris* Thomson stated that it is the species for which Taschenberg (1865) had used the name *Phygadeuon caliginosus* Gravenhorst (1829). Apparently Thomson was mistaken because Taschenberg applied the name *caliginosus* to Gravenhorst's male, and a male which was selected as lectotype of *caliginosus* by Frilli (1975) was identified by Frilli as a species of *Phygadeuon*.

Stenocryptus nigriventris Thomson, 1874. Opusc. Ent. 6: 604. ♂, ♀.

Taxonomy: Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 645-646. —Taschenberg, 1865. Ztschr. f. die Gesam. Naturw. Halle 25: 22, 49. —Frilli, 1975 (1974). Soc. Ent. Ital., Mem. 53: 127-129.

nitidus nitidus (Provancher). N. S. w. to Alta., s. to Pa. and Mich.

Mesostenus nitidus Provancher, 1874. Nat. Canad. 6: 301. ♂.

Cryptus occidentalis Provancher, 1875. Nat. Canad. 7: 314. ♀.

Phygadeuon nitidulus Provancher, 1879. Nat. Canad. 11: 70. Unnecessarily proposed n. name for *M. nitidus*; although *nitidus* was preocc. in *Phygadeuon* by Gravenhorst, 1829, Provancher could have used the name *ruficoxus* for the species because he suppressed *Mesostenus ruficoxus* (as "*ruficornis* [!]") Provancher and *Cryptus ruficoxus* Provancher as synonyms of *nitidulus*.

Cryptus ignotus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 73. ♂.

Cryptus mellicoxus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 75. ♂.

nitidus totus Townes. Western Wyo., Alaska, B. C., Wash., Oreg., n. Calif.

Cubocephalus nitidus totus Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 79. ♂, ♀.

pallidus (Cresson). Que. w. to B. C., s. to n.w. S. C., Ark., and Kans. In the tribal revision of Townes and Gupta (1962), Townes recognized two subspecies which were largely sympatric.

Mesoleptus vultus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 268. ♂.

Cryptus pallidus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 307 ♀.

Cryptus spissicornis Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 68. ♂, ♀. N. syn.

pentagonalis (Provancher). Ont. According to Barron (1975) *pentagonalis* was incorrectly suppressed as a synonym of *Cubocephalus alacris canadensis* (Provancher) (= *alacris* Cresson) by Townes (1962), the latter author apparently having erroneously disregarded the lectotype selected by Gahan and Rohwer (1917).

Cryptus pentagonalis Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 66. ♂, ♀.

Taxonomy: Gahan and Rohwer, 1917. Canad. Ent. 49: 394. —Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 89-91. —Barron, 1975. Nat. Canad. 102: 528-529.

personatus Townes. Wash., Oreg., Calif.

Cubocephalus personatus Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 105. ♂, ♀.

- pictus** Townes. Mich., ?n.w. S. C. Townes said that "the correlation of the males [from Mich.] and the female [from S. C.] of this species involves much conjecture, and may not be correct."
Cubocephalus pictus Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 111. ♂, ♀.
- prolixus phaeolepis** Townes and Gupta. B. C., Oreg., Calif.
Cubocephalus prolixus phaeolepis Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 48. ♂, ♀.
- prolixus prolixus** Townes and Gupta. Que. s. to N. Y., w. to Man. and S. Dak.
Cubocephalus prolixus prolixus Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 49. ♂, ♀.
- rectus** (Provancher). Que. s. to N. Y., w. to Minn.
Cryptus rectus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 75. ♂.
- rufibasis** Townes and Gupta. Mich.
Cubocephalus rufibasis Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 63. ♀.
- scorteus** Townes. Northern Que., Yukon.
Cubocephalus scorteus Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 70. ♂, ♀.
- semifulvus** Townes. Alaska, Wash.
Cubocephalus semifulvus Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 71. ♂, ♀.
- semirufus** (Brulle). Mass. s. to N. C., w. to Mich. Ecology: One male specimen was reared in association with *Macremphytus* sp.
Cryptus semi-rufus Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 195. ♀.
Mesoleptus eximius Cresson, 1868. Amer. Ent. Soc., Trans. 2: 100. ♂.
- sternolophus** Townes. N. Y., Pa., Ohio, Mich., N. Mex., Alaska, Calif.
Cubocephalus sternolophus Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 74. ♂, ♀.
- subpolitus** Townes. Que., Conn., N. Y., Minn.
Cubocephalus subpolitus Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 120. ♂, ♀.
- tincticoxis** Townes. Colo., B. C., Oreg., Calif.
Cubocephalus tincticoxis Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 55. ♂.

Genus ORESBIUS Marshall

Oresbius Marshall, 1867. Ent. Monthly Mag. 3: 193.

Type-species: *Oresbius castaneus* Marshall. Monotypic.

Opidnus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 185.

Type-species: *Aptesis* (*Pezoporus*) *tsugae* Cushman. Included and desig. by Townes and Townes, 1951.

Townes (1970) said that this large Holarctic genus has the most northerly distribution of any aptesine genus. He said that about half of the arctic species have brachypterous females, which contributes to their scarcity in collections.

Taxonomy: Townes, Momoi, and Townes, 1965. Amer. Ent. Inst. Mem. 5: 157 (syn.).

—Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 131.

albicoxus (Provancher). Que., N. W. T., and Alaska, s. to Md., Mich., Ariz., and Calif. Host: *Pristiphora erichsonii* (Htg.). In the tribal revision of Townes and Gupta (1962), Townes recognized two subspecies which were largely sympatric.

Cryptus brevicornis Provancher, 1875. Nat. Canad. 7 (6): 176. ♂. Preocc. by Gravenhorst, 1829.

Mesostenus albicoxus Provancher, 1875. 7 (6): 266. ♂.

Cryptus ferrugineus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 412. ♀. Preocc. by Smith, 1861 and 1879. N. syn.

- Cryptus Schoberi* Dalla Torre, 1902. Cat. Hym., v. 3, p. 588. N. name for *C. ferrugineus* Ashmead. N. syn.
- Cryptus koebele* Rohwer, 1917. U. S. Natl. Mus., Proc. 53: 158. Unnecessarily proposed n. name for *C. ferrugineus* Ashmead. N. syn.
- Taxonomy: Barron, 1975. Nat. Canad. 102: 419-420, 436 (n. comb. and lectotype selection).
- Alexanderi** (Townes), n. comb. Que., Vt., Alta.
Opidnus alexanderi Townes, 1962. In Townes and Gupta, Amer. Ent. inst., Mem. 2: 145. ♂, ♀.
- aniptus** (Townes), n. comb. Colo., Alaska, Calif.
Opidnus aniptus Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 151. ♂, ♀.
- arridens** (Gravenhorst), N. H., Mass., N. Y., Ont., Mich., B. C.; Eurasia. Adventive? The species is not known to have been collected in North America before 1946.
Phygadeuon arridens Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 654. ♂.
- ciliatus** (Townes), n. comb. Que.
Opidnus ciliatus Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 164. ♀.
- cognatus** (Townes), n. comb. Northern que. s. to N. Y., w. to B. C. and Calif.
Opidnus cognatus Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 148. ♂, ♀.
- dorsator** (Ashmead), n. comb. Alaska.
Centeterus dorsator Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 161.
- fulvibasis** (Townes), n. comb. Que. s. to s.e. N. C., w. to Minn.
Opidnus fulvibasis Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 144. ♂, ♀.
- lindrothi** (Townes), n. comb. Alaska.
Opidnus lindrothi Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 158. ♀.
- major** (Townes), n. comb. Northern Que., N. H. Ecology: In N. H. this species occurs above timberline on Mt. Washington.
Opidnus major Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 156. ♂.
- mucronatus** (Townes), n. comb. Maine, Mass., N. Y., Mich.
Opidnus mucronatus Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 150. ♂, ♀.
- nivarius** (Brues), n. comb. Alaska.
Aptesis nivarius Brues, 1919. Rpt. Canad. Arctic Exped. 1913-18, v. 3G, p. 21. ♀.
- orbitus** (Townes), n. comb. N. H., n. Yukon. Ecology: In N. H. this species occurs above timberline on Mt. Washington.
Opidnus orbitus Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 157. ♂.
- oresbius** (Townes), n. comb. B. C., Wash.
Opidnus oresbius Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 136. ♂.
- parallelus** (Townes), n. comb. Que., N. H., N. Y., Man., Colo.
Opidnus parallelus Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 165. ♂, ♀.
- quadriceps** (Townes), n. comb. Northwestern N. W. T., Alaska.
Opidnus quadriceps Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 168. ♂, ♀.
- rufinotum** (Townes), n. comb. Northern Alaska. Townes (1962) said that *rufinotum* "may prove to be a subspecies of *O. tumulus*."
Opidnus rufinotum Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 161. ♂.
- shumaginensis** Carlson, n. name. Alaska.
Stiboscopus ferrugineus Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 173. ♀. Preocc. in *Oresbius* by *Cryptus ferrugineus* Ashmead, 1890; in the tribal revision of Townes and Gupta (1962), Townes did not rename *Stiboscopus ferrugineus* because *Cryptus ferrugineus* Ashmead is an unavailable primary homonym which could not interfere with the use of the name *Stiboscopus ferrugineus*; *S. ferrugineus* is renamed here

because if it were to have had a junior synonym one would not be at liberty to use the name *S. ferrugineus* until such time as it was placed in a different genus than *C. ferrugineus* Ashmead.

sublaevis (Townes), n. comb. Wyo., Colo., Wash. Ecology: Occurs on mountains near timberline. *Opidnus sublaevis sublaevis* Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 134. ♂, ♀.

Opidnus sublaevis milltomers Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 135. ♂. N. syn.

taeniatus (Townes), n. comb. Northern Que., N. H., N. W. T., n. Yukon. Ecology: In N. H. this species occurs above timberline on Mt. Washington.

Phygadeuon alticola Ashmead, 1897 In Slosson, Ent. News 8: 237. Nomen nudum.

Opidnus taeniatus Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 154. ♂, ♀.

tegaris (Provancher). N. S. s. to Pa., w. to Wyo. and Colo. Host: *Pristiphora erichsonii* (Htg.).

Phygadeuon tegaris Provancher, 1874. Nat. Canad. 6: 282. ♀.

Ichneumon decoratus Provancher, 1875. Nat. Canad. 7 (1): 25 (key); 7 (3): 83. ♂.

Ischnus placidus Provancher, 1875. Nat. Canad. 7 (4): 110. ♂.

Phygadeuon orbitalis Provancher, 1882. Nat. Canad. 13 (no. 155): 335 (key); 13 (no. 156): 354. ♂.

Phygadeuon nigriceps Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 52. ♀.

Phygadeuon (Scinascopus?) orbitaliformis Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 336. ♂.

Taxonomy: Barron, 1975. Nat. Canad. 102: 459, 514, 522, 532, 573 (Provancher types revised).

teres (Townes), n. comb. Northern Yukon, Alaska.

Opidnus teres Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 167. ♂, ♀.

tibialis (Townes), n. comb. Northern Que., n.e. N. W. T., n. Yukon, Alaska.

Opidnus tibialis Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 163. ♂, ♀.

trifasciatus (Ashmead), n. comb. Northern Que., N. W. T., n. Yukon, Alaska.

Microcryptus trifasciatus Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 184. ♂.

tsugae (Cushman). Newfoundland (Labrador) w. to s. Alaska, s. to N. C., Colo., Ariz. and Calif.

Host: *Neodiprion tsugae* Midd. The characters used by Townes (1962) for subspecific differentiation are neither strong nor entirely in agreement with the material he studied.

Aptesia (Pezoporius) tsugae Cushman, 1939. Wash. Acad. Sci., Jour. 29: 394. ♂, ♀.

Opidnus tsugae ruficora Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 138. ♂, ♀. N. syn.

Opidnus tsugae interior Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 139. ♂, ♀. N. syn.

Opidnus tsugae inflatus Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 140. ♀. N. syn.

Biology: Furniss and Dowden, 1941. Jour. Econ. Ent. 34: 49, 51.

tumulus (Townes), n. comb. N. W. T., Yukon, Alaska.

Opidnus tumulus Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 160. male, female.

vockerothi (Townes), n. comb. Northern Que.

Opidnus vockerothi Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 166. ♂, ♀.

vultuosus (Townes), n. comb. Newfoundland (Labrador), Que., n. Mich., N. W. T., Alaska.

Opidnus vultuosus Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 152. ♂, ♀.

Genus POLYTRIBAX Foerster

Polytribax Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 183.

- Type-species: *Phygadeuon (Polytribax) pallescens* Viereck. By subsequent monotypy from inclusion by Viereck, 1911.
- Plesignathus* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 183.
- Type-species: *Phygadeuon fulvescens* Cresson. By subsequent monotypy from inclusion by Ashmead (1900) as "*Plesiognathus flavescens* Cress." Ashmead's N. J. record for this species is apparently based upon a misidentified female of *Polytribax contiguus* (Cresson).
- Neleophron* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 184.
- Type-species: *Cryptus arrogans* Gravenhorst. Monotypically included and designated by Perkins, 1962.
- Epiphobus* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 185.
- Type-species: *Cryptus rufipes* Gravenhorst. Monotypically included and design. by Townes and Gupta, 1962.
- Steriphocryptus cameron*, 1903. Entomologist 36: 233.
- Type-species: *Steriphocryptus luteus* Cameron. Monotypic.
- Chasmocryptus* Uchida, 1936. Insecta Matsumurana 11: 16.
- Type-species: *Plectocryptus hokkaidensis* Uchida. Monotypic and orig. design. The type-species is regarded as a synonym of *P. penetrator* (Smith).
- Members of this Holarctic genus parasitize the pupae and possibly prepupae of Lepidoptera.
- Taxonomy: Ashmead, 1900. In Smith, N. J. State Bd. Agr., Ann. Rpt. 27, Sup., p. 568 (first inclusion of a species in *Plesignathus*).
- contiguus* (Cresson). N. S. w. to N. Dak., s. to N. C., n. Ga., and Kans. The coloration of the male is similar to that of the males in some species of *Cratichneumon*.
- Ischnus contiguus* Cresson, 1864. Ent. Soc. Phila., Proc. 3: 190. ♂.
- Phygadeuon major* Cresson, 1864. Ent. Soc. Phila., Proc. 3: 308. ♀.
- crotchii crotchii* (Cresson). Newfoundland (insular) w. to Alaska, s. to Pa., S. Dak., and s. B. C.
- Phygadeuon Crotchii* Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 357. ♀.
- crotchii fumipennis* Townes and Gupta. Colo., N. Mex., Ariz., s.e. B. C. and Calif.
- Polytribax crotchii fumipennis* Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 179. ♂.
- crotchii hesperus* Townes and Gupta. Southern B. C., w. Oreg., Calif.
- Polytribax crotchii hesperus* Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 180. ♂.
- fulvescens* (Cresson). B. C. s. to Calif.
- Phygadeuon fulvescens* Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 359. ♀.
- pallescens* (Viereck). Que. s. to n.w. S. C., w. to Minn., Kans., and Ariz.; Mexico. Host: *Heterocampa guttivitta* (Wlk.), *Lambdina pellucidaria* (G. and R.), *Epargyreus clarus* (Cramer).
- Phygadeuon (Polytribax) pallescens* Viereck, 1911, U. S. Natl. Mus., Proc. 39: 406. ♂, ♀.

Genus GIRAUDIA Foerster

- Giraudia* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 184.
- Type-species: *Cryptus congruens* Gravenhorst. Monotypically included and design. by Ashmead, 1900.
- Calocryptus* Thomson, 1873. Opusc. Ent. 5: 519, 521.
- Type-species: *Cryptus congruens* Gravenhorst. Monotypic.
- Pseudocryptus* Kriechbaumer, 1893. Ent. Nachr. 19: 120.
- Type-species: *Cryptus griseus* Gravenhorst. Monotypic.
- This is a Holarctic genus of moderate size.
- ferruginea* (Cushman). R. I., N. Y., Md., D. C., Ont., Mich. Host: *Tomostethus multicinctus* (Roh.).
- Aptesis ferruginea* Cushman, 1935. Wash. Acad. Sci., Jour. 25: 550. ♂, ♀.
- fulva fulva* Townes and Gupta. Western Wash., w. Oreg., n.w. Calif.
- Giraudia fulva fulva* Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 190. ♂, ♀.
- fulva nigrithorax* Townes and Gupta. Colo., N. Mex., Alta., Idaho, Utah, s.e. B. C., e. Oreg.
- Giraudia fulva nigrithorax* Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 190. ♂, ♀.

leucospis Townes and Gupta. Calif.*Giraudia leucospis* Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 196. ♂.**minor** Townes and Gupta. N. C., S. C.*Giraudia minor* Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 196. ♂, ♀.**plana** (Provancher). Que. s. to n.e. Ga., w. to Minn. and Iowa.*Phygadeuon planus* Provancher, 1874. Nat. Canad. 6: 283. ♀.*Mesostenus ruficornis* Provancher, 1875. Nat. Canad. 7: 266. ♂. Uncertain syn.*Phygadeuon robustus* Provancher, 1879. Nat. Canad. 11: 75. ♀.*Mesostenus provancheri* Dalla Torre, 1902. Cat. Hym., v. 3, p. 546. Unnecessary n. name for *M. ruficornis*; the latter not preocc. by *Mesostenus ruficornis* Brulle.**punctifera** Townes and Gupta. Que. s. to Ga., w. to Wis.*Giraudia punctifera* Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 194. ♂, ♀.**rufa** (Provancher). Que. s. to w. N. C., w. to Minn.*Cryptus rufus* Provancher, 1874. Nat. Canad. 6 (6): 177 (key); 6 (7): 202. ♂.**semiflava** Townes and Gupta. Que., Maine, N. Y., Mich., N. Mex.*Giraudia semiflava* Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 191. ♂, ♀.**subaequalis** Townes and Gupta. N. Y., s.w. N. C., n.w. S. C., n.e. Ga.*Giraudia subaequalis* Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 197. ♂, ♀.**Genus SCHENKIA** Foerster*Schenkia* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 184.Type-species: *Phygadeuon graminicola* Gravenhorst. Monotypically included and desig. by Ashmead, 1900.*Ecpaglus* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 185.Type-species: *Cryptus brevicornis* Gravenhorst. Monotypically included and desig. by Ashmead, 1900.*Schenkia* Dalla Torre, 1901. Wien. Ent. Ztg. 20: 51. Emend.

This is a Holarctic genus of moderate size.

amphileuca Townes and Gupta. N. Y., Mich., Minn.*Schenkia amphileuca* Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 201. ♂, ♀.**graminicola** (Gravenhorst). Que. s. to N. Y., w. to n. Yukon, Oreg., and Colo.; Europe. Townes and Gupta (1962) recognized three subspecies.*Cryptus brevicornis* Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 511. ♂.*Cryptus humilis* Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 604. ♂.*Phygadeuon graminicola* Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 673. ♀.*Phygadeuon rectus* Provancher, 1875. Nat. Canad. 7: 178. ♂.*Phaeogenes tuberculifer* Provancher, 1882. Nat. Canad. 13: 331. "♀" = ♂.*Cryptus pubescens* Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 72. Preocc. by Fonscolombe, 1850.*Cryptus Hechfellneri* Dalla Torre, 1902. Cat. Hym., v. 3, p. 574. N. name for *C. pubescens* Provancher.*Schenkia graminicola hesperus* Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 207. ♂, ♀. N. syn.**iridescens** (Cresson). Newfoundland (Labrador) w. to Alaska, s. to S. C., Ill., Colo., and Oreg.*Ischnus iridescens* Cresson, 1864. Ent. Soc. Phila., Proc. 3: 193. ♂.*Cryptus brevicauda* Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 412. ♀.*Schenkia iridescens pumila* Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 211. ♂, ♀. N. syn.*Schenkia iridescens oreas* Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 212. ♂, ♀. N. syn.*Schenkia iridescens melanops* Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 216. ♂, ♀. N. syn.**leucopus** Townes and Gupta, N. Y., N. J., n.w. S. C., Ohio, Mich.*Schenkia leucopus* Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 217. ♂, ♀.

lonchura Townes and Gupta. Yukon.*Schenkia lonchura* Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 217. ♀.**parallela** evittata Townes and Gupta. Wash.*Schenkia parallela evittata* Townes and Gupta, 1962. Amer. Ent. Inst., Mem. 2: 209. ♀.**parallela parallela** Townes and Gupta. N. H. s. to s.w. S. C., w. to Sask.*Schenkia parallela parallela* Townes and Gupta, 1962, Amer. Ent. Inst., Mem. 2: 208. ♂, ♀.**Genus MEGAPLECTES** Foerster*Megaplectes* Foerster, 1868 Naturh. Ver. Rheinlande, Verh. 25: 186.Type-species: *Ichneumon monticola* Gravenhorst. By subsequent monotypy from inclusion by Schmiedeknecht, 1890.*Iocryptus* Thomson, 1873. Opusc. Ent. 5: 472.Type-species: *Phygadeuon regius* Taschenberg. Monotypic. The type-species is regarded as a synonym of *M. monticola monticola* (Gravenhorst).*Megaloplectes* Schulz, 1906. Spolia Hym., p. 124. Emend.

There is a single Holarctic species.

monticola blakei (Cresson). Newfoundland (Labrador) w. to Yukon, s. to w. N. C., Mich., Man., and Oreg. *M. monticola monticola* (Gravenhorst) is European.*Ichneumon blakei* Cresson, 1864 Ent. Soc. Phila., Proc. 3: 139. ♂.*Cryptus insignis* Provancher, 1874. Nat. Canad. 6: 178. ♀.*Hoplismenus stygicus* Provancher, 1886. Addit. Corr. Faune Ent. Canada. Hym., p. 34. ♂.**monticola dentatus** Uchida. Yukon, Alaska; n. Asia.*Megaplectes monticola* var. *dentata* Uchida, 1930. Hokkaido Imp. Univ., Faculty Agr., Jour. 25: 304. ♂, ♀.**Genus PLEOLOPHUS** Townes*Pleolophus* Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 223.Type-species: *Phygadeuon basizonus* Gravenhorst (sensu Townes). Orig. desig.

This is a Holarctic genus of moderate size.

annulosus Townes. Maine, N. Y., Mich.*Pleolophus annulosus* Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 226. ♂.**astrictus** Townes. Maine, N. H., Mass., Conn., N. Y., Mich., Alaska.*Pleolophus astrictus* Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 242. ♂, ♀.**basizonus** (Gravenhorst). N. B., Que., N. J., Ont., Mich., Ohio; Eurasia. Introduced from Europe. Host: *Gilpinia hercyniae* (Htg.), *Neodiprion lecontei* (Fitch), *N. nanulus**nanulus* Schedl, *N. pratti banksianae* Roh., *N. sertifer* (Geoff.), *N. swainnei* Midd.*Cryptus varicolor* Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 603. ♂.*Phygadeuon basizonus* Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 748. ♀.*Phygadeuon pteronorum* Hartig, 1838. Jahresber. Fortsch. Forstwiss. Forstl. Naturk. 1: 273. ♂, ♀.*Microcryptus basizonius*(!) Thomson, 1883. Opusc. Ent. 9: 863.*Microcryptus curtulus* Kriechbaumer, 1891. Ent. Nachr. 17: 171. ♂.

Taxonomy: Oehlke, 1966 (1965). Beitr. z. Ent. 15: 829-831 (syn. and description).

Biology: Seyrig, 1932 Soc. Ent. de France, Ann. 101: 111-112. —Finlayson and Reeks, 1936.

Canad. Ent. 68: 164, 166. —Morris, Cameron, and Jepson, 1937. Bul. Ent. Res. 28: 349-355

(in part). —Green, 1938. Ent. Soc. Ontario, Ann. Rpt. 69: 32-34. —Pierson and Nash, 1939.

Maine Forest Commr., Bien. Rpt. 22: 85. —Finlayson and Green, 1940. Canad. Ent. 72:

236-238. —Lovaszy, 1940. Ann. Ent. Fenn. 6: 64-65. —Kangas, 1941. Ann. Ent. Fenn. 7:

10-27. —Reeks, 1953. Canad. Jour. Agr. Sci. 33: 407, 408, 416-417. —Hein, 1956. Nederland.

Boschbouw.-Tijdschr. 28: 283-297. —Finlayson and Finlayson, 1957. Canad. Ent. 89:

507-509. — Niklas and Franz, 1957. Biol. Bundesanst. f. Land. u. Forstw. (Berlin-Dahlem), Mitt. 89: 22-23. — Finlayson and Finlayson, 1958. Canad. Ent. 90: 223-224. — Finlayson, 1958. Canad. Ent. 90: 557-563. — Finlayson, 1960 (1959). Ent. Monthly Mag. 95: 216. — Finlayson, 1961 (1960). Ent. Monthly Mag. 96: 177. — Finlayson, 1961. Canad. Ent. 93: 626-628. — Finlayson, 1961. Canad. Ent. 93: 799-801. — Griffiths, 1961. Canad. Ent. 93: 1005-1010. — Griffiths, 1969. Canad. Ent. 101: 673-713, 907-914. — Price, 1970. Science 170: 546-547. — Price, 1970. Canad. Ent. 102: 1102-1111. — Price, 1970. Ecology 51: 445-454. — Price, 1971. Ecology 52: 587-596. — Price, 1972. Canad. Ent. 104: 129-140.

Morphology: Finlayson, 1960. Canad. Ent. 92: 33, 35, 44 (final-instar larva).

borrori Townes. Maine.

Pleolophus borrori Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 228. ♀.

clypealis Townes. Alaska.

Pleolophus clypealis Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 242 ♂.

contractus Townes. B. C. s. to Calif. Host: *Pristiphora erichsonii* (Htg.).

Pleolophus contractus Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 237. ♂, ♀.

coriaceus Townes. Sask., Alta.

Pleolophus coriaceus Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 229. ♂.

furvus Townes. Colo.

Pleolophus furvus Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 228. ♂.

grossus Townes. N. Y., Mich., N. Dak., and B. C., s. to w. N. C., Kans., and Oreg.

Pleolophus grossus Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 229. ♂, ♀.

indistinctus (Provancher). N. B. s. to w. N. C., w. to Sask. and Iowa. Host: *Neodiprion abbotii* (Leach), *N. abietis* (Harris), *N. lecontei* (Fitch), *N. nanulus nanulus* Schedl, *N. pratti banksianae* Roh., *N. sertifer* (Geoff.), *N. swainei* Midd., *Gilpinia hercyniae* (Htg.), *Pristiphora erichsonii* (Htg.), *Pikonema alaskensis* (Roh.).

Cryptus micropterus Say, 1836. Boston Jour. Nat. Hist. 1: 238. ♀. Preocc. in *Pleolophus* by *Ichneumon micropterus* Gravenhorst.

Phaeogenes indistinctus Provancher, 1886. Addit. Corr. Faune Ent. Canad. Hym., p. 43. ♂.

Cryptus segregatus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 73. ♂.

Aptesis pterigia Bradley, 1918. Brooklyn Ent. Soc., Bul. 13: 100. N. name for *C.*

micropterus Say.

Biology: Price, 1970. Science 170: 546-547. — Price, 1970. Ecology 51: 445-454. — Price, 1970. Ent. Soc. Amer., Ann. 63: 1502-1509. — Price, 1971. Ecology 52: 587-596.

Morphology: Finlayson, 1960. Canad. Ent. 92: 31-33, 44 (final-instar larva).

nigribasis Townes. Colo., N. Mex.

Pleolophus nigribasis Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 237. ♂.

pilatus Townes. Newfoundland (Labrador), Mich., Minn.

Pleolophus pilatus Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 227. ♂, ♀.

rubrocinctus rubrocinctus (Provancher). Que. s. to N. Y., w. to Mich.

Phygadeuon rubrocinctus Provancher, 1874. Nat. Canad. 6: 280. ♀.

Phaeogenes aterrimus Provancher, 1882. Nat. Canad. 13: 330. ♂.

rubrocinctus rufifemur Townes. Sask. s. to Colo., w. to Alaska and Calif.

Pleolophus rubrocinctus rufifemur Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 233. ♂, ♀.

Genus RHYTURA Townes

Rhytura Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 244.

Type-species: *Rhytura pendens* Townes. Monotypic and orig. design.

Only one species is known.

pendens Townes. Que. s. to n. Ga., w. to Minn.

Rhytura pendens Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 244. ♂, ♀.

Genus *APTESIS* Foerster

Aptesis Foerster, 1850. Arch. f. Naturgesch. 16 (1): 71, 82.

Type-species: *Ichneumon sudeticus* Gravenhorst. Desig. by Viereck, 1914. The type-species is regarded as a synonym of *A. nigrocincta* (Gravenhorst).

Pezoporus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 181. Preocc. by Illiger, 1811 and Klug, 1842.

Type-species: *Pezomachus nigrocinctus* (Gravenhorst). Monotypically included and desig. by Ashmead, 1900. The type-species designation is Gravenhorst's 1929 identification of *Ichneumon nigrocinctus* Gravenhorst, 1815.

Aptesis subg. *Clypeodiodon* Aubert, 1968. Soc. Ent. Mulhouse, Bul. 24: 7.

Type-species: *Aptesis* (*Clypeodiodon*) *flavifaciator* Aubert. Monotypic. As "*Aptesis Clypeodion* subg. nov. *flavifaciator* sp. nov."

This is a large Holarctic genus. Townes (1970) said that "the species occur mostly in natural meadows."

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 139.

albifrons Townes. N. Y.

Aptesis albifrons Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 267. ♂.

alpestris Townes. Colo., Idaho, Ariz., B. C., Wash., Oreg., Calif.

Aptesis alpestris Townes, 1962. In Townes and Gupta, Amer. Ent. Inst. Mem. 2: 255. ♂, ♀.

anaula Townes. S. C.

Aptesis anaula Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 272. ♂.

atrox Townes. Ohio.

Aptesis atrox Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 269. ♀.

breviaria Townes. N. Y., Mich., Ohio, Minn.

Aptesis breviaria Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 253. ♂, ♀.

catulus Townes. N. Y., N. J., Md., Va., N. C., Kans.

Aptesis catulus Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 263. ♂, ♀.

fastigata Townes. Alta., Wyo., Oreg., Calif.

Aptesis fastigata Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 267. ♂, ♀.

fuscitibia Townes. Maine, Mass., R. I., N. Y., w. N. C., Mich.

Aptesis fuscitibia Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 262. ♂, ♀.

gracilis Townes. Northern Mich., Alta.

Aptesis gracilis Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 251. ♂.

incompta Townes. Northwestern S. C.

Aptesis incompta Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 265. ♂, ♀.

inculta Townes. Que. s. to w. N. C., w. to Mich.

Aptesis inculta Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 257. ♂, ♀.

lissopleuris Townes. Western N. C. Ecology: Between altitudes of 4600 ft. and 5750 ft.

Aptesis lissopleuris Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 257. ♀.

scabra Townes. Md.

Aptesis scabra Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 266. ♀.

segnis femorata Townes. Sask., Alta., Wyo., Colo., Calif.

Aptesis segnis femorata Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 260. ♂, ♀.

- segnis segnis* (Provancher). Que., Maine, N. H. N. Y., n.w. S. C., Mich. Ecology: I have seen a long series of males collected in Malaise traps placed in the crowns of *Abies balsamifera*. Host: *Profenusa canadensis* (Marl.).
Phygadeuon segnis Provancher, 1877. Nat. Canad. 9: 11. ♀.
Pezoporus (*Schenkia*) *tenthredinarum* Rohwer, 1915. U. S. Natl. Mus., Proc. 49: 216. ♂, ♀.
- Biology: Parrott and Fulton, 1915. N. Y. Agr. Expt. Sta., Bul. 411: 552, 572.
- subguttata** (Gravenhorst). Europe. Introduced in N. B., Que., and Ont. in 1937 and 1938, apparently without becoming established. Host: *Gilpinia hercyniae* (Htg.). The host listed was the target species for the introductions in North America, although a small number of individuals was released in an infestation of *Neodiprion lecontei* (Fitch). Although the number of individuals released against *G. hercyniae* at some places was large (as many as 6108 males and 10974 females) *A. subguttata* has not been found in North America since 1939 when it was recovered from *G. hercyniae* in Parke Reserve, Kamouraska Co., Que.
- Cryptus subguttatus* Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 610. ♂.
Cryptus contractus Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 617. ♂.
- Taxonomy: Oehlke, 1966 (1965). Beitr. z. Ent. 15: 835-836 (syn.).
- Morphology: Finlayson, 1960. Canad. Ent. 92: 931, 932, 939 (final-instar larva).
- verrucata** Townes. Maine, N. H., N. Y., Ohio, Mich.
Aptesis verrucata Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 252. ♂, ♀.
- yosemite** Townes. Wyo., Calif.
Aptesis yosemite Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 254. ♂, ♀.

Genus OXYTAENIA Foerster

Oxytaenia Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 182.

Type-species: *Oxytaenia rufolineata* Cameron. By subsequent monotypy from inclusion by Cameron, 1904.

Townes (1970) said that he saw 13 species, all of which are Neotropic except for the fact that one of them has a Nearctic subspecies.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 140.

barda carolina (Townes). Que. s. to w. N. C., w. to Mich. and Kans. *O. barda barda* (Cresson) occurs in Mexico.

Aptesis barda carolina Townes, 1962. In Townes and Gupta, Amer. Ent. Inst., Mem. 2: 271. ♂, ♀.

Genus ECHTHRUS Gravenhorst

Echthrus Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 861.

Type-species: *Ichneumon reluctator* Linnaeus. Desig. by Westwood, 1840.

Sphaetes Bremi, 1849 Stettin. Ent. Ztg. 10: 95.

Type-species: *Sphaetes crassicus* Bremi. Monotypic.

Karaechthrus Uchida, 1929. Insecta Matsumurana 3: 176.

Type-species: *Karaechthrus tuberculatus* Uchida. Monotypic and orig. desig.

Bioleter Meyer, 1930. Zool. Mus. Akad. Nauk. SSSR, Ezheg. 31: 169.

Type-species: *Bioleter eous* Meyer. Monotypic and orig. desig.

Townes and Townes (1962) placed this small Holarctic genus in the Cryptini (=Mesostenini), subtribe Echthrina along with four other genera, but only *Echthrus* was transferred to the present tribe by Townes (1970).

Revision: Townes and Townes, 1962. U. S. Natl. Mus., Bul. 216 (pt. 3): 486-501.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 112, 113, 130.

- abdominalis** Cresson. N. S. w. to B. C., s. to N. Y., Minn., N. Mex., and Calif. Townes and Townes (1962) recognized four subspecies.
Echthrus abdominalis Cresson, 1868. Canad. Ent. 1: 37. ♀.
Mesochorus Saint-Cyri Provancher, 1874. Nat. Canad. 6: 299. ♀.
Dyseidopus vancouverensis Bradley, 1902. Ent. News 13: 307. ♂. N. syn.
Echthrus abdominalis dimidiatus Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 491. ♂, ♀. N. syn.
Echthrus abdominalis infuscus Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 492. ♂, ♀. N. syn.
- adillae** *adillae* Davis. Newfoundland (Labrador), n. Ont., Alta., Mont., Wyo., Idaho, Alaska, B. C., Wash., n. Oreg. Host: *Paranthrene robiniae* (Hy. Edwards).
Echthrus adillae Davis, 1895. Amer. Ent. Soc., Trans. 22: 32. ♂.
Echthrus adillae nigriventris Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 497. ♂, ♀. N. syn.
Echthrus adillae semiruber Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 498. ♂, ♀. N. syn.
- adillae rubidus** Townes. Nev., s. Oreg., Calif.
Echthrus adillae rubidus Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 499. ♂, ♀.
- adillae tibialis** Townes. Que., Maine, N. Y., Ont., Va.
Echthrus adillae tibialis Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 500. ♂, ♀.
Echthrus adillae brunneus Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 501. ♂, ♀. N. syn.
- niger** Cresson. N. S. w. to n. B. C., s. to N. C., Ohio, Minn., and s. Alta. Host: *Anoploclera proxima* (Say)?, *Saperda candida* F., *S. discoidea* F. Townes and Townes (1962) recognized three subspecies, two of which were almost completely sympatric and had ranges which broadly overlapped that of the third subspecies.
Echthrus niger Cresson, 1868. Canad. Ent. 1: 37. ♀.
Echthrus rufopedibus Harrington, 1893. Canad. Ent. 25: 31. ♀. N. syn.; name invalid because it is in the dative case.
Echthrus niger emaculatus Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 494. ♂, ♀. N. syn.

TRIBE CRYPTINI

Just as the Cryptinae is the largest of ichneumonid subfamilies, the Cryptini is the largest tribe in the subfamily. Although the greatest numbers of genera and species of Cryptini occur in the tropics, the tribe is well represented in North America. Townes (1970) implies that the species of Cryptini search for their hosts primarily among foliage rather than in the soil or ground litter and differ from the species of Aptesini and Hemitelini in this respect as well as in having larger average size.

Townes (1970) divided the Cryptini (=Mesostenini) into subtribes which are partly for convenience and partly to show what he believed to be some of the natural groupings of genera. In the hope that this classification is actually an improvement over that of Townes and Townes (1962), the former is adopted here with little modification.

Revision: Townes and Townes, 1962. U. S. Natl. Mus. Bul. 216 (pt. 3): 1-602.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 141-346 (genera of world).

SUBTRIBE AGROTHEREUTINA

Genus APSILOPS Foerster

Apsilops Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 182.

Type-species: *Cryptus hirtifrons* Ashmead. By subsequent monotypy from inclusion by Ashmead, 1896.

Heterotypus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 183.

Type-species: *Ichneumon cinctorius* Fabricius. Monotypically included and desig. by Townes, Townes, and Gupta, 1961.

Dapanus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 183.

Type-species: *Ichneumon cinctorius* Fabricius. Monotypically included and desig. by Ashmead, 1900.

Sobas Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 187. Preocc. by Pascoe, 1863.

Type-species: *Ichneumon cinctorius* Fabricius. Monotypically included and desig. by Schmiedeknecht, 1890.

Trichocryptus Thomson, 1873. Opusc. Ent. 5: 520, 521.

Type-species: *Cryptus cinctorius* Gravenhorst. Monotypic. The type-species is Gravenhorst's identification of *Ichneumon cinctorius* Fabricius.

Neostricklandia Viereck, 1925. Canad. Ent. 57: 75.

Type-species: *Neostricklandia sericata* Viereck. Monotypic. and orig. desig.

Trichestema Cushman, 1927. U. S. Natl. Mus., Proc. 72 (13): 9.

Type-species: *Trichestema helcostizoides* Cushman. Monotypic and orig. desig.

The members of this small Holarctic genus parasitize aquatic or subaquatic Pyraloidea. There is an undescribed species which is known from Fla. and Cuba; it has been reared from *Samea multiplicatis* Gn.

bicolor (Cushman). Ont. and Mass., s. to Md., w. to Alta., Wash. and Calif. Host: *Schoenobius melinellus* (Clem.).

Trichocryptus bicolor Cushman, 1927. U. S. Natl. Mus., Proc. 72 (13): 8. ♀.

Trichocryptus atlanticus Cushman, 1930 (1929). U. S. Natl. Mus., Proc. 76 (25): 3. ♀.

hirtifrons (Ashmead). Ont. and Mass. s. to Fla., w. to Minn. and Tex. Host: *Nymphula* sp.

Cryptus hirtifrons Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 411. ♂.

Cryptus cyaniventris Riley, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 154. Nomen nudum.

Taxonomy: Cushman, 1927. U. S. Natl. Mus., Proc. 72 (13): 7.

Biology: Hart, 1895. Ill. Nat. Hist. Survey, Bul. 4: 178-179.

sericata (Viereck). Que. w. to Alta., s. to Mass., Mich., and S. Dak. Host: *Occidentalia comptulatalis* (Hulst), *Stenochilo forbesellus* (Fern.).

Neostricklandia sericata Viereck, 1925. Canad. Ent. 57: 75. ♀.

Trichestema helcostizoides Cushman, 1927. U. S. Natl. Mus., Proc. 72 (13): 9. ♀.

Biology: Frohne, 1939. Amer. Micros. Soc., Trans. 58: 234, 325, 347.

Genus AGROTHEREUTES Foerster

Agrothereutes Foerster, 1850. Arch. f. Naturgesch. 16 (1): 71.

Type-species: *Pezomachus abbreviator* Gravenhorst. Desig. by Viereck, 1914. The type-species is Gravenhorst's identification of *Ichneumon abbreviator* Fabricius.

Spilocryptus Thomson, 1873. Opusc. Ent. 5: 472, 501.

Type-species: *Spilocryptus zygaenarum* Thomson. Desig. by Viereck, 1914. The type-species is regarded as a synonym of *A. fumipennis* (Gravenhorst).

Dayro Cameron, 1902. Ann. and Mag. Nat. Hist. (7) 9: 209.

Type-species: *Dayro pilosus* Cameron. Monotypic.

This Holarctic genus has a greater number of species in Eurasia than in North America.

abbreviator iridescens (Cresson). Northern Que. w. to Alaska, s. to N. C., La., Kans., Sask., and Alta. Host: *Gilpinia hercyniae* (Htg.), *Heterarthrus nemoratus* (Fall.), *Neodiprion abietis* (Harris), *N. lecontei* (Fitch), *N. sertifer* (Geoff.), *Pristiphora erichsonii* (Htg.), *Paraclemensia acerifolia* (Fitch), *Paralobesia viteana* (Clem.). *A. abbreviator abbreviator* (Fabricius) occurs in Europe. In their tribal revision, Townes and Townes (1962) divided *iridescens* into two arbitrarily and unnaturally separated subspecies supposedly based upon a combination of color and female wing length (normal versus brachypterus).

Cryptus iridescens Cresson, 1864. Ent. Soc. Phila., Proc. 3: 296. ♂.

Cryptus soror Cresson, 1864. Ent. Soc. Phila., Proc. 3: 296. ♂.

- Phygadeuon similaris* Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 57. ♂. N. syn.
- Cryptus albonotatus* Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 75. ♂.
- Aptesis major* Davis, 1893. Ent. News 4: 32. ♀. N. syn.
- Spilocryptus propodeum* Cushman, 1920. U. S. Natl. Mus., Proc. 58: 253. ♂.
- Agrothereutes microalatus* Cushman, 1927. U. S. Natl. Mus., Proc. 72 (13): 4. ♀. N. syn.
- Agrothereutes slossonae* Cushman, 1927. U. S. Natl. Mus., Proc. 72 (13): 4. ♀. N. syn.
- Morphology: Finlayson, 1960. Canad. Ent. 92: 931, 932, 939 (final-instar larva).
- abbreviator rufopectus** Cushman. Alta. s. to N. Mex., w. to B. C. and Calif. Host: *Neodiprion tsugae* Midd., *Pristiphora erichsonii* (Htg.), *Laspeyresia nigricana* (Steph.).
- Agrothereutes rufopectus* Cushman, 1927. U. S. Natl. Mus., Proc. 72 (13): 4. ♀.
- alutarius** Townes. N. W. T., Yukon, Alaska.
- Agrothereutes alutarius* Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 47. ♂, ♀.
- cimbeivorus** (Cushman). Que. w. to B. C., s. to N. H., Mich., S. Dak., Colo., and Calif. Host: *Cimbex americana* Leach.
- Spilocryptus* (!) *cimbeivorus* Cushman, 1924. U. S. Natl. Mus., Proc. 64(4): 8. ♂, ♀.
- Agrothereutes cimbeivorus* Walkley, 1958. In Krombein et al., U. S. Dept. Agr., Agr. Monog. 2, Sup. 1, p. 46. Unjustified emendation.
- grandis** Townes. Conn. s. to n.w. S. C., w. to Ohio.
- Agrothereutes grandis* Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 46. ♂, ♀.
- lophyri** (Norton). Newfoundland (insular) w. to B. C., s. to Fla., Ala., Ill., and Minn. Host: *Neodiprion abietis* (Harris), *N. excitans* Roh., *N. lecontei* (Fitch), *N. nanulus nanulus* Schedl, *N. nigroscutum* Midd., *N. pratti banksianae* Roh., *Diprion similis* (Htg.).
- Cryptus Lophyri* Norton, 1869. Amer. Ent. Soc., Trans. 2: 326. ♂, ♀.
- Agrothereutes lophyri ontariensis* Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 60. ♂, ♀. N. syn.
- Agrothereutes lophyri obscurus* Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 61. ♂, ♀. N. syn.
- mandator americanus** Townes. Que. w. to B. C., s. to N. J., Mich., Colo., and Wash. Host: *Cimbex americana* Leach, *Trichiosoma triangulum* Kirby. *A. mandator mandator* (Linnaeus) is European. About eight individuals of *manducator americanus* emerge from a single host cocoon.
- Agrothereutes mandator americanus* Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 68. ♂, ♀.
- montanus** Townes. Colo. Ecology: The unique holotype was collected at an elevation of 11,000 ft. in Rocky Mountain National Park.
- Agrothereutes montanus* Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 48. ♀.
- neodiprionis** (Cushman). Wash., Oreg., Calif. Host: *Neodiprion tsugae* Midd.
- Spilocryptus neodiprionis* Cushman, 1939. Wash. Acad. Sci., Jour. 29: 393. ♂, ♀.
- pallipennis** Townes. Calif. Ecology: The species is known from two specimens which were swept from *Artemisia* foliage at elevations of 8000 and 8500 ft.
- Agrothereutes pallipennis* Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 49. ♂, ♀.

Genus GAMBRUS Foerster

Kaltenbachia Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 187.

Type-species: *Cryptus ornatus* Gravenhorst. By subsequent monotypy from inclusion by Brischke, 1888? The type-species is regarded as a synonym of *G. incubitor* (Linnaeus).

Gambrus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 188.

Type-species: *Gambrus* (*Cryptus*) *maculatus* Brischke. By subsequent monotypy from inclusion by Brischke, 1888. The type-species is regarded as a synonym of *G. incubitor* (Linnaeus).

Hygrocryptus Thomson, 1873. Opusc. Ent. 5: 513.

Type-species: *Cryptus carnifex* Gravenhorst. Desig. by Viereck, 1914.

Allocryptus Viereck, 1917. Conn. State Geol. and Nat. Hist. Survey Bul. 22: 333.

Type-species: *Agrothereutes (Allocryptus) hyslopi* Viereck. Monotypic.

This is a Holarctic genus which is rather arbitrarily distinguished from *Agrothereutes* and *Aritranis*.

apicatus (Provancher). N. S., Que., Maine, Vt., N. Y., Ont., Ohio, Sask. Ecology: This species has been reared from galls of *Euura* on Salix, but appears to be too large to be a parasite of *Euura* and may parasitize Lepidoptera which occupy the galls secondarily.

Cryptus apicatus Provancher, 1874. Nat. Canad. 6 (6): 178 (key); 6 (7): 204. ♀.

Cryptus cinctus Provancher, 1875. Nat. Canad. 7: 175. ♂. Preocc. by Fabricius, 1805.

bituminosus (Cushman). Mass., Conn., N. Y., N. J., Ga., Ill., Minn., La., Calif. Ecology: This species has been collected on *Spartina* in salt marshes. Host: *Diatraea* sp., *Ostrinia nubilalis* (Hbn.), *O. obumbratalis* (Led.), *O. penitalis* (Grt.), *Sphenophorus pertinax* (Oliv.).

Cryptoides bituminosus Cushman, 1924. U. S. Natl. Mus., Proc. 64 (4): 6. ♀.

canadensis burkei (Viereck). California. Host: *Orgyia leucostigma* (J. E. S.), *O. vetusta* (Bdv.). *Malacosoma californicum californicum* (Pack.).

Cryptus (Gambrus) burkei Viereck, 1909. Ent. News 20: 291. ♂, ♀.

canadensis canadensis (Provancher). N. S. w. to B. C., s. to N. C., Kans., Ariz., and Oreg.

Host: *Malacosoma americanum* (F.), *M. californicum fragile* (Stretch), *M. distria* Hbn., *Laspeyresia pomonella* (L.), *Archips cerasivoranus* (Fitch), *Thymelicus lincola* (Ochs.). In their tribal revision, Townes and Townes (1962) divided this subspecies into two with very broadly overlapping ranges.

Nematopodius Canadensis Provancher, 1875. Nat. Canad. 7: 268. ♂.

Spilocryptus exarcolatus Viereck, 1903. In Skinner, Amer. Ent. Soc., Trans. 29: 81. ♂. N. syn.

extrematis (Cresson). N. S. w. to B. C., s. to D. C., Kans., Utah, and Calif. Host: *Hyalophora cecropia* (L.), *H. columbia* (S. I. S.), *H. euryalus* (Bdv.), *H. gloveri* (Stkr.).

Cryptus extrematis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 404. ♀.

Cryptus samiae Packard, 1865. Boston Soc. Nat. Hist., Proc. 9: 345. ♂, ♀.

Echthrus Provancheri Provancher, 1885. Canad. Ent. 17: 116. ♂, ♀. The evidence given by Barron (1975) does not seem sufficient for attributing authorship to Brodie (in Provancher) rather than to Provancher.

Spilocryptus cecropiae Habermehl, 1919. Ztschr. f. Wiss. Insekten-Biol. 14: 239. ♀.

Taxonomy: Barron, 1975. Nat. Canad. 102: 536.

Biology: Riley, 1872. Mo. State Ent., Ann. Rpt. 4: 110-111. —Harrington, 1891. Ent. Soc.

Ontario, Ann. Rpt. 21: 67. —Smith, 1908. Jour. Econ. Ent. 1: 294-297. —Marsh, 1937.

Ecology 18: 107-111. —Marsh, 1937. Ent. Soc. Amer., Ann. 30: 40-42. —Marsh, 1938. N. Y. Ent. Soc., Jour. 46: 27.

Morphology: Riederer, 1890. N. Y. Micros. Soc., Jour. 46: 27.

nuncius (Say). N. B. w. to w. N. W. T., s. to Ala. and La. Host: *Callosamia angulifera* (Wlk.), *C. promethia* (Drury), *Antheraea polyphemus* (Cramer), *Samia cynthia* (Drury).

Cryptus nuncius Say, 1836. Boston Jour. Nat. Hist. 1: 237. ♀.

polyphemi Townes. N. S. w. to B. C., s. to Fla., Tex., N. Mex. and Oreg. Host: *Antheraea polyphemus* (Cramer).

Cryptus sordidus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 67. ♀. Preocc. by Tschek, 1870.

Gambrus polyphemi Townes, 1945. Amer. Ent. Soc., Mem. 11: 809. N. name for *C. sordidus* Provancher.

tunicularubra (Fyles). Southern Que. Host: *Gnorimoschema gallaeasteriella* (Kell.). The lectotype is apparently the only remaining specimen reared by Fyles. Fyles mentioned having encountered this ichneumonid repeatedly in his work on the biology of the host,

- but apparently the host has not been reared frequently since then. Perhaps *tunicularubra* will prove to be a melanic variant of *G. ultimus* (Cresson).
- Trychosis tunicula-rubra* Fyles, 1896. *Canad. Ent.* 28: 148. ♂, ♀.
- ultimus** (Cresson). N. S. w. to Oreg., s. to Fla., Tex., Ariz., and Calif.; Hawaii. Host: *Acrobasis caryae* Grt., *Herpetogramma bipunctalis* (F.), *Loxostege sticticalis* (L.), *Ostrinia nubilalis* (Hbn.), *Phlyctaenia coronata tertialis* (Gn.), *Udea rubigalis* (Gn.), *Astala confederata* (Grt.), *Hyaloscotes pithopoera* (Dyar), *Thyridopteryx ephemeraeformis* (Haw.), *Platynota flavedana* Clem., *Ancyliis comptana* (Froel.), *Grapholitha molesta* (Bsk.), *Paralobesia viteana* (Clem.), *Coleophora* sp., *Pectinophora gossypiella* (Sdrs.), *Exyra semicrocea* (Gn.), *Neogalea esula* (Druce), *Simyra henrici* (Grt.), *Trichoplusia ni* (Hbn.), *Bathyplectes curculionis* (Thom.).
- Cryptus ultimus* Cresson, 1864. *Ent. Soc. Phila., Proc.* 3: 305. ♀.
- Cryptus incertus* Cresson, 1864. *Ent. Soc. Phila., Proc.* 3: 306. ♀. Preocc. by Ratzeburg, 1852.
- Phygadeuon longicornis* Provancher, 1886. *Addit. Corr. Faune Ent. Canada Hym.*, p. 52. ♀.
- Hemiteles annulicornis* Ashmead, 1890 (1889). *U. S. Natl. Mus., Proc.* 12: 403. ♀.
- Agrothereutes (Alloctypus) hyslopi* Viereck, 1917 (1916). *Conn. State Geol. and Nat. Hist. Survey Bul.* 22: 333. ♀.
- Spilocryptus exannulatus* Cushman, 1919. *U. S. Natl. Mus., Proc.* 55: 529. ♂, ♀.
- Hoplocryptus incertulus* Cushman, 1925. *Wash. Acad. Sci., Jour.* 15: 390. N. name for *C. incertus* Cresson.
- Biology: Fink, 1932. *Jour. Agr. Res.* 44: 555, 556. — Haden, 1935. *Del. Univ. Agr. Expt. Sta., Bul.* 194: 33-35.
- yukonensis** Townes. N. W. T., Yukon, Alaska.
- Gambrus yukonensis* Townes, 1962. *In Townes and Townes, U. S. Natl. Mus. Bul.* 216 (pt. 3): 79. ♂, ♀.

Genus ARITRANIS Foerster

- Aritranis* Foerster, 1868. *Naturh. Ver. Rheinlande, Verh.* 25: 187.
- Type-species: *Cryptus explorator* Tschek. *Desig.* by Viereck, 1914. from two species included by Tschek, 1870.
- Hoplocryptus* Thomson, 1873. *Opusc. Ent.* 5: 508.
- Type-species: *Hoplocryptus binotulus* Thomson. *Desig.* by Viereck, 1914. The type-species is regarded as a synonym of *A. fugitiva* (Gravenhorst).
- This Holarctic genus is arbitrarily distinguished from *Gambrus*.
- affabilis** (Provancher). Que. s. to w. N. C., w. to Minn. and Kans. Host: *Cephus pygmaeus* (L.), *Trachelus tabidus* (F.), *Phlyctaenia coronata tertialis* (Gn.).
- Cryptus affabilis* Provancher, 1877. *Nat. Canad.* 9: 13. ♀.
- albicollaris albicollaris** (Cresson). Que. s. to N. C., w. to Mont. and Tex. Host: *Phlyctaenia coronata tertialis* (Gn.).
- Cryptus albicollaris* Cresson, 1872. *Amer. Ent. Soc., Trans.* 4: 158. ♀.
- albicollaris clypeata** Townes. Wash., Calif.
- Aritranis albicollaris clypeata* Townes, 1962. *In Townes and Townes, U. S. Natl. Mus. Bul.* 216 (pt. 3): 114. ♂, ♀.
- barberi** Townes. Md.
- Aritranis barberi* Townes, 1962. *In Townes and Townes, U. S. Natl. Mus. Bul.* 216 (pt. 3): 111. ♂.
- byrsina** Townes. Que. s. to Ga., w. to Wis., Kans., and La. Host: *Achatodes zeeae* (Harris), *Papaipema* sp. in *Sambucus* pith, "*Oberca* sp." in raspberry stem. It does not seem likely that *A. byrsina* would be a primary parasite of *Oberca*.
- Aritranis byrsina* Townes, 1962. *In Townes and Townes, U. S. Natl. Mus. Bul.* 216 (pt. 3): 102. ♂, ♀.
- imitator** (Provancher). Que. w. to n. Yukon, s. to R. I., Ohio, Colo., and Calif. Host: *Hoplitis (Cyrtosmia) hypocrita* (Ckll.).
- Cryptus imitator* Provancher, 1877. *Nat. Canad.* 9: 13. ♀.

- Aritranis imitator nigriiventris* Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 121. ♂, ♀. N. syn.
- Aritranis imitator monticola* Townes, 1962. In Townes and Townes, U. S. Natl. Mus., Bul. 216 (pt. 3): 124. ♂, ♀. N. syn.
- Aritranis imitator ruficauda* Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 125. ♂, ♀. N. syn.
- linnae linnae** Townes. Que., N. Y., Ont., Mich., Minn., Sask., Alta.
- Aritranis linnae linnae* Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 105. ♂, ♀.
- linnae pacifica** Townes. Calif.
- Aritranis linnae pacifica* Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 106. ♂, ♀.
- notata newcomeri** (Cushman). Mont., Ida., B. C., Wash., Oreg. Host: *Ametastegia glabrata* (Fall.), *Allantus cinctus* (L.).
- Caenocryptus newcomeri* Cushman, 1917. U. S. Natl. Mus., Proc. 53: 463. ♂, ♀.
- notata notata** (Provancher). Que. s. to w. N. C., w. to Alaska, Alta, and Colo. Host: *Ametastegia glabrata* (Fall.), *Ancistrocerus bivenimaculatus* (Sauss.), "*Odynerus*" sp. in *Rhus* stem.
- Cryptus Belangeri* Provancher, 1874. Nat. Canad. 6 (6): 177 (key); 6 (7): 201. ♀. The holotype was not located by Barron (1975).
- Cryptus notatus* Provancher, 1874. Nat. Canad. 6 (6): 177 (key); 6 (7): 202. ♂. A specimen presumed to be the holotype was located by Barron (1975).
- Cryptus elongatus* Provancher, 1882 (Dec.). Nat. Canad. 13: 362. ♂. Preocc. by Rudow, 1882 (Nov.).
- Oronotus albomaculatus* Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 205. ♂.
- Taxonomy: Barron, 1975. Nat. Canad. 102: 433, 466, 520.
- notata sierrae** Townes. Calif. Host: *Ancistrocerus spilogaster* Cam., *Leptochilus tetradymia* Parker, *Megachile gentilis* Cr.
- Aritranis notata sierrae* Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 120. ♂, ♀.
- nubecula** Townes. R. I., Fla., Mich., Tex.
- Aritranis nubecula* Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 109. ♂, ♀.
- zoesmairi** (Dalla Torre). Que. s. to w. N. C., w. to Wis. Host: *Ceratina dupla* Say. Individual larvae consume two to five host larvae.
- Cryptus ornatus* Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 63 (key). ♀. Preocc. by Gravenhorst, 1829.
- Cryptus scutellatus* Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 69. ♀. Preocc. by Smith, 1858 and Provancher, 1877. This is species number 39 in Provancher's treatment of *Cryptus*; the same number is used by Provancher for *C. ornatus* in his key to the species of *Cryptus*; the fact that the synonymy between the two names pertaining to species number 39 is objective was substantiated by Provancher (1889).
- Cryptus gracilis* Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 74. ♂. Preocc. by Gravenhorst, 1829.
- Cryptus Zoesmairi* Dalla Torre, 1902. Cat. Hym., v. 3, p. 595. N. name for *C. scutellatus* Provancher and *C. ornatus* Provancher.
- Habrocryptus graenicheri* Viereck, 1904. Ent. News 15: 333. ♀.
- Taxonomy: Provancher, 1889. Addit. Corr. Faune Ent. Canada Hym., p. 452.
- Biology: Graenicher, 1905. Ent. News 16: 43-49.

Genus PYCNOCRYPTUS Thomson

Pycnocryptus Thomson, 1873. Opusc. Ent. 5: 500.

Type-species: *Cryptus peregrinator* Gravenhorst. Monotypic. The type-species is Gravenhorst's misidentification of *Ichneumon peregrinator* Linnaeus; the specimens which Gravenhorst identified as *peregrinator* are now identified as *P. director* (Thunberg).

Cylindrocryptus Ceballos, 1921. Soc. Espan. de Hist. Nat., Bol. 21: 50.

Type-species: *Cylindrocryptus nitidus* Ceballos. Monotypic and orig. desig.

This is a small Holarctic genus.

alexanderi Townes. Vt.

Pycnocryptus alexanderi Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 128. ♂.

director (Thunberg). P. E. I. s. to N. C., w. to Mont. and Colo.; Europe. Adventive.

Ichneumon director Thunberg, 1822. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 270. ♂.

freemani Townes. N. B., Alta., Alaska.

Pycnocryptus freemani Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 127. ♀.

platyaspis Townes. Northern Que., n. Man., Wyo.

Pycnocryptus platyaspis Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 127. ♀.

Genus HIDRYTA Foerster

Hidryta Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 187.

Type-species: *Brachycryptus erythrocerus* Thomson. Desig. by Viereck, 1914 from four species included by Dalla Torre, 1902.

Brachycryptus Thomson, 1873. Opusc. Ent. 5: 487.

Type-species: *Brachycryptus erythrocerus* Thomson. Desig. by Viereck, 1914.

Euthycryptus Jussel, 1907. Vorarlberger Landes-Mus., Jahresber. 44: 71.

Type-species: *Euthycryptus scrobiculifer* Jussel. Monotypic.

This is a small Holarctic genus.

frater (Cresson). Newfoundland (Labrador) s. to Va., w. to Oreg. and Calif.; Eurasia. Ecology:

Adults occur among the coarse grasses and sedges of wet meadows.

Cryptus frater Cresson, 1864. Ent. Soc. Phila., Proc. 3: 303. ♀.

Cryptus sordidus Tschek, 1870. Zool.-Bot. Gesell. Wien, Verh. 20: 409. ♀.

Brachycryptus erythrocerus Thomson, 1873. Opusc. Ent. 5: 488. ♀.

nigricoxa (Provancher). N. S. s. to w. N. C., w. to Minn.

Cryptus nigricoxus Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 361. ♂.

Brachycryptus niger Cushman, 1926. U. S. Natl. Mus., Proc. 67 (23): 7. ♂.

Genus IDIOLISPA Foerster

Idiolispa Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 188.

Type-species: *Bassus analis* Gravenhorst. Desig. by Viereck, 1914 from two species included by Tschek, 1870.

Liocryptus Thomson, 1873. Opusc. Ent. 5: 489.

Type-species: *Bassus analis* Gravenhorst. Monotypic.

Paracryptus Szepligeti, 1916. Mus. Natl. Hungarici, Ann. 14: 251.

Type-species: *Paracryptus hungaricus* Szepligeti. Monotypic.

This is a small Holarctic genus.

aestivalis Townes. Que. s. to Ga. w. to Iowa, Kans., and Tex.

Idiolispa aestivalis Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 331. ♂, ♀.

albisoleta (Walsh). Que., Maine, N. H., Va., Ont., Mich., Minn., Iowa, Ariz., n.w. N. W. T., Alaska.

Cryptus? albisoletus Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 80. ♂.

analis analis (Gravenhorst). Newfoundland (Labrador) s. to Va., w. to Yukon, e. B. C., and Colo.; Eurasia. In their tribal revision, Townes and Townes (1962) divided this

subspecies into two, with the nominate form occupying nearly the entire range of the other segregate.

Bassus analis Gravenhorst, 1807. Vergl. Uebers. Zool. Systeme, p. 266. Sex not indicated. In their tribal revision, Townes and Townes (1962) point out that the original description of *analis* does not fit the taxon for which the name has traditionally been used; lacking other evidence to indicate that Gravenhorst's original type material did not include specimens of this taxon, they selected a lectotype which preserves the traditional usage.

Ichneumon cursor Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 256; 9: 298. ♀. Preocc. by Schrank, 1780.

Cryptus elevatus Zetterstedt, 1838. Insecta Lapponica, sect. 2, p. 370. ♀.

Cryptus limatus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 298. ♀. N. syn.

Ischnus lentus Provancher, 1875. Nat. Cand. 7: 110. ♂, ♀.

analis ignea Townes. Southern Sask. s. to N. Mex., w. to S. B. C. and Calif.

Idiolispa analis ignea Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 329. ♂, ♀.

Genus TRYCHOSIS Foerster

Trychosis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 187.

Type-species: *Cryptus titillator* Gravenhorst. Included and desig. by Schmiedeknecht, 1890. The type-species is Gravenhorst's misidentification of *Ichneumon titillator* Linnaeus; the specimens which Gravenhorst identified as *titillator* are now identified as *T. mesocastana* (Tschek) (see van Rossem, 1967).

Phaedrophadnus Cameron, 1906. Bombay Nat. Hist. Soc., Jour. 17: 285.

Type-species: *Phaedrophadnus striatus* Cameron. Monotypic.

Ethemorpha Viereck, 1913. U. S. Natl. Mus., Proc. 44: 565.

Type-species: *Cryptus similis* Cresson. Monotypic and orig. desig.

Orthocryptus Viereck, 1913. U. S. Natl. Mus., Proc. 44: 567.

Type-species: *Cryptus monticola* Ashmead. Monotypic and orig. desig.

There are a few species of this moderately large genus in the Oriental Region and one known from the Neotropic Region, but *Trychosis* is otherwise Holarctic. Some of the species have been reared from spider egg cocoons, and records of rearings from Lepidoptera may be erroneous.

Revision: van Rossem, 1966. Zool. Verh. 79, 40 pp. (European spp.).

Taxonomy: van Rossem, 1965. Bul. Zool. Nomencl. 22: 259-260 (proposal for use of plenary powers). — Perkins, 1966. Bul. Zool. Nomencl. 23: 8 (comment on lack of need for use of plenary powers). — van Rossem, 1966. Bul. Zool. Nomencl. 23: 8 (rebuttal of Perkins).

— Sabrosky, 1967. Bul. Zool. Nomencl. 24: 73-74 (suggested changes for proposal of van Rossem). — International Commission on Zoological Nomenclature, 1974. Bul. Zool. Nomencl. 31: 22-23 (unnecessary use of plenary powers).

albicaligata (Walsh). Conn. s. to Va., w. to Mich., Kans., and Tex. In their tribal revision, Townes and Townes (1962) suggest that *albicaligata* may prove to be a junior synonym of *T. exulans* (Cresson).

Cryptus albicaligatus Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 82. ♂.

anagma Townes. Que. w. to B. C., s. to R. I., Ohio, S. Dak., and Calif.

Trychosis anagmus Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 376. ♂, ♀.

apicalis Townes. R. I. s. to Fla., w. to Minn.

Trychosis apicalis Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 347. ♂, ♀.

atrorubens Townes. Colo., Ariz., Nev., Calif.

Trychosis atrorubens Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 369. ♂, ♀.

coxalis Townes. R. I. s. to S. C., w. to Mich. and Ala.

Trychosis coxalis Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 346. ♂, ♀.

- cyperia** Townes. Newfoundland (Labrador) w. to w. N. W. T., s. to N. Y., Ohio, Colo., and n. Calif. Ecology: Adults occur among sedges in wet meadows.
Trychosia cyperia Townes, 1962. *In* Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 373. ♂, ♀.
- depilis** Townes. Wyo., Idaho, Utah, s. B. C., Wash., Oreg., Calif. Townes suggests that *depilis* may be only "subspecifically distinct" from the sympatric *T. reflexa* Townes.
Trychosia depilis Townes, 1962. *In* Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 368. ♂, ♀.
- exulans** (Cresson). Mass. s. to N. C., w. to Mich., Kans., and Tex. See text for *T. albicaligata*.
Cryptus exulans Cresson, 1872. Amer. Ent. Soc., Trans. 4: 157. "♂" = ♀.
- fuscata** Townes. Newfoundland (Labrador), Que., Maine.
Trychosia fuscata Townes, 1962. *In* Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 356. ♂, ♀.
- kathrynae** Townes. Que. w. to Sask., s. to N. J., W. Va., Mich. and Minn.
Trychosia kathrynae Townes, 1962. *In* Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 363. ♂, ♀.
- latidens** Townes. Que. w. to Yukon, s. to Mass., Mich., Colo., and Oreg.
Trychosia latidens Townes, 1962. *In* Townes and Townes, U. S. Natl. Mus., Bul. 216 (pt. 3): 355. ♂, ♀.
- montivaga austrina** Townes. N. Mex.
Trychosia montivaga austrina Townes, 1962. *In* Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 341. ♂, ♀.
- montivaga montivaga** (Provancher). N. S. w. to Yukon, s. to Va., Ill., Minn., and s. B. C.
Cryptus montivagus Provancher, 1877. Nat. Canad. 9: 12. ♀.
Phygadeuon fusiformis Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 51. ♀.
- nigripes** Townes. Tex.
Trychosia nigripes Townes, 1962. *In* Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 345. ♂, ♀.
- peratra** Townes, n. status. Newfoundland (insular) w. to B. C., s. to Va., Tex., and Calif.
Cryptus albitarsis Cresson, 1864. Ent. Soc. Phila., Proc. 3 (Sept.): 300. ♂. Preocc. in *Cryptus* by Cresson, 1864 (June). *T. peratra* is not sufficiently well collected to make it worthwhile proposing a new name for *C. albitarsis* in order to treat the eastern and western populations as separate subspecies. N. syn.
Trychosia albitarsis peratra Townes, 1962. *In* Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 359. ♂, ♀.
- reflexa** Townes. S. Dak., Mont., and s. B. C., s. to Utah and Calif. Townes says *reflexa* "is very close to *T. atrorubens* and is likely to prove [to be] a subspecies of it;" see also the text for *T. depilis*, above.
Trychosia reflexa Townes, 1962. *In* Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 371. ♂, ♀.
- sanderi** (Dalla Torre). Colo. Known only from the holotype.
Cryptus monticola Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 410. ♀. Preocc. by Cameron, 1885.
Cryptus Sanderi Dalla Torre, 1902. Cat. Hym., v. 3, p. 587. N. name for *monticola* Ashmead.
- semirubra** Townes. Que. w. to n.w. N. W. T., s. to R. I., Ohio, Minn., N. Mex., and Calif.
 Ecology: Has been reared from spider egg cocoons collected under rocks. Host: Eggs of drassid spider. The subspecies recognized by Townes and Townes (1962) suffer from being based upon too few specimens and, in two cases, from being based upon different characters in each sex (hind tarsal coloration in males and flagellar coloration in females). If the white banding on the female hind tarsus (contrary to the description of Townes and Townes [1962], in at least one female they placed in their nominate subspecies tarsal segments 2 through 4 are entirely white) does not correlate well with the extent of white coloration on the female flagellum, it does not seem logical to

suppose that there could be a good correlation between the coloration of the male hind tarsus and the female flagellum.

Phygadeuon annulatus Provancher, 1875. Nat. Canad. 7: 179. ♀. Preocc. by Cresson, 1864.

Trychosis semiruber Townes, 1944. Amer. Ent. Soc., Mem. 11: 254. N. name for *P. annulatus* Provancher.

Trychosis semirubra pulla Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 352. ♂, ♀. N. syn.

Trychosis semirubra arizonica Townes, 1962. In Townes and Townes, U. S. Nat. Mus. Bul. 216 (pt. 3): 354. ♂, ♀. N. syn.

similis (Cresson). N. S. s. to S. C., w. to Minn., Kans., and Tex. The two subspecies recognized by Townes and Townes (1962) were almost completely sympatric:

Cryptus similis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 299. ♀.

Trychosis similis badiarum Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 343. ♂, ♀. N. syn.

subgracilis (Cresson). P. E. I. s. to Fla., w. to Colo. and Tex. Ecology: One specimen was reared from a head of *Rudbeckia amplex.*

Cryptus subgracilis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 303. ♀.

Cryptus rufoannulatus Provancher, 1874. Nat. Canad. 6 (6): 177 (key); 6 (7): 202.

sulcata Townes, Mass. s. to N. C., w. to Mich. and Kans.

Trychosis sulcata Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 349. ♂, ♀.

SUBTRIBE CRYPTINA

Townes (1970) says that this is the dominant subtribe in the Holarctic Region. Most of the species appear to be parasites of the pupae or prepupae of Lepidoptera or Symphyta.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 158-159 (genera of world).

Genus CAMERA Townes

Camera Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 432.

Type-species: *Mesostenus euryaspis* Cameron. Orig. desig.

Except for the species which ranges into Texas, this small genus is Neotropic.

euryaspis (Cameron). Tex.; Mexico.

Mesostenus euryaspis Cameron, 1885. Biol. Cent.-Amer., Hym., v. 1, p. 226. ♀.

Genus ISCHNUS Gravenhorst

Ischnus Gravenhorst, 1829. Ichn. Europaea, v. 1, p. 638.

Type-species: *Ichneumon porrectorius* Fabricius. Desig. by Westwood, 1840. The type-species is regarded as a synonym of *I. inquisitorius inquisitorius* (Mueller).

Habrocryptus Thomson, 1873. Opusc. Ent. 5: 498.

Type-species: *Cryptus assertorius* Gravenhorst. Desig. by Viereck, 1914. The type-species is Gravenhorst's identification of *Ichneumon assertorius* Fabricius and is regarded as a synonym of *I. inquisitorius inquisitorius* (Mueller).

Aglaocryptus Cameron, 1903. Manchester Lit. and Phil. Soc., Mem. and Proc. 47 (14): 31.

Type-species: *Aglaocryptus curvimaculatus* Cameron. Desig. by Viereck, 1914.

Erythrocryptus Cameron, 1905. Invertebrata Pacifica 1: 126.

Type-species: *Erythrocryptus rufus* Cameron. Monotypic.

This moderately large genus is almost worldwide in distribution. The species are pupal parasites of Lepidoptera.

cinctipes (Walsh). Que. s. to Fla., w. to Minn. and Tex. Host: *Ancyliis comptana* (Froel.), *A. divisana* Wlk., *Paralobesia viteana* (Clem.).

Cryptus cinctipes Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 72. ♂, ♀.

Phygadeuon fraterculus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 55. ♀.

Spilocryptus polychrosidis Cushman, 1917. U. S. Natl. Mus., Proc. 53: 461. ♂, ♀.

- inquisitorius assimilis** (Uchida). Alaska; n.e. Asia. *I. inquisitorius inquisitorius* (Mueller) occurs in Europe.
Habrocyptus assimilis Uchida, 1930. Hokkaido Imp. Univ., Faculty Agr., Jour. 25: 313. ♀.
- inquisitorius atricollaris** (Walsh). N. S. s. to w. N. C., w. to Alaska and Calif. Host: *Archips argyrosipilus* (Wlk.), *Choristoneura conflictana* (Wlk.), *C. fumiferana* (Clem.), *C. rosaceana* (Harris), orange tortricid on azalea, *Malacosoma disstria* Hbn. Townes and Townes (1962) split this subspecies into three which were very arbitrarily separated and had broadly overlapping ranges.
Cryptus atricollaris Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 72. ♂, ♀.
Cryptus varius Provancher, 1874. Nat. Canad. 6 (6): 177 (key); 6 (7): 200. ♂.
Ischnus exilis Provancher, 1875. Nat. Canad. 7: 111. ♂.
Cryptus atriceps Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 361. ♀. N. syn.
Spilocyrtus neomexicana Viereck, 1903. In Skinner, Amer. Ent. Soc., Trans. 29: 81. ♂.
Erythrocyrtus rufus Cameron, 1905. Invertebrata Pacifica 1: 126. ♀. N. syn.
Gambrus venablesi Viereck, 1924. Canad. Ent. 56: 65. ♀.
Ischnus inquisitorius pectoralis Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 146. ♂, ♀. N. syn.
- laevifrons** Townes. Ariz.
Ischnus laevifrons Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 156. ♂, ♀.
- latus** (Provancher). Que., Maine, N. H., Ont., Mich., Sask., Alta.
Cryptus latus Provancher, 1874. Nat. Canad. 6 (6): 178 (key); 6 (7): 204. ♀. The holotype of this species was not located by Barron (1975); the original description seems to show that Townes and Townes (1962) were correct in removing *latus* from *Cubocephalus* where it had been placed by virtue of the incorrect synonymy of Provancher (1879).
Phygadeuon 3-annulatus Provancher, 1882. Nat. Canad. 13 (no. 155): 335 (key); 13 (no. 156): 355. ♀. Preocc. by *P. triannulatus* Gravenhorst, 1829.
Cryptus 3-annulatus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 74. ♂. Preocc. in *Ischnus* by Provancher, 1882.
Ischnus fraterculus tricoloratus Walkley, 1958. In Krombein, U. S. Dept. Agr., Agr. Monog. 2, Sup. 1, p. 46. N. name for *P. 3-annulatus* Provancher.
- Taxonomy: Provancher, 1879. Nat. Canad. 11: 69 (incorrect syn.). —Townes and Townes, 1962. U. S. Natl. Mus. Bul. 216 (pt. 3): 135-136. —Barron, 1975. Nat. Canad. 102: 494, 575.
- laurae** Townes. S. C., Fla.
Ischnus laurae Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 140. ♂, ♀.
- lautus** Townes. Southern B. C., Calif. Host: *Grapholitha molesta* (Bsk.).
Ischnus lautus Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 163. ♂, ♀.
- minor** Townes. Northern Que. w. to Alaska, s. to n. Ga., Minn., Ariz., and Calif. Host: *Epinotia aceriella* (Clem.), *Paralobesia viteana* (Clem.), *Acleris variana* (Fern.), *Choristoneura fumiferana* (Clem.).
Ischnus minor Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 159. ♂, ♀.
- pinguis** (Provancher), revised status. Que. s. to w. N. C., w. to Minn. Townes and Townes (1962) placed *pinguis* as a subspecies of *latus*; the fact that they saw "no real intergrades" between *pinguis* and *latus* leaves the status of *pinguis* in doubt because most of the *latus* specimens they studied were collected within the northern portion of the range of *pinguis*.
Phaeogenes pinguis Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 43. ♀. A lectotype was selected by Barron (1975).
- Taxonomy: Townes and Townes, 1962. U. S. Natl. Mus. Bul. 216 (pt. 3): 136-137. —Barron, 1975. Nat. Canad. 102: 531.
- politus** Townes. Colo. Ecology: Occurs in the Rocky Mountains at timberline.
Ischnus politus Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 162. ♀.

- rhomboidalis** (Walsh). Que. s. to e. Tenn., w. to N. Dak. and Colo. Host: *Laspeyresia pomonella* (L.).
Cryptus rhomboidalis Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 72. ♀.
Cryptus amblytelarius Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 70. ♀.
- sparsus** Townes. Que. s. to w. N. C., w. to Minn.
Ischnus sparsus Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 141. ♂, ♀.
- velutinus** Townes. Ariz. Ecology: Occurs in moist deciduous forests of mountains in central Ariz.
Ischnus velutinus Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 155. ♂, ♀.

Genus GLABRIDORSUM Townes

- Glabridorsum* Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 174.
 Type-species: *Gambrus stokesii* Cameron. Monotypic and orig. desig.
- The eleven species (ten undescribed) known to Townes (1970) occur between Japan and Australia.
- stokesii** (Cameron). Australia. Introduced in N. J. and Va. in 1932 and in Idaho (date unknown to me) apparently without becoming established. Host: *Grapholitha molesta* (Bsk.), *Laspeyresia pomonella* (L.). The hosts listed were the target species for introductions in North America.
Gambrus Stokesii Cameron, 1912. Linn. Soc. N. S. Wales, Proc. 37 (1): 180. ♀.
- Biology: Allen, Holloway, and Haeussler, 1940. U. S. Dept. Agr., Cir. 561: 50-51.

Genus CHROMOCRYPTUS Ashmead

- Chromocryptus* Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 41.
 Type-species: *Chromocryptus albopictus* Ashmead. Monotypic and orig. desig.
- Mesosteninomorpha* Viereck, 1913. U. S. Natl. Mus., Proc. 44: 566.
 Type-species: *Cryptus nebraskensis* Ashmead. Monotypic and orig. desig.
- Neocryptopteryx* Blanchard, 1947. Mus. Hist. Nat. Montevideo, Commun. Zool. 2 (no. 42): 1.
 Type-species: *Neocryptopteryx orientalis* Blanchard. Monotypic and orig. desig.
- Nathischinus* Porter, 1967. Studia Ent. 10: 396.
 Type-species: *Nathischinus riverai* Porter. Monotypic and orig. desig.
- Periplasma* Porter, 1967. Studia Ent. 10: 404.
 Type-species: *Periplasma tanaum* Porter. Monotypic and orig. desig.
- Townes (1970) said his reasons for regarding *Chromocryptus* as distinct from *Trachysphyrus* are not compelling. Because Townes and Townes (1962) had treated *Chromocryptus* as distinct from *Trachysphyrus* in their revision of the Nearctic Cryptini, it seems logical to do likewise here, thereby restricting the application of the name *Trachysphyrus* to Neotropical species. Except for four species which occur in the Nearctic region, *Chromocryptus* is also Neotropical; the South American species are numerous.
- Revision: Porter, 1967. Amer. Ent. Inst., Mem. 10: 1-168, in part (Neotropical spp., treated as part of genus *Trachysphyrus*).
- Taxonomy: Townes, 1970. Amer. Ent. Inst., Mem. 12: 179-181.
- mesorufus** Cushman, revised status. Fla.; Mexico. In the U. S. Natl. Mus. collection there is a female collected in a blacklight trap at Miami, Fla. In their tribal revision, Townes and Townes (1962) treated *mesorufus* as a subspecies of *planosae* (Fitch).
Chromocryptus mesorufus Cushman, 1930. U. S. Natl. Mus., Proc. 76 (25): 2. ♀.
- planosae** (Fitch). Mass., Conn., N. Y., Pa., Ohio, Mich., Ind., Ill., Nebr. Host: *Epicnaptera americana* (Harris), *Tolyte laticis* (Fitch), *T. vellea* (Stoll), *Halisidota tessellaris* (J. E. S.). Apparently, a number of adults may emerge from a single host.
Phygadeuon Planosae Fitch, 1856. N. Y. State Agr. Soc., Trans. 15: 501. ♀.
Cryptus nebraskensis Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 412. ♀.
Chromocryptus albopictus Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 41. ♀.

Agrotherentes (Itamoplex) cressoni Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 332. ♀.

Taxonomy: Porter, 1974. Fla. Ent. 57: 335.

vandykei Townes, n. status. Calif.

Chromocryptus planosae vandykei Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 258. ♀.

weemsi (Porter), n. comb. Fla.

Trachysphyrus weemsi Porter, 1974. Fla. Ent. 57: 331. ♂, ♀.

Genus JOPPIDIUM Cresson

Joppidium Cresson, 1872. Amer. Ent. Soc., Trans. 4: 160.

Type-species: *Joppidium rubriceps* Cresson. Desig. by Viereck, 1914.

Joppidium Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 69. Preocc. by Cresson, 1872.

Type-species: *Joppidium ruficeps* Walsh. Monotypic.

Joppoceras Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 39, 40.

Type-species: "*Cryptus*" *dubiosum* Cresson. Monotypic and orig. desig. The

type-species designation is an error for *Joppidium dubiosum* Cresson.

Opisoxestus Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 40.

Type-species: *Opisoxestus ferrugineus* Ashmead. Monotypic and orig. desig. The

type-species is regarded as a synonym of *J. caeruleipenne* Cameron.

Isocryptus Brethes, 1927. Ent. Mitt. 16: 308.

Type-species: *Isocryptus azureus* Brethes. Monotypic. The type-species is regarded as a synonym of *J. moerens moerens* (Perty).

This Nearctic and Neotropical genus is of moderate size.

apicale Cresson. Pa. s. to Ga., w. to Kans. and Tex.

Joppidium apicale Cresson, 1872. Amer. Ent. Soc., Trans. 4: 160. ♀.

Joppidium ruficeps Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 70. ♂, ♀.

arizonicum Townes. Ariz.

Joppidium arizonicum Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 312. ♂.

brochum brochum Townes. Okla., Tex.; Mexico.

Joppidium brochum brochum Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 309. ♂, ♀.

brochum fattigi Townes. Ky., N. C., Ga.

Joppidium brochum fattigi Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 309. ♂, ♀.

densum Townes. Ariz.; Mexico.

Joppidium densum Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 312. ♂, ♀.

discolor Townes. Ariz.

Joppidium discolor Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 313. ♂.

dubiosum Cresson. Va., S. C., Ga., Ala.; Mexico.

Joppidium dubiosum Cresson, 1873. Acad. Nat. Sci. Phila., Proc. 25: 138. ♂, ♀.

Opisoxestus (!) *ruficeps* Szepilgeti, 1916. Mus. Natl. Hungarici, Ann. 14: 240. ♂. Preocc. in *Joppidium* by Walsh, 1873.

fuscipenne (Brulle). Ariz.; Mexico.

Cryptus fuscipennis Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 189. ♀.

Joppidium donabilis Cresson, 1873. Acad. Nat. Sci. Phila., Proc. 25: 139. ♂, ♀.

Joppidium yucatanense Cameron, 1885. Biol. Cent.-Amer., Hym., v. 1, p. 211. ♀.

rubriceps Cresson. N. J. s. to Ga., w. to Mo. and Tex.

Joppidium rubriceps Cresson, 1872. Amer. Ent. Soc., Trans. 4: 160. ♂, ♀.

Genus CAENOCRYPTUS Thomson

Caenocryptus Thomson, 1873. Opusc. Ent. 5: 494.

Type-species: *Cryptus rufiventris* Gravenhorst. Desig. by Viereck, 1914.

Habrocryptoides Uchida, 1952. *Insecta Matsumurana* 18: 19.

Type-species: *Habrocryptoides shikokuensis* Uchida. Orig. desig.

Pseudischmus Walkley, 1954. *Wash. Acad. Sci., Jour.* 44: 219.

Type-species: *Ischnus oregonensis* Cushman. Monotypic and orig. desig.

The members of this moderate-sized Holarctic genus apparently parasitize sawflies and cocoon spinning Lepidoptera.

Taxonomy: Townes, 1970 (1969). *Amer. Ent. Inst., Mem.* 12: 189 (generic syn.).

erasus (Townes). Alta.

Habrocryptoides erasus Townes, 1962. *In* Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 175. ♀.

inflexus (Townes). Calif.

Habrocryptoides inflexus Townes, 1962. *In* Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 177. ♀.

lumbarius Townes. Calif.

Habrocryptoides lumbarius Townes, 1962. *In* Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 174. ♀.

luctuosus (Cresson). Que. w. to s. Yukon, s. to N. Y., S. Dak., Colo., Calif. Host: *Trichiosoma triangulum* Kirby, *Zaraea inflata* Nort., sawfly on *Tsuga heterophylla*. *C. luctuosus atrifemur* (Townes) occurs in Japan and *C. luctuosus holarpinus* (Heinrich) occurs in Europe. In the tribal revision of Townes and Townes (1962), the latter was treated as a synonym of *Cryptus luctuosus subquadratus* Thomson. A bizarre situation developed when van Rossem (1969) treated *holarpinus* as an alpine subspecies of *Cryptus luctuosus* distinct from *luctuosus subquadratus*, followed by Townes (1970) treatment of *subquadratus* as a species not congeneric with *luctuosus holarpinus*; Townes (1970) placed *subquadratus* in *Itamoplex* (= *Cryptus*), while placing *luctuosus* and its subspecies in *Caenocryptus*. Both van Rossem (1969) and Townes (1970) had studied the lectotype of *Cryptus subquadratus*.

Cryptus luctuosus Cresson, 1864. *Ent. Soc. Phila., Proc.* 3: 290. ♀.

Agrothereutes (Itamoplex) ebenus Viereck, 1917 (1916). *Conn. State Geol. and Nat. Hist. Survey Bul.* 22: 333. ♀.

Cryptus caligatus Cushman, 1927. U. S. Natl. Mus., *Proc.* 72 (13): 2. ♀.

Taxonomy: van Rossem, 1969. *Tijdschr. v. Ent.* 112: 364-366. — Townes, 1970. *Amer. Ent. Inst., Mem.* 12: 190.

nitens (Townes). Calif.

Habrocryptoides nitens Townes, 1962. *In* Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 176. ♀.

oregonensis (Cushman). S. Dak., Wyo., Idaho, B. C., Wash., Oreg., Calif. Host: *Neodiprion tsugae* Midd.

Ischnus oregonensis Cushman, 1939. *Wash. Acad. Sci., Jour.* 29: 392. ♂, ♀.

Habrocryptoides oregonensis coxalis Townes, 1962. *In* Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 167. ♀. N. syn. Described from a single female.

pictus Townes. Ariz.

Habrocryptoides pictus Townes, 1962. *In* Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 173. ♂.

rufifrons (Walsh). R. I. s. to s. Fla., w. to Mich., Kans., and Tex.

Cryptus rufifrons Walsh, 1873. *Acad. Sci. St. Louis, Trans.* 3: 75. ♀.

virgeus ardalus (Townes). Colo., Ariz. Ecology: Occurs in relatively moist deciduous forests.

Habrocryptoides virgeus ardalus Townes, 1962. *In* Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 172. ♂, ♀.

virgeus virgeus (Townes). Mass. s. to S. C., w. to Wis. Host: *Harrisina americana* (G.-M.), *Laspeyresia pomonella* (L.)?

Habrocryptoides virgeus virgeus Townes, 1962. *In* Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 171. ♂, ♀.

Genus LANUGO Townes

Lanugo Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 259.

Type-species: *Cryptus retentor* Brulle. Orig. design.

This small genus is Nearctic and Neotropic. The type-species has been reared from cocoons of Megalopygidae.

bicineta Townes. Kans.

Lanugo bicineta Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 270. ♀.

brunnipennis Townes. Southern B. C., Wash., Calif.

Lanugo Brunnipennis Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 275. ♂, ♀.

cestus (Say). Southern Indiana, Tenn.

Cryptus cestus Say, 1836. Boston Jour. Nat. Hist. 1: 234. ♀.

deserti Townes. Utah, Ariz., Calif. Ecology: One specimen was apparently reared as a secondary parasite of a sawfly on *Pinus*.

Lanugo deserti Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 268. ♂, ♀.

excincta Townes. Northwestern Kans., Colo., N. Mex., Utah, Ariz.

Lanugo excincta Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 272. ♂, ♀.

ferrugata Townes. Tex.

Lanugo ferrugata Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 263. ♂, ♀.

flavipennis Townes. Ariz.

Lanugo flavipennis Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 271. ♂, ♀.

longurius Townes. Ariz.

Lanugo longurius Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 269. ♀.

picta Townes. Tex., Ariz.; Mexico.

Lanugo picta Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 266. ♂, ♀.

polita Townes. Ariz.

Lanugo polita Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 271. ♀.

retentor (Brulle). Va. s. to Fla., w. to Ind. and Tex. Host: *Lagoa pyridifera* (J. E. S.), *Megalopyge opercularis* (J. E. S.).

Cryptus retentor Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 192. ♀.

Cryptus comalensis Cresson, 1872. Amer. Ent. Soc., Trans. 4: 159. ♀.

Cryptus nigripennis Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 411. ♀.

schlingeri Townes. Calif.

Lanugo schlingeri Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 262. ♀.

sororia (Cresson). Tex., Ariz., Calif.; Mexico.

Cryptus sororius Cresson, 1872. Amer. Ent. Soc., Trans. 4: 159. ♂.

Genus BUATHRA Cameron

Buathra Cameron, 1903. Ent. Soc. London, Trans. 51: 233.

Type-species: *Buathra rufiventris* Cameron. Monotypic.

Bathycrisis Cameron, 1905. Spolia Zeylanica (Ceylon Jour. Sci., Sect. B) 3: 96.

Type-species: *Bathycrisis striaticollis* Cameron. Monotypic.

This is a Holarctic and Oriental genus of small or moderate size. According to van Rossem (1971) the separation between *Buathra* and *Meringopus* is rather difficult and arbitrary; he believed that *Buathra* could be merged into *Meringopus*.

- Revision: van Rossem, 1971. Tijdschr. v. Ent. 114: 201-208 (European spp.).
- Taxonomy: van Rossem, 1969. Tijdschr. v. Ent. 112: 167, 169 (fig. and key to distinguish from *Meringopus*). — Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 192-193 (referred additional spp. to genus). — Townes, 1971. Amer. Ent. Inst., Mem. 17: 239 (syn. corrected).
- crassifemur** (Pratt). Idaho, s. B. C., Wash., Oreg., Calif.
Cryptus crassifemur Pratt, 1945. Amer. Midland Nat. 34: 582. ♂, ♀.
- dorsicarinata** (Pratt). Alta. s. to Colo. and Ariz., w. to Alaska and Calif.
Cryptus dorsicarinatus Pratt, 1945. Amer. Midland Nat. 34: 612. ♂, ♀.
- laborator** (Thunberg). Greenland; Newfoundland (Labrador) w. to Alaska, s. to N. Y., Wis., S. Dak., N. Mex., and Calif.; n. Eurasia. Host: *Melanophia imitata* (Wlk.). The description of *laborator* given by van Rossem (1971) shows that *Cryptus altonii* Dalla Torre should be suppressed as a synonym rather than being recognized as a subspecies of *laborator* on the basis of the distinguishing characters used in the tribal revision of Townes and Townes (1962).
Ichneumon laborator Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 273 (key); 9: 344. [male].
Cryptus fabricii Schiodte, 1857. In Rink, Gronland Geog. og Statist. Beskrevet, v. 2, pt. 3, p. 62. ♂, ♀. Placed as a synonym by van Rossem (1971).
Cryptus proximus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 290. ♀. Preocc. by Fonscolombe, 1850. N. syn.
Cryptus fulvipes Magretti, 1884. Soc. Ent. Ital., Bol. 16: 99. ♂.
Cryptus Altonii Dalla Torre, 1902. Cat. Hym., v. 3, p. 560. N. name for *C. proximus* Cresson.
Cryptus? sachalinensis Matsumura, 1911. Tohoku Imp. Univ., Col. Agr., Jour. 4 (1): 95. ♀.
Cryptus tarsoleucus var. *tagaii* Uchida, 1930. Hokkaido Imp. Univ., Faculty Agr., Jour. 25: 306. ♂.
Trachysphyrus laborator satoi Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 209. ♀. N. syn. Described from a single specimen from Korea.
- Taxonomy: Townes, Momoi, and Townes, 1965. Amer. Ent. Inst., Mem. 5: 180-181 (syn.).
- lochmaia** (Townes). Ariz. Ecology: Occurs in chaparral areas.
Trachysphyrus lochmaeus Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 216. ♂, ♀.
- perplexa** (Cresson), revised status. Idaho, w. Nev., s. B. C., Wash., Oreg., Calif. Townes and Townes (1962) treated *perplexa* as a subspecies of *laborator*. In one paragraph they stated that "intergrades between [*perplexa*] ... and *altonii* [now a syn. of *laborator*] are moderately common where the ranges of the two are adjacent or overlap." In a subsequent paragraph they stated that *perplexa* "intergrades with the subspecies *altonii* rather freely in western Idaho and near the crest of the Sierra Nevada." The kinds of localities from which they record both taxa lead me to believe that the specimens they regarded as intergrades actually were not.
Cryptus proximus var.? *perplexus* Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 359. ♀.
- Taxonomy: Townes and Townes, 1962. U. S. Natl. Mus. Bul. 216 (pt. 3): 213-214.
- strigosa** (Pratt). Wash., Oreg., Calif.
Cryptus strigosus Pratt, 1945. Amer. Midland Nat. 34: 583. ♂, ♀.

Genus CRYPTUS Fabricius

Cryptus Fabricius, 1804. Systema Piezatorum, p. 70. Preocc. by Jurine, 1801 and Panzer, 1804.

Type-species: *Cryptus viduatorius* Fabricius. Desig. by Curtis, 1837.

Eucryptus Haldeman, 1842. Acad. Nat. Sci. Phila., Proc. 1: 191. N. name for *Cryptus* "(Hal.)," presumably Haliday. Haliday (1839) used the name *Cryptus* for Ichneumonidae in a paper describing insects whose names had been published as *nomina nuda* by Curtis (1837), who used the abbreviation "Hal." for Haliday and suppressed "*Cryptus* B. E." as a synonym of the sawfly name *Scizocerus* and used *Cryptus* "[Fabricius]" for Ichneumonidae.

Itamoplex Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 188.

Type-species: *Cryptus americanus* Cresson. Desig. by Viereck, 1914 from three species included by Ashmead, 1900.

Plesiocryptus Cameron, 1903. Ztschr. f. System. Hym. Dipt. 3: 299.

Type-species: *Plesiocryptus carinifrons* Cameron. Monotypic.

This large genus is Holarctic, Oriental, and Ethiopian. The controversy regarding the name *Cryptus* remains unsettled. Even if Opinion 135 (see Hemming, 1939) were valid, *Cryptus* Fabricius (1804) would still be preoccupied by *Cryptus* Panzer (1804) (a subjective synonym of *Arge*), and *Eucryptus* Haldeman may be a valid replacement name for *Cryptus* Fabricius. Hemming's (1945) conclusion that "suspension [of the Rules] would not be essential in the case of *Cryptus* Panzer [1804]" is incorrect because Panzer's fascicle 88 (1804) of Fauna Insectorum Germanicae is shown to predate Fabricius's Systema Piezatorum by virtue of the fact that the former is cited on page 35 of the latter. *Cryptus* is used here because I feel that it is virtually certain that the majority of specialists presently studying Ichneumonidae would choose to suppress *Cryptus* Jurine (1801), *Cryptus* Panzer (1804), and *Eucryptus* Haldeman (if the latter is valid).

Revision: Pratt, 1945. Amer. Midland Nat. 34: 562-661. — van Rossem, 1969. Tijdschr. v. Ent. 112: 229-375 (western Palearctic spp.).

Taxonomy: Jurine, 1801. In Panzer, Intell. Blatt. Litt.-Ztg. Erlangen 21: 163. — Panzer, 1804. Fauna Ins. German. fasc. 88, pl. 17. — Curtis, 1837. Guide Arrang. Brit. Ins., ed. 2, columns 81-115. — Haliday, 1839 (1838). Ann. Nat. Hist. 2: 114-116. — Hemming, 1939; 1945.

Internatl. Comn. Zool. Nomencl., Opinions and Declarations Rendered 2: 7-12 (Opinion 135); 2: 256 (Opinion 157).

albitarsis (Cresson). Newfoundland (Labrador) w. to w. N. W. T., s. to S. C., Ala., Tex., and Calif.; Mexico, Costa Rica. Host: *Heliothis zea* (Bod.), *Macronoctua onusta* Grt., *Grapholitha molesta* (Bsk.), *Psorosina hammondi* (Riley), *Tetralopha robustella* Zell. According to van Rossem (1969), *albitarsis* may be conspecific with the Eurasian *C. dianae* Gravenhorst.

Ichneumon vinctus Say, 1829. Contrib. Maclurian Lyceum to Arts and Sci. 1: 70. ♂. Preocc. by Schrank, 1781.

Ischnus albitarsis Cresson, 1864. Ent. Soc. Phila., Proc. 3 (June): 194. ♂.

Cryptus americanus Cresson, 1864. Ent. Soc. Phila., Proc. 3 (Sept.): 297. ♀.

Cryptus nigricaleceatus Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 77. ♂.

Cryptus nigricornis Provancher, 1874. Nat. Canad. 6 (6): 177 (key); 6 (7): 201. ♂. Preocc. by Brulle, 1846.

Nematopodius coratus Provancher, 1875. Nat. Canad. 7: 269. ♂.

Hoplismenus impar Provancher, 1879. Nat. Canad. 11: 3. "♂" = ♀.

Cryptus bicolor Smith, 1879. Descr. New Spp. Hym. in Coll. Brit. Mus., p. 231. ♀. Preocc. by Lucas, 1846. N. syn.

Cryptus monticola Cameron, 1885. Biol. Cent.-Amer., Hym., v. 1, p. 203. ♀. Preocc. by Wesmael, 1840. N. syn.

Cryptus argentifrons Cameron, 1885. Biol. Cent.-Amer., Hym., v. 1, p. 204. ♂. N. syn.

Cryptus coloradensis Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 408. ♀. N. syn.

Spilocryptus canarsiae Ashmead, 1898. Ent. Soc. Wash., Proc. 4: 124. ♂.

Cryptus Eggeri Dalla Torre, 1902. Cat. Hym., v. 3, p. 569. N. name for *bicolor* Smith. N. syn.

Cryptus perneri Dalla Torre, 1902. Cat. Hym., v. 3, p. 585. N. name for *nigricornis* Provancher.

Cryptus consobrinus Viereck, 1906. Amer. Ent. Soc., Trans. 32: 225. ♀. N. syn.

Cryptus inornatus Pratt, 1945. Amer. Midland Nat. 34: 612. ♀. N. syn.

Taxonomy: van Rossem, 1969. Tijdschr. v. Ent. 112: 333, 336.

arcticus Schiodte. Greenland, n.e. N. W. T., Alaska, B. C., Calif.; Europe?

Cryptus arcticus Schiodte, 1857. In Rink, Gronland Geog. og Statist. Beskrivet, v. 2, pt. 3, p. 57. ♂, ♀.

Cryptus lutescens Tschek, 1872. Zool.-Bot. Gesell. Wien, Verh. 22: 234. ♀.

- Taxonomy: Mason, 1968. *Canad. Ent.* 100: 17, 18 (fig. and differences from *leechi* Mason).
 —van Rosseem, 1969. *Tijdschr. v. Ent.* 112: 368 (syn.).
- aridus** Pratt. Colo., B. C., Idaho, Oreg., Calif.
Cryptus aridus Pratt, 1945. *Amer. Midland Nat.* 34: 618. ♀.
- crassulus** Pratt. Que., Mich.
Cryptus crassulus Pratt, 1945. *Amer. Midland Nat.* 34: 586. ♀.
- krombeini** (Townes). W. Va.
Trachysphyrus krombeini Townes, 1962. *In* Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 243. ♀.
- latigenalis** Pratt. Mont., Colo. Host: *Lorostege sticticalis* (L.).
Cryptus latigenalis Pratt, 1945. *Amer. Midland Nat.* 34: 611. ♀.
- Biology: Ulyett, 1949; 1950. *Canad. Ent.* 81: 285-299; 82: 1-11 (misidentified as *inornatus* Pratt).
- leechi** Mason. Northeastern N. W. T.; n. Greenland.
Cryptus leechi Mason, 1968. *Canad. Ent.* 100: 17. ♂, ♀.
- mentigus** Townes. Colo., N. Mex., Ariz., Alaska, Yukon, Wash., Oreg., Calif.
Trachysphyrus mentigus mentigus Townes, 1962. *In* Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 234. ♂, ♀. Described from eight specimens from two localities in Arizona.
Trachysphyrus mentigus rufator Townes, 1962. *In* Townes and Townes, U. S. Natl. Mus., Bul. 216 (pt. 3): 235. ♀. Described from one specimen from California. N. syn.
Trachysphyrus mentigus rhodomerus Townes, 1962. *In* Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 235. ♂, ♀. Because this form had by far the largest range (including Ariz. and Calif.) of the three forms of *mentigus* described by Townes it seems unusual that he did not make it the nominate form. N. syn.
- minimus** Pratt. Sask. s. to N. Mex., w. to Alta., e. Wash., e. Oreg., and Nev.
Cryptus minimus Pratt, 1945. *Amer. Midland Nat.* 34: 619. ♀.
- moschator iroquois** (Viereck). Que. s. to N. J., w. to Mich. and Ohio. *C. moschator moschator* (Fabricius) is European.
Agrothereutes (Itamopler) iroquois Viereck, 1917 (1916). *Conn. State Geol. and Nat. Hist. Survey Bul.* 22: 333. ♀.
- mutatus** Pratt, revised status. Western Minn., e. S. Dak., Colo., s. Alta., Idaho, s. B. C., Wash., Oreg., Calif. In their tribal revision, Townes and Townes (1962) treated *mutatus* as one of three sympatric western subspecies of *albitarsis* (Cresson).
Cryptus curticaudus Pratt, 1945. *Amer. Midland Nat.* 34: 627. ♀.
Cryptus mutatus Pratt, 1945. *Amer. Midland Nat.* 34: 634. ♂, ♀.
- ocellaris** Pratt, revised status. Western Nev., Oreg., Calif. In the tribal revision of Townes and Townes (1962), *ocellaris* was treated as a sympatric subspecies of *aridus* Pratt. Because these authors said that they had not seen any intergrades between the two taxa, *ocellaris* is here treated as a distinct species instead of being suppressed as a synonym of *aridus*.
Cryptus ocellaris Pratt, 1945. *Amer. Midland Nat.* 34: 617. ♀.
- persimilis** Cresson. N. S. w. to S. B. C., s. to S. C., Tex., s. Ariz., and s. Calif.
Cryptus persimilis Cresson, 1864. *Ent. Soc. Phila., Proc.* 3: 298. ♀.
Cryptus picticoxus Walsh, 1873. *Acad. Sci. St. Louis, Trans.* 3: 82. ♂.
Cryptus citrinimaculatus Viereck, 1905. *Kans. Acad. Sci., Trans.* 19: 320. ♂.
Cryptus associatus Pratt, 1945. *Amer. Midland Nat.* 34: 633. ♀.
- recurvatus** Pratt. Tex., Ariz., Calif.; Mexico.
Cryptus recurvatus Pratt, 1945. *Amer. Midland Nat.* 34: 616. ♀.
- rufovinctus** Pratt, revised status. Idaho, Utah, Nev., s. B. C., Wash., Oreg., Calif. Host: *Synanthedon bibionipennis* (Bdv.), *S. exitiosa* (Say), *Etiella zinckenella* (Treit.), *Autoplusia egea* (Gn.), *Trichoplusia ni* (Hbn.). In the tribal revision of Townes and Townes (1962), *rufovinctus* was treated as one of three sympatric western subspecies of *albitarsis* (Cresson).
Cryptus rufovinctus Pratt, 1945. *Amer. Midland Nat.* 34: 620. ♂, ♀.

rugifrons (Townes). Ariz., Calif.

Trachysphyrus rugifrons Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 255. ♂, ♀.

ruralis Pratt. Southern Man., s. Sask, n. Colo., s. Alta., Ida., s. B. C.

Cryptus ruralis Pratt, 1945. Amer. Midland Nat. 34: 637. ♀.

scapulatus (Townes). Calif.

Trachysphyrus scapulatus Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 241. ♂, ♀.

sodalis rugosiscutum Pratt. Southern Oreg., Calif.

Cryptus rugosiscutum Pratt, 1945. Amer. Midland Nat. 34: 572. ♀.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 194.

sodalis sodalis Cameron. Tex., Colo., N. Mex., Ariz.; Mexico.

Cryptus sodalis Cameron, 1885. Biol. Cent.-Amer., Hym., v. 1, p. 204. [female].

Cryptus crassisculptus Pratt, 1945. Amer. Midland Nat. 34: 573. ♂, ♀. N. syn.

Cryptus flagellatus Pratt, 1945. Amer. Midland Nat. 34: 574. ♀. N. syn.

Trachysphyrus rugosiscutum binarius Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 226. ♀.

Taxonomy: Townes and Townes, 1966. Amer. Ent. Inst., Mem. 8: 70, 73. —Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 194.

Genus XYLOPHRURUS Foerster

Xylophrurus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 169.

Type-species: *Echthrus lancifer* Gravenhorst. By subsequent monotypy from inclusion by Schmiedeknecht, 1888. The name of the type-species has been incorrectly suppressed as a synonym of *Ichneumon dispar* Thunberg; the latter is preocc. by Gmelin, 1790.

Nyxeophilus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 187.

Type-species: *Cryptus bimaculatus* Gravenhorst. Included and desig. by Thomson (1885). In placing species in *Nyxeophilus*, Thomson (1885) said "*Nyxeophilus mihi*," and Thomson (1897) said "*Nyxeophilus* Thomson," which led Perkins (1962)

to treat *Nyxeophilus* Thomson as a proposal of a new genus, and this seems inconsistent with his p. 387 discussion of Thomson's use of the Foerster names. The type-species is regarded as a synonym of *X. angustus* (Dalman).

Macrocryptus Thomson, 1873. Opusc. Ent. 5: 486.

Type-species: *Echthrus lancifer* Gravenhorst. Monotypic.

Xylophruridea Viereck, 1912. U. S. Natl. Mus., Proc. 42: 646.

Type-species: *Xylophruridea agrili* Viereck. Monotypic and orig. desig.

Revision: Cushman, 1919. U. S. Natl. Mus., Proc. 55: 536-540 (as *Cryptoideus*).

Taxonomy: Thomson, 1885. Soc. Ent. France, Ann. (6) 5: 18. —Thomson, 1897. Opusc. Ent. 11: 2363. —Perkins, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 11: 387, 439.

agrili (Viereck). Ont., W. Va., Mich., Kans. Host: *Agrilus horni* Kerr., *A. vittaticollis* Rand.

Both of these hosts are root borers and pupate a short distance above the ground in the stems of their hosts.

Xylophruridea agrili Viereck, 1912. U. S. Natl. Mus., Proc. 42: 646. ♀.

Biology: Brooks, 1914. Jour. Agr. Res. 3: 184. —Brooks, 1923. U. S. Dept. Agr., Bur. Ent., Monthly Let. 108: 3. —Carlson, 1969. Amer. Ent. Inst., Contrib. 4 (3): 39.

bicolor bicolor (Cushman). Colo., Alta., Idaho, Alaska, B. C. Host: *Oberea* sp. on *Salix*, *Saperda moesta* LeC. The type locality is Fort Collins, Colo. (Holotype collected in May, [1896?]) by C. F. Baker).

Cryptoideus bicolor Cushman, 1919. U. S. Natl. Mus., Proc. 55: 537. ♀.

bicolor maurus Townes. Que., Ont., Mich., Man. Host: *Agrilus horni* Kerr.

Xylophrurus bicolor maurus Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 483. ♂, ♀.

Biology: Carlson, 1969. Amer. Ent. Inst., Contrib. 4 (3): 39.

fasciatus fasciatus (Ashmead). Que., N. Y., Pa., Md., Mich., Tex. Host: *Agrilus corylicola*

Fisher, A. *horni* Kerr.

Brachycentrus fasciatus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 413. ♀.

Cryptodeus rufus Cushman, 1919. U. S. Natl. Mus., Proc. 55: 538. ♀.

fasciatus hesperus Townes. Colo., Ariz., Calif. Host: *Agrilus angelicus* Horn.

Xylophrurus fasciatus hesperus Townes, 1962. In Townes and Townes, U. S. Natl. Mus.

Bul. 216 (pt. 3): 481. ♂, ♀.

nubilipennis abdominalis Townes. Sask., Utah, B. C.

Xylophrurus nubilipennis abdominalis Townes, 1962. In Townes and Townes, U. S. Natl.

Mus. Bul. 216 (pt. 3): 484. ♂, ♀.

nubilipennis luctuosus (Provancher). Que., N. H., Conn., N. Y., W. Va., Fla., Ont., Mich. Host:

Agrilus champlaini Frost, *Oberea praelonga* Casey, *Saperda candida* F., borer in *Populus*.

Mesochorus luctuosus Provancher, 1874. Nat. Canad. 6: 299. ♀.

Cryptodeus anthracinus Cushman, 1924. U. S. Natl. Mus., Proc. 64 (4): 7. ♀.

nubilipennis nubilipennis (Cresson). Colo. Host: *Dicercia divaricata* (Say).

Cryptus nubilipennis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 291. ♀.

sitkensis (Ashmead). Alaska, B. C., Wash., Oreg., Calif.

Cryptodeus sitkensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 193. ♀.

Xylophrurus atroruber Townes, 1944. Amer. Ent. Soc., Mem. 11: 290. ♀. Validated as a

"new name" for *Cryptodeus purpuripennis* "Ashmead" (1900) and "Cushman" (1919), misidentifications of *Cryptus purpuripennis* Cresson (see discussion under *Cryptodeus* Ashmead).

Taxonomy: Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 42 (validation of name *Cryptodeus* and misidentification of its type-species). —Cushman, 1919. U. S. Natl. Mus., Proc. 55: 539 (redescription of specimen misidentified as *purpuripennis* [Cresson] by Ashmead under the assumption that Ashmead's identification had been correct).

Genus REPTATRIX Townes

Reptatrix Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 276.

Type-species: *Cryptus crassipes* Pratt. Monotypic and orig. desig.

A single species is known.

crassipes (Pratt). Wyo., Idaho, Utah, Wash., Oreg., Calif.

Cryptus crassipes Pratt, 1945. Amer. Midland Nat. 34: 585. ♀.

Genus MERINGOPUS Foerster

Meringopus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 186.

Type-species: *Cryptus recreator* Fabricius. By subsequent monotypy from inclusion by Tschek, 1870. The type-species is regarded as a synonym of *M. titillator* (Linnaeus).

Goniocryptus Thomson, 1973. Opusc. Ent. 5: 490.

Type-species: *Ichneumon titillator* Linnaeus. Desig. by Viereck, 1914.

This Holarctic genus is of moderate size.

Revision: van Rossem, 1969. Tijdschr. v. Ent. 112: 165-199 (European spp. plus some Asian ones).

Taxonomy: Townes, 1970. (1969). Amer. Ent. Inst., Mem. 12: 201-202 (list of Nearctic spp.).

asymmetricus asymmetricus (Pratt). Sask. w. to B. C., s. to Colo., n. Ariz., and n. Calif.

Cryptus asymmetricus Pratt, 1945. Amer. Midland Nat. 34: 587. ♂, ♀.

asymmetricus mirabilis (Pratt). Southern Calif.

Cryptus mirabilis Pratt, 1945. Amer. Midland Nat. 34: 589. ♀.

calescens robustus (Cresson). Northern Man. w. to Alaska, s. to n. N. Mex., Utah, and n. Calif.

Ecology: Occurs near timberline in grassy areas with scattered conifers. *M. c. calescens*

- (Gravenhorst) occurs in Europe and part of Asia and *M. c. alaicus* (Townes) occurs in Tadzhik S. S. R. and Kirgiz S. S. R., U. S. S. R.
Cryptus robustus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 289. ♀.
Cryptus crassicornis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 292. ♂.
- dirus** (Cresson). Southern B. C. s. to Calif., e. to Idaho., Colo., and Ariz.
Cryptus dirus Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 359. ♀.
- fasciatus** (Townes). Ariz.
Trachysphyrus fasciatus Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 188. ♂, ♀.
- genatus** (Pratt). Southern Sask. and s. Alta., s. to N. Mex., Ariz., Nev. and n. Calif. Host: *Malacosoma californicum fragile* (Stretch), *M. dissitia* Hbn.
Cryptus genatus Pratt, 1945. Amer. Midland Nat. 34: 570. ♂, ♀.
- nigerrimus murorum** (Tschek). Northern Man., Calif.; n. Europe. *M. nigerrimus nigerrimus* (Fonscolombe) is known from southern Europe and central Asia.
Cryptus murorum Tschek, 1872. Zool.-Bot. Gesell. Wien, Verh. 22: 234. ♂, ♀.
Cryptus serratus Thomson, 1873. Opusc. Ent. 5: 478. ♀.
- Taxonomy: van Rossem, 1969. Tijdschr. v. Ent. 112: 190, 191-193.
- pacificus** (Cresson). Southern B. C., Oreg., Calif.
Cryptus pacificus Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 361. ♂.
- punicus** (Cresson), revised status. Southern B. C., Wash., Oreg., Calif. The discussion in the tribal revision of Townes and Townes (1962) indicates that there was not sufficient evidence to treat *punicus* as a subspecies or synonym of *relativus*.
Cryptus punicus Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 364. ♀.
Cryptus californicus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 411. ♀.
- relativus** (Cresson). Southern Alta. s. to N. Mex., w. to s. B. C. and Calif. Host: *Sesia tibialis* (Harris). This taxon was divided into two sympatric subspecies in the tribal revision of Townes and Townes (1962); intermediate specimens which I have seen among the material they studied contradict their discussion and indicate the need for placing *Cryptus nitschei* Dalla Torre as a synonym of *relativus* rather than giving it species status.
Cryptus relaticus Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 359. ♀.
Cryptus pictifrons Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 360. ♂.
Cryptus violaceipennis Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 408. ♂, ♀. Preocc. by Brulle, 1846. N. syn.
Cryptus leucopus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 409. ♂. Apparently preocc. in *Cryptus* by *Ichneumon leucopus* Gmelin, 1790. *I. leucopus* Gmelin was placed as a synonym of *Cryptus tarsoleucus* (Schränk) by Gravenhorst (1829), and Townes (1970) placed *tarsoleucus* in *Itamoplex* (= *Cryptus*). Neither *tarsoleucus* nor *I. leucopus* Gmelin was mentioned by van Rossem (1969) in his revision of the European species of *Cryptus*. N. syn.
Cryptus Nitschei Dalla Torre, 1902. Cat. Hym., v. 3, p. 581. N. name for *C. violaceipennis* Ashmead. N. syn.
Cryptus eleucopus Walkley, 1958. In Krombein et al., U. S. Dept. Agr., Agr. Monog. 2, sup. 1, p. 46. N. name for *C. leucopus* Ashmead. N. syn.
- Taxonomy: Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 449.—Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 192.
- serraticaudus** (Pratt). Colo., Idaho, Utah., s. B. C., Wash., Oreg., Calif.
Cryptus serraticaudus Pratt, 1945. Amer. Midland Nat. 34: 594. ♂, ♀.
- symmetricus bilobatus** (Pratt). Northern Calif.
Cryptus bilobatus Pratt, 1945. Amer. Midland Nat. 34: 592. ♀.
- symmetricus symmetricus** (Pratt). Colo., s. Alta., Utah, s. B. C.
Cryptus symmetricus Pratt, 1945. Amer. Midland Nat. 34: 590. ♂, ♀.
- tejonensis** (Cresson). Alta. s. to N. Mex., w. to Alaska and Calif. In the tribal revision of Townes and Townes (1962) two subspecies with broadly overlapping ranges were recognized.
Cryptus tejonensis Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 360. ♀.

Cryptus rufopedibus Pratt, 1945. Amer. Midland Nat. 34: 597. ♀. Name invalid; dative grammatical case.

Cryptus mimicus Pratt, 1945. Amer. Midland Nat. 34: 607. ♂, ♀. N. syn.

Cryptus temporalis Pratt, 1945. Amer. Midland Nat. 34: 609. ♂, ♀. N. syn.

Cryptus rugulosus Pratt, 1945. Amer. Midland Nat. 34: 615. ♀. N. syn.

vancouverensis (Harrington). Southwestern B. C., w. Oreg., w. Calif. Host: *Malacosoma* sp.

Cryptus vancouverensis Harrington, 1894. Canad. Ent. 26: 211. ♀.

Genus COMPSOCRYPTUS Ashmead

Cryptoideus Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 42.

Type-species: *Cryptus purpuripennis* Cresson. Monotypic and orig. design. The type-species was misidentified by Ashmead; the specimen Ashmead misidentified as *purpuripennis* is the holotype of *Xylophrurus atroruber* Townes (= *X. sitkensis* [Ashmead]).

Compsocryptus Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 43.

Type-species: *Cryptus calipterus* Say. Monotypic and orig. design.

Callicryptus Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 43.

Type-species: *Cryptus fasciatus* (!) Brulle. Monotypic and orig. design. Dalla Torre (1902) regarded the type-species citation as a typographical error for *C. fusco-fasciatus* Brulle, while Viereck (1914) regarded it as a lapsus for *C. fasciipennis* Brulle. It seems that Viereck is probably correct, but both *fuscofasciatus* and *fasciipennis* are presently placed in *Compsocryptus*.

Stictocryptus Cameron, 1908. Amer. Ent. Soc., Trans. 34: 243. Preocc. by Cameron, 1907.

Type-species: *Cryptus fasciipennis* Brulle. Monotypic and orig. design. Cameron made the type-species designation as *Cryptus "fasciatipennis"* Brulle, which is certainly a lapsus for *fasciipennis*.

Sophocryptus Mallo, 1961. Idia 165: 17. Nomen nudum.

This moderate sized genus is Nearctic and Neotropic.

Taxonomy: Dalla Torre, 1902. Cat. Hym., v. 3, p. 556. — Viereck, 1914. U. S. Natl. Mus., Bul. 83: 25.

apicalis Townes. Northwestern B. C. s. to Calif., e. to Idaho, Colo., and N. Mex.

Compsocryptus apicalis Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 291. ♂, ♀.

aridus Townes. Wyo., Colo., Idaho, Utah, Ariz., Nev., Calif.

Compsocryptus aridus Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 289. ♂, ♀.

buccatus (Cresson). Tex.; Mexico.

Cryptus buccatus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 159. ♂, ♀.

calipterus (Say). Northwestern Okla., Tex., N. Mex., Ariz., Calif.; Mexico. In their tribal revision, Townes and Townes (1962) treated the majority of specimens from Calif. as subspecifically distinct, but because the differences seem to be more or less clinal the subspecies are not recognized here.

Cryptus calipterus Say, 1836. Boston Jour. Nat. Hist. 1: 234. ♀.

Cryptus fulvus Taschenberg, 1876. Ztschr. f. Gesam. Naturw. 48: 66. ♂.

Ichneumon minus Cameron, 1885. Biol. Cent.-Amer., Hym., v. 1, p. 159. ♂.

Compsocryptus (!) *brevicornis* Cameron, 1905. Invertebrata Pacifica 1: 127. ♀.

Cryptus (*Mansa*?) *politicalypterus* Viereck, 1905. Kans. Acad. Sci., Trans. 19: 293. ♂.

crotchii (Cresson). Calif.

Cryptus crotchii Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 362. ♂, ♀.

fasciipennis (Brulle). Southern Fla.; Cuba.

Cryptus fasciipennis Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 191. ♂, ♀.

fletcheri (Provancher). Western Idaho, n. Utah, s. B. C., Oreg., n. Calif. *C. fletcheri* may not be distinct from *C. turbatus* (Cresson) (see Townes and Townes (1962)).

Cryptus Fletcheri Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 361. ♀.

Taxonomy: Townes and Townes, 1962. U. S. Natl. Mus. Bul. 216 (pt. 3): 298.

pallens Townes. Idaho, Utah, Oreg., Calif.

Compsocryptus pallens Townes, 1962. *In* Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 293. ♂, ♀.

purpuripennis (Cresson). Western Idaho, n. Utah, s. B. C., Wash., Oreg., Calif.

Cryptus purpuripennis Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 364. ♀.

resolutus (Cresson). Southern Alta. s. to Colo., w. to Wash. and Calif.

Cryptus resolutus Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 363. ♂.

Cryptus Edwardii Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 363. ♀.

Compsocryptus resolutus subfasciatus Townes, 1962. *In* Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 303. ♂, ♀. Overlapped and intergraded with more than half of the Calif. population Townes and Townes treated as the nominate subspecies. N. syn.

texensis Townes. Kans., Okla., Tex.; Mexico.

Compsocryptus texensis Townes, 1962. *In* Townes and Townes, U. S. Natl. Mus., Bul. 216 (pt. 3): 283. ♂, ♀.

tricinctus Townes. Ga.?, Calif. Townes studied a specimen labeled Dewitt, Ga. and thought that those data may be erroneous.

Compsocryptus tricinctus Townes, 1962. *In* Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 295. ♂, ♀.

turbatus (Cresson). Western Idaho, n. Utah, Oreg., Calif.

Cryptus turbatus Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 363. ♀.

unicolor Townes. Central Calif.

Compsocryptus unicolor Townes, 1962. *In* Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 297. ♂, ♀.

SUBTRIBE HEMIGASTRINA

It is my belief that the Old World genera *Hemigaster*, *Litochila*, and *Mansa* are unrelated to the genera here placed in the Aptesini and are most likely related to some of the eleven genera placed in the subtribe Baryceratina by Townes (1970) (compare Townes and Townes [1962]). Townes (1970) said it is almost certain that the genera he has grouped in the Baryceratina are not all related but are associated for convenience partly on convergent characters resulting from the habit of attacking cocoons of Limacodidae. Only three of the genera of Hemigastrina occur in the New World, and only two of these have North American species.

Taxonomy: Townes and Townes, 1962. U. S. Natl. Mus. Bul. 216 (pt. 3): 12 (list of genera placed in Baryceratina). —Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 120-121, 205-215.

Genus BARYCEROS Gravenhorst

Baryceros Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 777.

Type-species: *Baryceros guttatus* Gravenhorst. Monotypic.

Christolia Brulle, 1846. *In* Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 246.

Type-species: *Christolia punctata* Brulle. Monotypic.

Crypturopsis Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 45.

Type-species: *Crypturus texanus* Ashmead. Monotypic and orig. desig.

Neochristolia Blanchard, 1936. Rev. Argentina de Ent. 1: 40.

Type-species: *Neochristolia eucleidis* Blanchard. Monotypic and orig. desig.

Most of the species of this large genus are Neotropic.

audax (Cresson). Que. s. to Ala., w. to Wis. and Kans. In the tribal revision of Townes and Townes (1962) part of the specimens from the northern end of the distribution were distinguished as a separate subspecies.

Mesostenus audax Cresson, 1878. Canad. Ent. 10: 207. ♀.

Mesostenus exaptus Cresson, 1878. Canad. Ent. 10: 208. ♀.

Mesostenus Saundersi Cresson, 1878. Canad. Ent. 10: 208. ♀. N. syn.

Mesostenus armatus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 76. ♀. N. syn.

Mesostenus saundersii Dalla Torre, 1902. Cat. Hym., v. 3, p. 546. Emend.

candidus (Cresson). Mass. s. to Fla., w. to Mich. and Kans.

Mesostenus candidus Cresson, 1878. Canad. Ent. 10: 206. ♂.

Crypturus albomaculatus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 414. ♂.

Crypturopsis abdominalis Cushman, 1929. U. S. Natl. Mus., Proc. 74 (16): 28. ♀. Preocc. in *Baryceros* by Cresson, 1873.

Christolia dunetorum Townes, 1944. Amer. Ent. Soc., Mem. 11: 271. N. name for *Crypturopsis abdominalis* Cushman.

fortis (Cresson). Pa., Md., W. Va., n. Ga., s. Mich., Ohio, Ky., e. Kans., e. Okla.

Mesostenus fortis Cresson, 1878. Canad. Ent. 10: 206. ♀.

halli Townes. Ariz.

Baryceros halli Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 30. ♂.

texanus (Ashmead). Md. s. to Fla., w. to n. Mich. and e. Tex.; n.w. Mexico. Host: *Alarodia slossoniae* Pack.

Crypturus texanus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 413. ♂.

Crypturus Dyari Ashmead, 1897. Canad. Ent. 29: 113. ♂, ♀.

Genus WHYMPERIA Cameron

Whymperia Cameron, 1903. Entomologist 36: 122.

Type-species: *Whymperia carinifrons* Cameron. Monotypic.

Protocryptus Schmiedeknecht, 1904. Opusc. Ichtn., v. 2, p. 414.

Type-species: *Protocryptus grandis* Schmiedeknecht. Desig. by Viereck, 1914.

Zamansa Viereck, 1912. U. S. Natl. Mus., Proc. 42: 647.

Type-species: *Cryptus aztecus* Cresson. Monotypic and orig. desig.

Eleven species and subspecies are known, ten of them Neotropic.

tricolor Townes. Southern Ariz.

Whymperia tricolor Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 22. ♀.

SUBTRIBE MESOSTENINA

Genus CRYPTANURA Brulle

Cryptanura Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 242.

Type-species: *Cryptanura nigripes* Brulle. Desig. by Viereck, 1914.

Mesostenus subg. *Polyaenus* Cresson, 1873. Acad. Nat. Sci. Phila., Proc. 25: 149.

Type-species: [*Mesostenus*] *Polyaenus ectypus* Cresson. Desig. by Viereck, 1914.

Polyaenidea Viereck, 1913. U. S. Natl. Mus., Proc. 46: 381.

Type-species: *Polyaenidea pretiosa* Viereck. Monotypic and orig. desig.

Except for the three species known to occur in North America, this very large genus is Neotropic.

Revision: Cushman, 1945. U. S. Natl. Mus., Proc. 96: 139-176.

banchiformis (Megerle). Mass. s. to Fla., w. to Mich., Kans., and Tex. In their tribal revision, Townes and Townes (1962) say that "the sting of this species is moderately severe and of long duration; one sting received by the senior author [while collecting] was still painful on the night of the third day."

Ichneumon banchiformis Megerle, 1802. App. ad Cat. Ins., Quae Mense Novembris 1802 Vienne Austriae Auctionis Lege Vendita Fuere, p. 16. [male].

Mesostenus spinarius Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 227. ♀.

Mesostenus albopictus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 312. ♂. Preocc. by Smith, 1858.

Mesostenus Delawarensis Dalla Torre, 1901. Cat. Hym., v. 3, p. 540. N. name for *M. albopictus* Cresson.

compacta (Cresson). Southern Tex.; Mexico, Honduras.

Mesostenus (Mesostenus) compactus Cresson, 1873. Acad. Nat. Sci. Phila., Proc. 25: 153. ♀.

Cryptanura planiscutellata Cushman, 1945. U. S. Natl. Mus., Proc. 96: 152. ♀.

septentrionalis Cushman. Southern N. Y. s. to S. C., w. to Mo. and La.
Cryptanura septentrionalis Cushman, 1945. U. S. Natl. Mus., Proc. 96: 156. ♀.

Genus MESOSTENUS Gravenhorst

Mesostenus Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 750.

Type-species: *Mesostenus transfuga* Gravenhorst. Desig. by Westwood, 1840.

Stenaraeus Thomson, 1896. Opusc. Ent. 21: 2380.

Type-species: *Mesostenus transfuga* Gravenhorst. Desig. by Viereck, 1914.

Unlima Cameron, 1902. Ann. and Mag. Nat. Hist. (7) 9: 208.

Type-species: *Unlima penetralis* Cameron. Monotypic.

Derocentrus Cushman, 1919. Ent. Soc. Wash., Proc. 21: 113.

Type-species: *Coleocentrus texanus* Ashmead. Orig. desig.

This genus is of moderate size and nearly worldwide distribution.

Revision: Cushman, 1929. U. S. Natl. Mus., Proc. 74 (16): 40-50. — Porter, 1973. Acta Zool.

Lilloana [Tucuman] 30: 227-267 (South American spp.).

Taxonomy: Porter, 1974. Acta. Zool. Lilloana [Tucuman] 31: 27-46 (additions to 1973 revision).

albinotatus promptus Cresson. N. B. w. to B. C., s. to w. N. C., S. Dak., Colo., and n. Calif. *M. albinotatus albinotatus* Gravenhorst is European.

Mesostenus promptus Cresson, 1878. Canad. Ent. 10: 209. ♂.

americanus Cresson. Que. s. to Va., w. to S. Dak. Barron (1975) resurrected the name *brevipennis* from synonymy with *albinotatus promptus* and placed *temporalis* as a synonym of *brevipennis*; he failed to note that Townes (1970) had placed *temporalis* as a synonym of *americanus*.

Mesostenus tarsatus Provancher, 1875. Nat. Canad. 7: 265. ♂. Preocc. by Cresson, 1865.

The syntypes were not found by Barron (1975).

Mesostenus americanus Cresson, 1878. Canad. Ent. 10: 209. ♀.

Exetastes brevipennis Provancher, 1882. Nat. Canad. 13: 363. Nomen nudum.

Exetastes brevipennis Provancher, 1883. Petite Faune Ent. Canada Hym., p. 386. ♂, ♀. N. syn.

Mesostenus temporalis Townes, 1962. In Townes and Townes, U. S. Natl. Mus., Bul. 216 (pt. 3): 441. ♂, ♀.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 224 (syn.). — Barron, 1975. Nat. Canad. 102: 436-437, 572-573.

angustus Townes. R. I. s. to N. C., w. to e. Kans.

Mesostenus leucopus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 406. ♂. Preocc. by Brulle, 1846.

Mesostenus angustus Townes, 1944. Amer. Ent. Soc., Mem. 11: 284. N. name for *leucopus* Ashmead.

clitellatus Townes. N. S., w. to s. B. C., s. to Va. and n.e. Tex. Host: *Saucrobotys futilalis* (Led.).

Mesostenus clitellatus Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 447. ♂, ♀.

Morphology: Short, 1959. U. S. Natl. Mus., Proc. 110: 440, fig. 22B (final-instar larva).

eisenii Ashmead. Md. s. to Ga., w. to Ohio and Tex.; Mexico.

Mesostenus eisenii Ashmead, 1894. Calif. Acad. Sci., Proc. (2) 4: 129. ♀.

gracilis Cresson. N. S. s. to Ga., w. to s. B. C. and Calif.; Bermuda, Mexico. Host: *Anagasta kuehniella* (Zell.), *Cadra figulilella* (Greg.), *Ephestia elutella* (Hbn.), *Euzophora semifuneralis* (Wlk.), *Homoeosoma electellum* (Hulst), *Laetilia coccidivora* (Comst.), *Ozania fusconiaculella clarefacta* Dyar, *Laspeyresia caryana* (Fitch).

Mesostenus gracilis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 315. ♂.

Nematopodius orbitalis Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 21. ♀.

Biology: Bare, 1942. Jour. Econ. Ent. 35: 186-187.

- liogaster** Townes. Western N. W. T., Sask., Wyo., Idaho, B. C., Oreg., Calif.; Mexico.
Mesostenus liogaster Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 440. ♂, ♀.
- longicaudis** Cresson. N. Y., Minn., Nebr., and n. Calif., s. to S. C., Tex., and s. Calif.; Mexico.
 Host: *Lorostege sticticalis* (L.).
Mesostenus longicaudis Cresson, 1872. Amer. Ent. Soc., Trans. 4: 164. ♀.
Mesostenus macilentus Cresson, 1878. Canad. Ent. 10: 210. ♂.
Mesostenus gracilipes Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 365. ♀.
Colocentrus texanus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 444. ♀.
Mesostenus macrurus Dalla Torre, 1901. Cat. Hym., v. 3, p. 544. Unnecessary n. name for *M. longicaudis* Cresson, which is not preocc. by *M. longicauda* Brulle, 1846.
Nematopodius exclamans Viereck, 1905. Kans. Acad. Sci., Trans. 19: 318. ♀.
- melanurus** Cushman. Alta. Known only from the holotype.
Mesostenus melanurus Cushman, 1929. U. S. Natl. Mus., Proc. 74 (16): 47. ♀.
- sicarius** Townes. N. C., Tex., s. Alta., Mont., Colo., Ariz., Calif.; Mexico. Ecology: Distribution seems to correlate with that of cacti of the genus *Opuntia*; one specimen emerged from a cocoon found in a cactus stem.
Mesostenus sicarius Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 448. ♂, ♀.
- thoracicus** Cresson. Que. w. to B. C., s. to Fla., Tex., and s. Calif. Host: *Acrobasis betulella* Hulst, *A. caryivorella* Rag., *Macrobtys thesaeusalis* (Wlk.), *Phlyctaenia extricalis* (Gn.).
Mesostenus thoracicus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 314. ♂, ♀.
Mesostenus erythrogaster Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 406. ♂.

Genus POLYCYRTUS Spinola

- Polycyrtus* Spinola, 1840. Soc. Ent. de France, Ann. 9: 154.
 Type-species: *Polycyrtus histrio* Spinola. Desig. by Viereck, 1914.
- Cryptanuridimorpha* Viereck, 1913. U. S. Natl. Mus., Proc. 46: 369.
 Type-species: *Cryptanuridimorpha elegans* Viereck. Monotypic and orig. desig. *C. elegans* is a synonym of *Polycyrtus vierecki* Townes, 1966.
- Cryptopterygimorpha* Viereck, 1913. U. S. Natl. Mus., Proc. 46: 371.
 Type-species: *Cryptopterygimorpha tubulifera* Viereck. Monotypic and orig. desig.
- Polycyrtimorpha* Viereck, 1913. U. S. Natl. Mus., Proc. 46: 383.
 Type-species: *Polycyrtimorpha amoenus* Viereck. Monotypic and orig. desig.
- Polycyrtus* is a very large genus of the New World. Only one species is known from the Nearctic Region, but in view of the number of species known from Mexico and Cuba, it seems likely that additional species will be found in the southern U. S.
- Revision: Cushman, 1931. U. S. Natl. Mus., Proc. 78 (14): 1-62.
- neglectus** Cushman. Mass. s. to Fla., w. to Wis. and e. Tex. Ecology: Occurs in moist forests.
Polycyrtus neglectus Cushman, 1926. U. S. Natl. Mus., Proc. 67 (23): 5. ♂, ♀.
- Taxonomy: Cushman, 1929. U. S. Natl. Mus., Proc. 74 (16): 2, 4, 5, 51.

SUBTRIBE GORYPHINA

This subtribe includes 33 genera, 29 of which are restricted to the Old World. Only three of the genera occurring in the New World have Nearctic species.

Genus DIAPETIMORPHA Viereck

- Diapetimorpha* Viereck, 1913. U. S. Natl. Mus., Proc. 44: 564.
 Type-species: *Cryptus armatus* Ashmead. Monotypic and orig. desig.
- This is a large Nearctic and Neotropical genus.
- Revision: Cushman, 1929. U. S. Natl. Mus., Proc. 74 (16): 29-37 (Nearctic spp.).
- acadia** Cushman. Md. s. to Fla., w. to Mo. and Tex.; Mexico.
Diapetimorpha acadia Cushman, 1929. U. S. Natl. Mus., Proc. 74 (16): 35. ♂, ♀.

- alabama** Cushman. Southern N. Y. s. to S. C., w. to e. Kans. and Ala.
Diapetimorpha alabama Cushman, 1929. U. S. Natl. Mus., Proc. 74 (16): 34. ♂, ♀.
- brunnea** Townes. Southern Ga., Fla.
Diapetimorpha brunnea Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 382. ♂, ♀.
- introita** (Cresson). N. C. s. to Fla., w. to Tex.; Mexico.
Mesostenus introitus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 162. ♂.
Mesostenus dejectus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 163. ♀.
Cryptus armatus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 411. ♂. Preocc. by Lucas, 1846.
Cryptus ashmeadii Dalla Torre, 1902. Cat. Hym., v. 3, p. 562. N. name for *C. armatus* Ashmead.
- macula confederata** Cushman. Northern Va. s. to mid Fla., w. to e. Tex. Host: *Pilocrosis tripunctata* (F.). *D. macula macula* (Cameron) is Mexican.
Diapetimorpha confederata Cushman, 1929. U. S. Natl. Mus., Proc. 74 (16): 34. ♀.
- macula ustulata** Townes. Southern Fla. One would expect *m. ustulata* to be found in Cuba, particularly if the taxon really deserves being distinguished from *m. confederata*.
Diapetimorpha macula ustulata Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 386. ♂, ♀.
- picta** Townes. Southeastern Ga., s. Fla.
Diapetimorpha picta Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 387. ♂, ♀.
- rufigaster** Cushman. Md. s. to Fla., w. to s.e. Wis. and Tenn.
Diapetimorpha rufigaster Cushman, 1929. U. S. Natl. Mus., Proc. 74 (16): 33. ♀.
- rugosa** Townes. N. J. s. to S. C., w. to s.w. Wis., e. Kans., and Tex.
Diapetimorpha rugosa Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 392. ♂, ♀.

Genus LISTROGNATHUS Tschek

Townes (1970) recognized five subgenera, two of which have Nearctic species. In their tribal revision, Townes and Townes (1962) erroneously treated the name *Listrognathus* as being of feminine gender. If one chooses to ignore the provision in the Code (art. 30, [a], [i], [3]) regarding the genders of Greek generic names latinized with a change in termination, it is inconsistent to also ignore the scholarly work of Hopper (1959). Hopper regarded *Listrognathus* as masculine, which is apparently explained by his statement that "a large proportion of the compounds of Greek nouns are adjectives by Greek grammar and may be either masculine or feminine ..., and in such cases the gender must be considered to be determined by the first species included whose name is of definite gender" (in this case *L. cornutus* Tschek).

Revision: Cushman, 1929. U. S. Natl. Mus., Proc. 74 (16): 15-22.

Taxonomy: Hopper, 1959. Ent. Soc. Wash., Proc. 61 (4): 158, 166 (nomenclature). —Townes, 1970 (1969). Amer. Ent. Soc., Mem. 12: 259-262.

Genus LISTROGNATHUS Subgenus FENESTULA Townes

Listrognathus subg. *Fenestula* Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 408.

Type-species: *Mesostenus paludatus* Cresson. Orig. desig.

Townes (1970) said that there are three species, one Nearctic, one Japanese, and one Korean (undescribed).

paludatus californicus Townes. Calif. Host: Lepidopteran on *Salix*.

Listrognathus (*Fenestula*) *paludatus californica* Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 410. ♂, ♀.

paludatus ocularis Townes. Ariz. Described from one specimen from the Chiricahua Mts.

Listrognathus (*Fenestula*) *paludatus ocularis* Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 411. ♀.

- paludatus paludatus** (Cresson). Mich., w. Ohio, Ill., Minn., Man., Tex., Wyo., Colo., N. Mex., Yukon, Alaska, B. C., Oreg. Host: *Cerura cinerea* Wlk.
Mesostenus paludatus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 162. ♂.
Listrognathus agnatus Cushman, 1929. U. S. Natl. Mus., Proc. 74 (16): 21. ♀.

Genus LISTROGNATHUS Subgenus LISTROGNATHUS Tschek

Listrognathus Tschek, 1870. Zool.-Bot. Gesell. Wien, Verh. 20: 153.

Type-species: *Listrognathus cornutus* Tschek. Monotypic. *L. cornutus* is regarded as a synonym of *L. pubescens* (Fonscolombe).

Mesostenoidens Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 45.

Type-species: *Mesostenus albomaculatus* Cresson. Monotypic and orig. desig.

This is apparently the largest subgenus; it is Neotropic (species unidentified or undescribed), Holarctic, and Oriental. I have seen one undescribed species from southern Calif.

achelomus Townes. Md., Fla.

Listrognathus (Listrognathus) acheloma Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 425. ♀.

albomaculatus albomaculatus (Cresson). R. I., s. Ont., Mich., and Kans. s. to Fla. and Tex.

Host: *Gretchena bolliana* (Sling).

Mesostenus albomaculatus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 313. ♀.

Mesostenus leucocorus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 407. ♂.

albomaculatus sagax (Provancher). Southern Que., Ont., and Alta. s. to W. Va. and Wis.

Mesostenus sagax Provancher, 1879. Nat. Canad. 11 (no. 126): 112. ♀.

bicolor Townes. Ariz. Known only from the holotype, which was collected in Oak Creek Canyon.

Listrognathus (Listrognathus) bicolor Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 414. ♀.

femoratus Townes. P. E. I., Que., Ont., Va., W. Va., Mich.

Listrognathus (Listrognathus) femorata Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 415. ♂, ♀.

glomeratus Townes. N. J. s. to Fla., w. to Pa., W. Va., and Tex.

Listrognathus (Listrognathus) glomerata Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 424. ♂, ♀.

multimaculatus Cushman. Maine s. to N. J., w. to Minn. and Mo. Host: Tortricid on *Gleditsia*.

Listrognathus albomaculatus var. *multimaculatus* Cushman, 1929. U. S. Natl. Mus., Proc. 74 (16): 18. ♀.

nigrescens Townes. Wyo., N. Mex., Alta., Utah.

Listrognathus (Listrognathus) nigrescens Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 416. ♂, ♀.

nubilipennis (Cresson). N. C., Ga. Ecology: According to Porter (1963) this species occurs in cypress swamps. *L. nubilipennis* was known to Townes and Townes (1962) only from the female holotype; Porter (1963) discussed two males and two females collected on the North Carolina coastal plain.

Mesostenus nubilipennis Cresson, 1878. Canad. Ent. 10: 205. ♀.

Taxonomy: Townes and Townes, 1962. U. S. Natl. Mus. Bul. 216 (pt. 3): 416. —Porter, 1963. Ent. News 74: 19-21.

rufitibialis Cushman. N. J., Md., S. C., Ind., Okla., Tex.

Listrognathus albomaculatus var. *rufitibialis* Cushman, 1929. U. S. Natl. Mus., Proc. 74 (16): 18. ♂, ♀.

rufus Townes. N. Y., Kans.

Listrognathus (Listrognathus) rufa Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 419. ♂.

victoriensis (Harrington). Southern B. C., n. Calif.

Cryptus victoriensis Harrington, 1894. Canad. Ent. 26: 211. ♀.

Listrognathus multicolor Cushman, 1929. U. S. Natl. Mus., Proc. 74 (16): 20. ♀.

Genus HYLOPHASMA Townes

Hylophasma Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 275.

Type-species: *Hemisphragia debilis* Townes. Monotypic and orig. desig.

According to Townes (1970) this genus is Neotropical, Nearctic, and eastern Palearctic and included seven undescribed species.

debilis (Townes). Md., Va., Ohio, Tenn., La., Kans.

Hemisphragia debilis Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 378. ♂, ♀.

SUBTRIBE LYMEONINA

Genus MALLOCHIA Viereck

Mallochia Viereck, 1912. U. S. Natl. Mus., Proc. 43: 591.

Type-species: *Mallochia agenioides* Viereck. Monotypic and orig. desig.

This New World genus is of moderate size; there are fewer Nearctic species than Neotropical ones (most of which are undescribed).

Revision: Cushman, 1929. U. S. Natl. Mus., Proc. 74 (16): 13-15.

agenioides Viereck. R. I. s. to Fla., w. to Mich., e. Kans., and Ala.; Mexico.

Mallochia agenioides Viereck, 1912. U. S. Natl. Mus., Proc. 43: 591. ♀.

frontalis Townes. N. J., Md., Va., N. C., e. Kans., Tex.

Mallochia frontalis Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 96. ♂, ♀.

laevis Townes. Southeastern Ga., n.e. Fla.

Mallochia laevis Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 97. ♂, ♀.

strigosa (Cresson). Tex., Ariz.? In their tribal revision, Townes and Townes (1962) were uncertain that the female from Ariz. which they identified as *strigosa* was really conspecific with the male holotype from Texas.

Mesoleptus? strigosus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 167. ♂.

Genus LYMEON Foerster

Lymeon Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 176.

Type-species: *Lymeon annulicornis* Ashmead. By subsequent monotypy from inclusion by Ashmead, 1894.

Neomesostenus Schmiedeknecht, 1904. Opusc. Ichtn., v. 2, p. 562.

Type-species: *Neomesostenus tuheitensis* Brues and Richardson. Desig. by Townes and Townes, 1966 from three species included by Brues and Richardson, 1913.

Christolimorpha Viereck, 1913. U. S. Natl. Mus., Proc. 44: 564.

Type-species: *Christolimorpha plesius* Viereck. Monotypic and orig. desig. The type-species is regarded as a synonym of *L. fuscipennis* (Brulle).

Zanastrus Viereck, 1913. U. S. Natl. Mus., Proc. 46: 385.

Type-species: *Zanastrus photopsis* Viereck. Monotypic and orig. desig.

Neogoryphus Roman, 1936. Ent. Tidskr. 57: 3.

Type-species: *Ichneumon ariolator* Linnaeus. Monotypic and orig. desig.

Nasutocryptus Pratt, 1945. Amer. Midland Nat. 34: 560.

Type-species: *Nasutocryptus nasutus* Pratt. Monotypic and orig. desig.

Except for four Nearctic species, this very large genus is Neotropical. The females oviposit into cocoons of various sorts, including the egg cocoons of spiders.

bicinctus (Cresson). Southern Fla.; Cuba.

Hemiteles bicinctus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 24. ♀.

Lymeon leiponeuron Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 397. ♂, ♀.

Taxonomy: Townes and Townes, 1966. Amer. Ent. Inst., Mem. 8: 89 (syn.).

cinctiventris (Cushman). Md. s. to Fla., w. to Tex.

Mesostenus laticinctus Cresson, 1878. Canad. Ent. 10: 208. ♀. Preocc. by *Mesostenus laticinctus* Walker, 1874.

Mesostenus Cressonii Dalla Torre, 1901. Cat. Hym., v. 3, p. 539. N. name for *M. laticinctus* Cresson; preocc. by Ashmead, 1900.

Diapetimorpha cinctiventris Cushman, 1929. U. S. Natl. Mus., Proc. 74 (16): 32. N. name for *M. cressonii* Dalla Torre.

nasutus (Pratt). N. Mex.

Nasutocryptus nasutus Pratt, 1945. Amer. Midland Nat. 34: 561. ♀.

orbis (Say). Southern N. Y. s. to Fla., w. to s. Wis., Kans., and Tex. Host: *Coleophora* sp., *Homaledra sabalella* (Chamb.), *Pheroecca walsinghami* (Bsk.), *Grapholitha molesta* (Bsk.), *Astala confederata* (G. and R.), *Lineodes vulnifica* Dyar, eggs of *Zelotes* sp., *Hyposoter fugitivus* (Say).

Cryptus orbis Say, 1836. Boston Jour. Nat. Hist. 1: 231. [female].

Mesostenus diligens Cresson, 1878. Canad. Ent. 10: 207. ♀.

Lyneon annulicornis Ashmead, 1894. U. S. Dept. Agr., Insect Life 7: 243. ♀.

Genus ACERASTES Cushman

Acerastes Cushman, 1929. U. S. Natl. Mus., Proc. 74 (16): 53.

Type-species: *Mesostenus pertinax* Cresson. Monotypic and orig. desig.

Except for the widely distributed type-species which ranges into the Nearctic Region, this moderately large genus is Neotropical.

pertinax (Cresson). Md. s. to Fla., w. to Tex.; Mexico, West Indies, Honduras, Panama, Venezuela, Brazil, Paraguay. Townes and Townes (1962) said that *pertinax* "appears to overwinter in southern Florida and near Brownsville, Tex., and to work northward each season."

Mesostenus pertinax Cresson, 1872. Amer. Ent. Soc., Trans. 4: 163. ♀.

Phytodietus ornatus Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 431. ♀.

Taxonomy: Townes and Townes, 1966. Amer. Ent. Inst., Mem. 8: 98 (syn.).

Biology: Townes and Townes, 1962. U. S. Natl. Mus. Bul. 216 (pt. 3): 405.

Genus POLYCYRTIDEA Viereck

Polycyrtidea Viereck, 1913. U. S. Natl. Mus., Proc. 46: 382.

Type-species: *Polycyrtidea gracilis* Viereck. Monotypic and orig. desig.

Except for one species that ranges into the southern tip of Texas and one that occurs in Fla., this small genus is restricted to America south of the U. S.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 12: 288.

floridana Porter. Northern Fla. Known only from the holotype.

Polycyrtidea floridana Porter, 1975. Fla. Ent. 58: 250. ♀.

limitis Cushman. Southern Tex.; Mexico, Costa Rica. In their tribal revision, Townes and Townes (1962) said that *limitis* may prove to be only subspecifically distinct from *P. flavopicta* (Ashmead) which is known from Grenada and South America.

Polycyrtidea limitis Cushman, 1929. U. S. Natl. Mus., Proc. 74: (16): 52. ♀.

Taxonomy: Porter, 1975. Fla. Ent. 58: 248-250.

Genus PACHYSOMOIDES Strand

Pachysoma Szepligeti, 1916. Mus. Natl. Hungarici, Ann. 14: 290. Preocc. by Macleay, 1821 and five additional authors.

Type-species: *Pachysoma albopictum* Szepligeti. Monotypic.

Pachysomoides Strand, 1917. Internatl. Ent. Ztschr. 10: 137. N. name for *Pachysoma* Szepligeti.

Polistiphaga Cushman, 1925. Wash. Acad. Sci., Jour. 15: 391.

Type-species: *Mesostenus arvalis* Cresson. Monotypic and orig. desig.

The species of this small New World genus are parasites of *Polistes* larvae.

Revision: Cushman, 1929. U. S. Natl. Mus., Proc. 74 (16): 55-57.

fulvus (Cresson). N. Y. s. to Fla., w. to s. B. C. and Calif.; Cuba, Mexico. Host: *Polistes annularis* (L.), *P. apachus* Sauss., *P. carolina* (L.), *P. cubensis* Lep., *P. fuscatus fuscatus* (F.).

Mesostenus? fulvus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 316. ♂.

Mesostenus arvalis Cresson, 1872. Amer. Ent. Soc., Trans. 4: 163. ♀.

[*Mesostenus*] *Mesostenus collaris* Cresson, 1873. Acad. Nat. Sci. Phila., Proc. 25: 162. ♂.

Taxonomy: Townes and Townes, 1966. Amer. Ent. Inst., Mem. 8: 96 (syn.).

Biology: Dow, 1932. Psyche 39: 16. —Gaul, 1940. Canad. Ent. 70: 240-242. —Rau, 1941. Ent. Soc. Amer., Ann. 34: 364.

stupidus (Cresson). N. C. s. to Fla., w. to s. Ill. and Tex.; West Indies and Mexico s. to South America; Hawaii. Host: *Polistes annularis* (L.), *P. canadensis* (L.), *P. exclamans* Vier., *P. fuscatus fuscatus* (F.).

[*Mesostenus*] *Mesostenus stupidus* Cresson, 1873. Acad. Nat. Sci. Phila., Proc. 25: 162. ♂.

Pachysoma albopictum Szepiugi, 1916. Mus. Nat. Hungarici, Ann. 14: 290. ♀.

Polistipha zonata Cushman, 1929. U. S. Natl. Mus., Proc. 74 (16): 56. ♀.

SUBTRIBE CERATOCRYPTINA

Of the 18 genera, 16 are confined to the Old World tropics.

Chamula Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 430.

Type-species: [*Mesostenus*] *Polycyrtus reliquus* Cresson. Monotypic and orig. desig.

This genus includes the type-species and an undescribed species from Venezuela.

reliqua (Cresson). Southwestern La.; Mexico. The female is unknown.

[*Mesostenus*] *Polycyrtus reliquus* Cresson, 1873. Acad. Nat. Sci. Phila., Proc. 25: 146. ♂.

SUBTRIBE OSPRYNCHOTINA

Most of the nine genera are tropical, and the hosts are larvae of wasps which make nests entirely or partly of mud.

Genus MESSATOPORUS Cushman

Messatoporus Cushman, 1929. U. S. Natl. Mus., Proc. 74 (16): 8.

Type-species: *Mesostenus discoidalis* Cresson. Orig. desig.

This is a rather large genus of the New World; most of the species are Neotropical.

Revision: Cushman, 1929. U. S. Natl. Mus., Proc. 74 (16): 8-13.

compressicornis Cushman. Conn. s. to Fla., w. to Ohio and Ala. Host: *Ancistrocerus tuberculocephalus sutterianus* (Sauss.), *Trypargilum collinum rubrocinctum* (Pack.). In their tribal revision, Townes and Townes (1962) said that *compressicornis* may prove to be a subspecies of *M. arcuatus* (Cresson) which is known from Mexico.

Messatoporus compressicornis Cushman, 1929. U. S. Natl. Mus., Proc. 74 (16): 12. ♂, ♀.

Messatoporus major Cushman, 1929. U. S. Natl. Mus., Proc. 74 (16): 13. ♀.

discoidalis (Cresson). Que. s. to S. C., w. to Minn. and Tex. Host: *Auplopus mellipes mellipes* (Say), *Phanagenia bombycina* (Cr.).

Mesostenus ferrum-equinum Walsh and Riley, 1869. Amer. Ent. 1: 133. Sex not indicated. Preocc. by Brulle, 1846.

Mesostenus discoidalis Cresson, 1872. Amer. Ent. Soc., Trans. 4: 162. ♀.

Mesostenus jocosus Provancher, 1874. Nat. Canad. 6: 300. ♀.

rufiventris Cushman. Que. w. to s. B. C., s. to Fla., s. Tex., Ariz., and n. Calif. Host: *Auplopus* sp., *Phanagenia bombycina* (Cr.)?, *Trypoxylon* sp.

Messatoporus rufiventris Cushman, 1929. U. S. Natl. Mus., Proc. 74 (16): 11. ♀.

Genus *ACRORICNUS* Ratzeburg

Acroricnus Ratzeburg, 1852. Ichn. d. Forstinsecten, v. 3, p. 92.

Type-species: *Acroricnus schaumii* Ratzeburg. Monotypic.

Xenodocon Foerster, 1855. Naturh. Ver. Rheinlande, Verh. 12: 237.

Type-species: *Xenodocon ruficornis* Foerster. Monotypic. The type-species is regarded as a synonym of *A. seductor* (Scopoli).

Macrobatus Holmgren, 1856 (1854). Svenska Vetensk.-Akad. Handl. 75: 50.

Type-species: *Cryptus macrobatus* Gravenhorst. Monotypic.

Linoceras Taschenberg, 1865. Ztschr. f. die Gesam. Naturw. Halle 25: 105.

Type-species: *Cryptus macrobatus* Gravenhorst. Desig. by Viereck, 1914.

Leptobatides Buysson, 1896. In Andre, Spec. Hym. Eur. Alg., v. 6, p. 678, pl. 3.

Type-species: *Leptobatides abeillei* Buysson. Monotypic.

Agathobanchus Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 97.

Type-species: *Banchus aequatus* Say. Monotypic and orig. desig. The type-species was misidentified by Ashmead, who based his description of *Agathobanchus* upon specimens of *Agathilla bradleyi* (Viereck) (see Cushman and Gahan, 1921).

This small genus is widely distributed in the northern hemisphere. The hosts are larvae of Eumenidae and Sphecidae.

Revision: Mitchell, 1950. Ent. Soc. Amer., Ann. 43: 249-261.

Taxonomy: Cushman and Gahan, 1921. Ent. Soc. Wash., Proc. 23: 158-159.

stylator aequatus (Say). N. S. s. to S. C., w. to Man. and Mo. Host: *Aucistrocerus birenimaculatus* (Sauss.), *A. adiabatus* (Sauss.), *Eumenes fraternus* Say, *Sceliphron caementarium* (Drury). The gradual south-to-north reduction in the amount of yellow pigmentation led Townes (1944) to divide this subspecies into two. The name *aequatus* was applied to the northern population, presumably to agree with Say's color description. Mitchell (1950) and Townes and Townes (1962) applied the name *aequatus* in the same manner. The inconsistencies in Say's color description of *aequatus* indicate that it would not be accurate enough to show that it applies to a specimen collected north of the type-locality (which was indicated as "Indiana," but which presumably would have been southwestern Indiana). Therefore, those wishing to recognize an arbitrary division of *A. s. aequatus* into two subspecies should apply the name *aequatus* to the southern population.

Banchus aequatus Say, 1836. Boston Jour. Nat. Hist. 1: 247. [male].

Cryptus juncens Cresson, 1864. Ent. Soc. Phila., Proc. 3: 295. ♀. N. syn.

Atractodes Cloutieri Provancher, 1874. Nat. Canad. 6: 150. ♂, ♀.

Taxonomy: Cushman and Gahan, 1921. Ent. Soc. Wash., Proc. 23: 158. —Townes, 1944. Amer. Ent. Soc., Mem. 11: 296-297. —Mitchell, 1950. Ent. Soc. Amer., Ann. 43: 258-259. —Townes and Townes, 1962. U. S. Natl. Mus. Bul. 216 (pt. 3): 474.

Biology: Walsh and Riley, 1869. Amer. Ent. 1: 137.

stylator edwardsii (Cresson). Western Oreg., Calif. Host: *Sceliphron caementarium* (Drury).

Linoceras Edwardsii Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 365. ♂.

stylator excelsus (Cresson). Western S. Dak., Colo. The range of this form is almost entirely overlapped by the southern end of the range of *s. niger*, which casts doubt upon the validity of the distinction between them.

Cryptus excelsus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 293. ♂, ♀.

Acroricnus stylator axilaris Mitchell, 1950. Ent. Soc. Amer., Ann. 43: 259. ♀. Synonymy based upon data in the tribal revision of Townes and Townes (1962). N. syn.

stylator niger Mitchell. Alta. s. to Colo. w. to B. C., e. Wash., e. Oreg., and Utah.

Acroricnus stylator niger Mitchell, 1950. Ent. Soc. Amer., Ann. 43: 253. ♂, ♀.

stylator stylator (Thunberg). Western N. W. T., n. B. C.; Eurasia.

Ichneumon stylator Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 265 (key); 9: 320. [male].

Cryptus macrobatus Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 440. ♂, ♀.

Acroricnus schaumii Ratzeburg, 1852. Ichn. d. Forstinsecten, v. 3, p. 92. ♂.

Xenodocon ruficornis Foerster, 1855. Naturh. Ver. Rheinlande, Verh. 12: 237. ♀.

Macrobatas clarator Holmgren, 1856 (1854). Svenska Vetensk.-Akad. Handl. 75: 50.

Unnecessary n. name for *Cryptus macrobatas* Gravenhorst.

stylator townesi Mitchell. N. Mex., Ariz.

Acroricnus stylator townesi Mitchell, 1950. Ent. Soc. Amer., Ann. 43: 256. ♂, ♀.

SUBTRIBE GABUNIINA

The members of this subtribe are all thought to be parasitic upon wood-boring Coleoptera and Lepidoptera. Only two of the 23 genera have Nearctic species.

Genus AGONOCRYPTUS Cushman

Agonocryptus Cushman, 1929. U. S. Natl. Mus., Proc. 74 (16): 6.

Type-species: *Mesostenus discoidaloides* Viereck. Orig. desig.

This moderately large New World genus is Neotropical except for the one species which occurs in eastern North America.

discoidaloides (Viereck). Southern N. H. s. to Fla., w. to s. Wis., e. Kans., and Tex. Host:

Podosesia syringae (Harris), *Eupogonius vestitus* (Say), *Psyrassa unicolor* (Rand).

Mesostenus discoidaloides Viereck, 1905. Kans. Acad. Sci., Trans. 19: 319. ♀.

Genus CRYPTOHELCOSTIZUS Cushman

Cryptohelcostizus Cushman, 1919. U. S. Natl. Mus., Proc. 55: 534.

Type-species: *Cryptohelcostizus rufigaster* Cushman. Monotypic and orig. desig.

This is a small Nearctic genus.

Revision: Cushman, 1940. U. S. Natl. Mus., Proc. 88: 357-359.

alamedensis (Ashmead). Western Tex., Utah, s. B. C., Oreg., Calif. Host: *Agrilus angelicus* Horn, *Chrysobothris mali* Horn, *Myrmex arizonicus* (Schaeff.).

Cryptus alamedensis Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 409. ♀.

Cryptohelcostizus rufigaster Cushman, 1919. U. S. Natl. Mus., Proc. 55: 534. ♂, ♀.

caudatus Townes. Calif.

Cryptohelcostizus caudatus Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 511. ♀.

chrysobothridis Cushman. Okla. Host: *Chrysobothris* sp. in *Malus pumila*.

Cryptohelcostizus chrysobothridis Cushman, 1940. U. S. Natl. Mus., Proc. 88: 358. ♀.

dichrous Viereck. N. J., Va., N. C., Ga., Mo., Tex.

Cryptohelcostizus dichrous Viereck, 1921. Psyche 28: 73. ♂, ♀.

fumipennis Townes. Ariz.

Cryptohelcostizus fumipennis Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 507. ♀.

genalis Townes. Calif.

Cryptohelcostizus genalis Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 507. ♀.

leiomerus Townes. Calif.

Cryptohelcostizus leiomerus Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 506. ♀.

maculosus Townes. Calif. Ecology: The holotype emerged from *Prosopis*.

Cryptohelcostizus maculosus Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 512. ♀.

nigricans Townes. Ariz.

Cryptohelcostizus nigricans Townes, 1962. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 3): 508. ♂, ♀.

ornatus Cushman. Southern Ariz., Calif. Host: *Chrysobothris deserti* Horn. The type locality is Death Valley.

Cryptohelcostizus ornatus Cushman, 1940. U. S. Natl. Mus., Proc. 88: 359. ♀.

SUBTRIBE SPHECOPHAGINA

This subtribe includes the Holarctic genus *Sphecophaga* and two other genera which are restricted to the Old World. The hosts are pupae of Vespinae or Polistinae.

Genus SPHECOPHAGA Westwood

Sphecophaga Westwood, 1840. *Introduct. Mod. Classif. Ins.*, v. 2, *Synopsis Genera Brit. Ins.*, p. 57.

Type-species: *Anomalon vesparum* Curtis. Monotypic and orig. desig.

Chryonomon Desvignes, 1856. *Cat. Brit. Ichn.*, p. 47.

Type-species: *Anomalon vesparum* Curtis. Monotypic.

Cacotropa Foerster, 1868. *Naturh. Ver. Rheinlande, Verh.* 25: 208.

Type-species: *Cacotropa sericea* Thomson. By subsequent monotypy from inclusion by Thomson, 1888. The type-species is regarded as a synonym of *S. vesparum* (Curtis).

There is a single species.

vesparum burra (Cresson). N. H. w. to B. C., s. to S. C., Ariz., and Calif. Host: *Vespula arenaria* (F.), *V. maculata* (L.), *V. maculifrons* (Buyss.). *S. vesparum vesparum* occurs in Europe. Both diapausing and nondiapausing larvae may develop on the same host pupa presumably from eggs deposited by a single *v. burra* female. Only females develop from nondiapausing larvae, and they usually differ somewhat in coloration from females which develop from diapausing larvae. Nondiapausing larvae spin a delicate, white cocoon, while diapausing larvae spin a tough, brown one.

Euceros burrus Cresson, 1869. *Canad. Ent.* 1: 104. ♀.

Sphecophagus[!]? *praedator* Zabriskie, 1894. *N. Y. Ent. Soc., Jour.* 2: 84. ♂, ♀.

Biology: Couper, 1870. *Canad. Ent.* 2: 52-53. —Zabriskie, 1894. *N. Y. Ent. Soc., Jour.* 2: 81, 86.

—Cushman, 1933. *Ent. Soc. Wash., Proc.* 35: 10-11. —Schmiedeknecht, 1939. *Ent. News* 50: 92-97, 125-131. —Leech, 1954. *Pan-Pacific Ent.* 30: 80.

UNPLACED TAXA OF CRYPTINI

Cryptus mundus Provancher, 1874. *Nat. Canad.* 6 (6): 177 (key); 6 (7): 203. "♂" = ♂, ♀. Que.

Barron (1975) said that the lectotype (no. 245 in second collection of Provancher) keyed to *Cryptus ruralis* Pratt, a species not known from Quebec. Townes' (1944) placement of *mundus* as a synonym of *C. persimilis* Cresson was based upon specimen no. 189 in Provancher's first collection (personal commun., Dr. H. K. Townes, 1975).

Taxonomy: Townes, 1944. *Amer. Ent. Soc., Mem.* 11: 280. —Barron, 1975. *Nat. Canad.* 102: 511-512.

SUBFAMILY ACAENITINAE

Revision: Cushman and Rohwer, 1920. *U. S. Natl. Mus., Proc.* 57: 503-523. —Townes and Townes, 1960. *U. S. Natl. Mus. Bul.* 216 (pt. 2): 544-579.

Taxonomy: Townes, 1971. *Amer. Ent. Inst., Mem.* 17: 159-179 (genera of world).

TRIBE COLEOCENTRINI

This Holarctic and Oriental tribe includes six genera, only two of which have North American species.

Genus COLEOCENTRUS Gravenhorst

Coleocentrus Gravenhorst, 1829. *Ichn. Europaea*, v. 3, p. 437.

Type-species: *Ichneumon excitator* Poda. Desig. by Westwood, 1840.

Macrocoleus Desvignes, 1850. *Ent. Soc. London, Trans.* (n. s.) 1: 13.

Type-species: *Macrus longiventris* Gravenhorst. Desig. by Viereck, 1914. The type-species is regarded as a synonym of *C. excitator* (Poda).

This is a moderately large Holarctic and Oriental genus.

- flavipes** (Provancher). N. S. s. to w. N. C. and e. Tenn., w. to n. and w. Ont. Host: *Leptura* sp.? *Acoenites flavipes* Provancher, 1874. Nat. Canad. 6: 80. ♀.
Acoenites Canadensis Provancher, 1880. Nat. Canad. 12: 10. ♂.
Coleocentrus minor Cushman, 1920. In Cushman and Rohwer, U. S. Natl. Mus., Proc. 57: 507. ♀.
Coleocentrus niger Cushman, 1920. In Cushman and Rohwer, U. S. Natl. Mus., Proc. 57: 508. ♀.
- harringtoni** Cushman. N. B., Que., N. H., Mass., N. Y., Pa., Ont., n.w. Mich., Minn.
Coleocentrus canadensis Harrington, 1892. Canad. Ent. 25: 29. ♀. Preocc. in *Coleocentrus* by Provancher, 1880.
Coleocentrus harringtoni Cushman, 1920. In Cushman and Rohwer, U. S. Natl. Mus., Proc. 57: 509. N. name for *C. canadensis* Harrington.
- manni** Cushman. Colo., B. C., Wash., Oreg.
Coleocentrus manni Cushman, 1920. In Cushman and Rohwer, U. S. Natl. Mus., Proc. 57: 512. ♂, ♀.
Coleocentrus manni coloradensis Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 556. ♂. N. syn.; described from only two specimens.
- occidentalis** *occidentalis* Cresson. Northwestern Mont., n. Idaho, s. B. C., Wash., Oreg.
Coleocentrus occidentalis Cresson, 1879 (1978). Acad. Nat. Sci. Phila., Proc. 30: 376. ♀.
- occidentalis pulchripennis** Cushman. Northeastern Calif.
Coleocentrus pulchripennis Cushman, 1920. In Cushman and Rohwer, U. S. Natl. Mus., Proc. 57: 512. ♀.
- pettiti** Cresson. N. S. s. to w. N. C., w. to Minn. and Colo.
Coleocentrus Pettiti Cresson, 1868. Canad. Ent. 1: 35. ♀.
Coleocentrus Pettitii(!) Provancher, 1880. Nat. Canad. 12: 8.
Xenoschesis alpinensis Davis, 1894. In Slosson, Ent. News 5: 4. Nomen nudum.
Coleocentrus Pettitii Dalla Torre, 1901. Cat. Hym., v. 3, p. 530. Emend.
- quebecensis** Provancher. N. S., N. B., Que., Maine, Ont., Mich., Minn., s.w. Mont.
Coleocentrus Quebecensis Provancher, 1874. Nat. Canad. 6: 79. ♀.
- rufocoxatus** Pratt. P. E. I., N. B., Que., N. H., Vt., N. Y., Pa., Ont., w. N. W. T.
Coleocentrus rufocoxatus Pratt, 1936. Brooklyn Ent. Soc., Bul. 31: 11. ♀.
- rufus** Provancher. N. S. w. to e. N. Dak., s. to e. N. C., n.w. S. C., n. Ga., and central Iowa.
Coleocentrus rufus Provancher, 1876. Nat. Canad. 8: 316. ♀.
Coleocentrus similis Cushman, 1920. In Cushman and Rohwer, U. S. Natl. Mus., Proc. 57: 514. ♂, ♀.

Genus MESOCLISTUS Foerster

Mesoclistus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 168.

Type-species: *Acaenites rufipes* Gravenhorst. By subsequent monotypy from inclusion by Schmiedeknecht, 1888.

Only the European type-species and one North American species are known.

cushmani Townes. Interior Alaska.

Mesoclistus cushmani Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 560. ♂, ♀.

TRIBE ACAENITINI

This tribe includes eighteen genera; only three of these occur in the New World, and none occur in South America.

Genus AROTES Gravenhorst

Arotes Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 446.

Type-species: *Arotes albicinctus* Gravenhorst. Monotypic.

Asthenomeris Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 168.

Type-species: *Asthenomeris nigricoxis* Schmiedeknecht. By subsequent monotypy from inclusion by Schmiedeknecht, 1888.

Sphalerus Kriechbaumer, 1878. Ent. Nachr. 4: 41.

Type-species: *Sphalerus bifasciatus* Kriechbaumer. Monotypic. The type-species is regarded as a synonym of *A. albicinctus* Gravenhorst.

Retanisia Cameron, 1886. Biol. Cent.-Amer., Hym., v. 1, p. 299.

Type-species: *Retanisia facialis* Cameron. Monotypic.

This moderate sized genus is Holarctic and Neotropic (mountains of Mexico and Guatemala). The known hosts include Cerambycidae, Melandryidae, Buprestidae, and Mordellidae.

amoenus Cresson. Que. w. to Minn., s. to w. N. C. and n. Ga. Host: *Melandrya striata* Say.

Acaenitus amoenus Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., ed. 2, p. 586. Nomen nudum.

Arotes amoenus Cresson, 1868. Canad. Ent. 1: 34. ♀.

Tropistes elegans Provancher, 1874. Nat. Canad. 6: 80. ♂.

decorus (Say). Mann. s. to Ga., w. to Wis., e. Kans., and e. Tex. Host: *Tomoxia bidentata* (Say).

Acaenitus decorus Say, 1836. Boston Jour. Nat. Hist. 1: 248. ♀ (♂ misdet.).

maurus Rohwer. Northern Minn., w. Sask., central Alta., s.w. B. C. May be only subspecifically distinct from *A. amoenus* Cresson.

Arotes maurus Rohwer, 1920. In Cushman and Rohwer, U. S. Natl. Mus., Proc. 57: 517. ♀.

melleus (Say). N. Y., N. J., Pa., Md., D. C., w. N. C., s. Mich., s.w. Ind. Host: *Metacmaeops vittatus* (Swed.).

Acaenitus melleus Say, 1836. Boston Jour. Nat. Hist. 1: 249. ♀.

Genus SPILOPTERON Townes

Spilopteron Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 568.

Type-species: *Spilopteron franclemonti* Townes. Orig. desig.

This is a small Holarctic and Oriental genus.

formosum (Cresson). Que. w. to s.w. Man., s. to s.e. Ga. Host: *Bellamira scalaris* (Say).

Arotes formosus Cresson, 1868. Canad. Ent. 1: 34. ♂.

Spilopteron formosum australe Townes, 1960. In Townes and Townes, U. S. Natl. Mus.

Bul. 216 (pt. 2): 573. ♂, ♀. N. syn.

franclemonti Townes. N. B. w. to s. Man., s. to N. Y., s. Ohio, and Minn.

Spilopteron franclemonti Townes, 1960. In Townes and Townes, U. S. Natl. Mus. Bul. 216 (pt. 2): 569. ♂, ♀.

occiputale (Cresson). Mass. w. to Mich., s. to e. N. C., n.w. S. C., and s. Ind. Host: *Strangalia bicolor* (Swed.).

Arotes occiputalis Cresson, 1869. Amer. Ent. Soc., Trans. 2: 260. ♂.

Arotes apicalis Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 366. ♀.

vicinum (Cresson). N. S. w. to s.w. N. W. T., s. to Va., Tex., Colo., and n.w. Oreg. Host:

Anoplopera nigrella (Say), *A. rubrica* (Say)?, *A. vagans* (Oliv.)?, *Metacmaeops vittatus* (Swed.). The two "subspecies" recognized by Townes and Townes (1960) were largely sympatric.

Arotes vicinus Cresson, 1869. Amer. Ent. Soc., Trans. 2: 260. ♂.

Arotes venustus Cresson, 1869. Amer. Ent. Soc., Trans. 2: 260. ♂, ♀.

Arotes superbus Provancher, 1874. Nat. Canad. 6: 81. ♂, ♀.

Spilopteron vicinum melanderi Townes, 1960. In Townes and Townes, U. S. Natl. Mus.

Bul. 216 (pt. 2): 575. ♂, ♀. N. syn.

Genus YEZOCERYX Uchida

Yezoceryx Uchida, 1928. Hokkaido Imp. Univ., Faculty Agr., Jour. 25: 36.

Type-species: *Yezoceryx scutellaris* Uchida. Monotypic and orig. desig.

This is a large Holarctic and Oriental genus; the majority of the species are Oriental.

rupinsulensis (Cresson). Central Mich., Ill., s.e. Minn.

Acaenitus rupinsulensis Cresson, 1870. Amer. Ent. Soc., Trans. 3: 143. ♀.

SUBFAMILY LYCORININAE

This is a small subfamily including three closely related genera, only one of which occurs in the New World.

Genus TOXOPHOROIDES Viereck

Toxophoroides Cresson, 1874 (1873). Acad. Nat. Sci. Phila., Proc. 25: 406. Manuscript name cited in synonymy (i.e. nomen nudum). Townes (1970) regarded the name *Toxophoroides* as being validated by Viereck (1911); Townes' opinion is (personal communication, 1975) that because Cresson did not adopt this name (Cresson said that it was an MS name which he had intended to use for the species he described on the following page as *Lycorina? apicalis*) it should be regarded as having been published in synonymy by Cresson. Those who agree with the present Code regarding the publication date and authorship of names which have been accepted as having been validated in synonymy, possibly could regard *Toxophoroides* as having been validated by Cresson.

Toxophoroides Viereck, 1911. U. S. Natl. Mus., Proc. 40: 195.

Type-species: *Lycorina? apicalis* Cresson. Monotypic and orig. desig.

Chlorolycorina Cushman, 1920. U. S. Natl. Mus., Proc. 58: 9.

Type-species: *Glypta scitula* Cresson. Orig. desig.

This is a small Neotropical and Nearctic genus.

Revision: Cushman, 1920. U. S. Natl. Mus., Proc. 58: 7-13.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 3.

albomarginatus albomarginatus (Cresson). Maine w. to Man., s. to N. C., Ark., Kans., and Colo. Host: *Psorosinia hammondi* (Riley), *Anarsia lineatella* Zell., *Dichomerus bipunctella* (Wlsh.), *Archips rosaceana* (Harris), *Acleris minuta* (Rob.), *Grapholitha molesta* (Bsk.).

Glypta albomarginata Cresson, 1870. Amer. Ent. Soc., Trans. 3: 157. ♀.

albomarginatus soror (Cushman). N. Mex., Ariz., Calif. Host: *Acrobasis nuxvorella* Neun.

Chlorolycorina soror Cushman, 1920. U. S. Natl. Mus., Proc. 58: 10. ♀.

glaucornatus Cushman. N. J., Pa., Md., N. C., Ohio, Mich.

Toxophoroides glaucornatus Cushman, 1920. U. S. Natl. Mus., Proc. 58: 12. ♀.

scitulus (Cresson). N. Y., N. J., Md., D. C., Va., N. C., Fla., Ind., Ky., Tenn. Host: *Acrobasis juglandis* (LeB.), *Nephotypteris uvinella* (Rag.), *Tetralopha subcanalis* (Wlk.), *Arogalea cristifasciella* (Chamb.), *Gelechia albiparsella* (Chamb.), *Ancylistis comptana* (Froel.), "tineid" on apple, leaf feeder on *Rubus allegheniensis*.

Glypta scitula Cresson, 1870. Amer. Ent. Soc., Trans. 3: 155. ♀.

xanthozonatus (Ashmead). Southeastern N. C., s. Fla., Mo. Host: Tortricid on oak,

Antaeotricha humilis (Zell.), leaf roller on *Vaccinium australe*.

Glypta xanthozonata Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 449. ♂.

Taxonomy: Viereck, 1911. U. S. Natl. Mus., Proc. 40: 195 (syn.). —Cushman, 1920. U. S. Natl. Mus., Proc. 58: 11-12. —Walkley, 1967. In Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2, sup. 2, p. 85 (syn.).

SUBFAMILY COLLYRIINAE

Genus COLLYRIA Schiodte

Pachymerus Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 721. Preocc. by Thunberg, 1805 and Serville, 1825.

Type-species: *Bassus calcitrator* Gravenhorst. Desig. by Westwood, 1840.

Collyria Schiodte, 1839. Mag. Zool. (Ser. 2, sect. 3) 9 (insectes, pl. 6-10): 10. N. name for *Pachymerus* Gravenhorst.

This is a small Palearctic genus. The hosts are Cephidae. The eggs are inserted into the eggs of the host and the *Collyria* adults emerge from the cocoon of the host.

coxator (Villers). N. Y., N. J., Pa., Del., Md., n. Va., Ont., Ohio; Eurasia; n. Africa. Introduced. Host: *Cephus pygmaeus* (L.), *Janus integer* (Nort.). Despite repeated attempts to establish *coxator* in western Canada in the 1930's on the native *Cephus cinctus* Nort., it apparently no longer occurs there. Townes, Momoi, and Townes (1965) were apparently the first authors to suppress *Collyria calcitrator* (Gravenhorst) as a synonym of *coxator*, but Gravenhorst had placed *calcitrator* as a definite synonym of *coxator* in 1829 and uncharacteristically neglected to use the senior name. *Ichneumon coxator* Villers, 1789. Caroli Linnaei Ent., v. 3, p. 193. Sex not indicated. *Bassus calcitrator* Gravenhorst, 1807. Vergl. Uebers. Zool. Systeme, p. 266. ♀. *Pachymerus puncticeps* Thomson, 1877. Opusc. Ent. 8: 734. ♀. *Collyria calcitratrix* Schulz, 1906. Spolia Hym., p. 122. Emend.

Taxonomy: Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 727-729. —Kerrich, 1936. Soc. Brit. Ent., Trans. 3: 63. —Kerrich, 1936. Soc. Brit. Ent., Jour. 1: 124. —Townes, Momoi, and Townes, 1965. Amer. Ent. Inst., Mem. 5: 397-398.

Biology: Salt, 1931; 1932. Bul. Ent. Res. 22: 506; 23: 211-216. —Salt, 1934. Roy. Soc. London, Proc. (Ser. B) 114: 457-460. —Salt and Laing, 1935. Nature [London] 135: 792. —Walker, 1937. Parasitology 29: 477-503. —Walker, 1940. Bul. Ent. Res. 3: 551-573. —Smith, 1948. Ent. Soc. Ont., Ann. Rpt. 78: 39-44. —Smith, 1959. Canad. Ent. 91: 697-700.

SUBFAMILY ORTHOPELMATINAE

Genus ORTHOPELMA Taschenberg

Orthopelma Taschenberg, 1865. Ztschr. f. die Gesam. Naturw. [Halle] 25: 137.

Type-species: *Hemiteles luteolator* Gravenhorst. Desig. by Viereck, 1914.

Proedrus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 147.

Type-species: *Hemiteles luteolator* Gravenhorst. By subsequent monotypy from inclusion by Thomson, 1889.

This is the only genus in the subfamily; it is medium sized and Holarctic. The species are internal larval parasites of Cynipidae which make galls on *Rosa*, *Rubus*, and *Ribes*. Dr. John Barroon has completed a revision of *Orthopelma* which will probably be published prior to the appearance of this catalog.

californicum Ashmead. Northern Calif. Host: Cynipid gallmaker on wild currant. According to Ashmead, the syntypes were "reared in May, 1887, from a Rose gall," but the Koebele notes in the U. S. Natl. Museum say that they were reared from a cynipid which makes galls on wild currant and that the parasites of the cynipids emerged in May, 1888, from galls collected near Alameda Calif. in March, 1888.

Orthopelma californicum Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 417. ♂, ♀.

coloradense Ashmead. Colo. Host: *Diptolepis tuberculator* (Ckll.).

Orthopelma coloradense Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 418. ♀.

Orthopelma americanum Riley, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 154. Nomen nudum (also on same page as "*americana*").

diastrophii Ashmead. Conn., Ind.? Host: *Diastrophus radicum* Bass., *Diptolepis radicum* (O. S.). Apparently parasitizes cynipids which make galls on the roots of both *Rosa* and *Rubus*.

Orthopelma diastrophii Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 418. ♂, ♀. The syntypes from the Riley collection are not likely to be from Mo. as Ashmead thought because the specimens do not appear to have been mounted by Riley and because the numbers they bear do not appear to be Riley numbers. Small circular labels bearing a "W" might indicate that these specimens came from F. M. Webster, who was then in Indiana. I recently learned that Webster's notes are in the U. S. Natl. Archives.

luteolator (Gravenhorst). Que., Mass., R. I., N. Y., Pa., Ont., Ind., Ariz.; Europe. Host:

Diastrophus turgidus Bass., *Diptolepis ignota* (O. S.), *D. rosae* (L.), *D. rosae-folii* (Ckll.).

Ichneumon mediator Thunberg, 1822: 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 269; 9: 332. ♀. Unavailable by virtue of preoccupation in *Ichneumon* by *Pimpla mediator* Fabricius, which was unnecessarily renamed *Ichneumon modulator* by

Thunberg on key p. 271 (v. 8, 1822) and text p. 340 (v. 9, 1824). Although Thunberg never indicated that any of his names were replacement names until he cited the names being replaced in his 1824 text, it is imperative that we accept the fact that the renamed species (such as *P. mediator* Fabricius) were included in *Ichneumon* by Thunberg in his 1822 key. Otherwise, the numerous replacement names proposed in the key must instead be treated as proposals of new species. The only practical course is to continue to treat Thunberg's (1822; 1824) replacement names as such, particularly in view of the fact that most of them have been unavailable because they were unnecessarily proposed. Without having heard the foregoing argument, Dr. H. K. Townes informed me (personal commun., 1975) that he would consider *I. mediator* Thunberg to be available were it not for the fact that the combination *I. mediator* (Fabricius) had been published by Jurine in 1807. I am not certain that the latter would have any bearing on the question.

Hemiteles luteolator Gravenhorst, 1829. *Ichn. Europaea*, v. 2, p. 826. ♂, ♀.

Orthopelma minutum Ashmead, 1890 (1889). *U. S. Natl. Mus., Proc.* 12: 416. ♀. The type locality is Jamaica Plain, Mass. (not "Jamaica Plains, New York," as stated by Ashmead).

Orthopelma rosaecola Ashmead, 1890 (1889). *U. S. Natl. Mus., Proc.* 12: 417. ♂, ♀. Notes in the *U. S. Natl. Museum* indicate that the syntypes were reared from a cynipid gall on rose sent to Washington, D. C. by H. K. Morrison, Ft. Grant, Ariz.

Orthopelma thompsoni Brues, 1907. *Wis. Nat. Hist. Soc., Bul.* 5: 157. ♂, ♀.

Taxonomy: Roman, 1912. *Zool. Bidr. Uppsala* 1: 267, 292.

occidentale Ashmead. Southwestern Wyo. Host: *Diptolepis similis* (Ash.).

Orthopelma occidentale Ashmead, 1890 (1889). *U. S. Natl. Mus., Proc.* 12: 417. ♂.

ovale (Provancher). Que., Alta.

Hemiteles ovalis Provancher, 1874. *Nat. Canad.* 6: 332. ♂, ♀.

SUBFAMILY ICHNEUMONINAE

The Ichneumoninae is the second largest of ichneumonid subfamilies (only the Cryptinae being larger). The species are all internal parasites of Lepidoptera. The females of some species oviposit into larvae and some into fresh pupae, but the progeny always emerge from the pupa. The sexual dimorphism in structure and color is often marked, but the differences between species often are subtle, which not infrequently causes difficulty in identification and association of the sexes.

Historically, the Ichneumoninae have been divided into categories having names that were not derived from those of included genera. The names cyclopnesticae and particularly stenopneusticae are two which persist to some extent in current literature. The cyclopnesticae is composed of the Alomyini and Phaeogenini, while the stenopneusticae includes the remainder of the tribes of Ichneumoninae. The species of cyclopnesticae are parasites of microlepidoptera, while those of stenopneusticae generally parasitize macrolepidoptera. Accordingly, the species of cyclopnesticae are generally smaller than those of stenopneusticae.

Heinrich (1961-1962) published a revision of the stenopneusticae which applies mostly to northeastern North America. Many of the subspecies recognized or described in that work or its supplements (Heinrich, 1969-1976) are not recognized here, often because they merely represent ends and intermediate portions of cline. In some cases synonymy of these subspecific names is based upon specimens in the *U. S. National Museum* collection. In a few cases, subspecies are placed in synonymy because they are based upon too few specimens to demonstrate that they deserve recognition (particularly when there is no zoogeographical reason for expecting subspeciation).

Revision: Heinrich, 1961-1962 (Phaeogenini excluded). *Canad. Ent. Sup.* 15: 1-87 (1961 [1960]); 18: 89-205 (1961 [1960]); 21: 207-368 (1961); 23: 369-505 (1961); 26: 507-671 (1962); 27: 675-802 (1962); 29: 803-886 (1962). —Peck, 1964. *Ent. Soc. Canada, Mem.* 35: 887-925 (addenda, corrigenda, host-parasite list, and indices for Heinrich, 1961-1962). —Heinrich, 1969-1976. *Nat. Canad.* 96: 935-963 (1969); 98: 959-1026 (1971); 99: 173-211 (1972); 100: 461-465 (1973); 102: 753-782 (1976) (supplements to Heinrich, 1961-1962).

Taxonomy: Dasch, 1971. *Ohio Jour. Sci.* 71: 279-283 (key to stenopneusticae found overwintering as adult females, particularly in Ohio).

Biology: Dasch, 1971. Ohio Jour. Sci. 71: 270-279 (overwintering sites preferred by stenopneusticae found overwintering as adult females, particularly in Ohio).

TRIBE PHAEOGENINI

The members of this tribe are parasites of microlepidoptera. Townes and Townes (1973) persisted in suppressing the name Phaegenini as a synonym of Alomyini. Because this seems inconsistent with their recognition of a tribe Heterischynini, the Phaegenini are here regarded as tribally distinct from the Alomyini.

Taxonomy: Perkins, 1959. Handb. Ident. Brit. Ins., v. 7, pt. 2 (ai), p. 68-111. —Townes and Townes, 1973. Amer. Ent. Inst., Mem. 19: 219-221 (Ethiopian cat.).

SUBTRIBE HETERISCHYNINA

Genus HETERISCHYNUS Wesmael

Heterischynus Wesmael, 1859. [Brussels] Acad. Roy. de Belg., Mem. 8: 83.

Type-species: *Ichneumon pulex* Mueller. Monotypic.

Rhexidermus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 192.

Type-species: *Rhexidermus japonicus* Ashmead. By subsequent monotypy from inclusion by Ashmead, 1906.

Posocentrus Provancher, 1875. Nat. Canad. 7: 272.

Type-species: *Posocentrus huardi* Provancher. Monotypic.

Ischnopsidea Viereck, 1914. U. S. Natl. Mus. Bul. 83: 77.

Type-species: *Ichneumon thoracicus* Gravenhorst. Monotypic and orig. desig.

Aethiopsichnus Heinrich, 1936. Paris, Mus. d'Hist. Nat., Mem. (n. s.) 4: 244. Name invalid as of 1936 because neither of the two species names validated was designated as type-species.

Aethiopsichnus Heinrich, 1938. Acad. Malgache, Mem. 25: 127.

Type-species: *Aethiopsichnus olsoufieffi* Heinrich. Monotypic and orig. desig.

Species of this genus are known from the Holarctic and Ethiopian Regions.

coloradensis (Cushman), n. comb. Colo. According to notes pertaining to the C. F. Baker collection, the holotype was collected by C. F. Baker on July 21, 1896 at an elevation of 10,000 ft. in Rabbit Ear's Pass, Colo.

Ischnopsidea coloradensis Cushman, 1920. U. S. Natl. Mus., Proc. 58: 253. ♀.

huardi (Provancher). Que. s. to N. Y., w. to Alaska and Oreg.

Posocentrus Huardi Provancher, 1875. Nat. Canad. 7: 273. ♀.

Posocentrus Huarti (!) Provancher, 1879. Nat. Canad. 11: 251.

Phaegenes recticaudus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 42. ♀.

Ischnopsidea alberta Cushman, 1927. U. S. Natl. Mus., Proc. 72 (13): 1. ♀.

SUBTRIBE PHAEOGENINA

Taxonomy: Townes, Momoi, and Townes, 1965. Amer. Ent. Inst., Mem. 5: 415-423, 592-593 (cat. of E. Palearctic spp. and key to genera).

Genus STENODONTUS Berthoumieu

Gnathorxys Wesmael, 1845 (1844). [Brussels] Acad. Roy. de Belg., Nouveaux Mem. 18: 168. Preocc. by Westwood, 1842.

Type-species: *Ichneumon marginellus* Gravenhorst. Monotypic. The type-species was identified with a query by Berthoumieu.

Stenodontus Berthoumieu, 1896. Soc. Ent. de France, Ann. 65: 346. N. name for *Gnathorxys* Wesmael.

This is a small Holarctic genus with two undescribed species occurring in North America. The known ranges of these species are: (1) Newfoundland (insular) s. to N. C., w. to Mich. and (2) Idaho and Wash.

Genus *DICAELOTUS* Wesmael

Dicaelotus Wesmael, 1845 (1844). [Brussels] Acad. Roy. de Belg., Nouveaux Mem. 18: 175.

Type-species: *Ichneumon pumilis* Gravenhorst. Desig. by Ashmead, 1900.

Leptodemus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 182.

Type-species: *Leptodemus cariniscutis* Cameron. By subsequent monotypy from inclusion by Cameron, 1906.

Deloglyptus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 193.

Type-species: *Deloglyptus punctiventris* Thomson. By subsequent monotypy from inclusion by Thomson, 1891.

Cinxaelotus Holmgren, 1890 (1889). Ichn. Suecica, v. 3, p. 367.

Type-species: *Cinxaelotus erythrogaster* Holmgren. Monotypic.

Euryptilus Holmgren, 1890 (1889). Ichn. Suecica, v. 3, p. 375.

Type-species: *Euryptilus kriechebaumeri* Holmgren. Monotypic.

This is apparently a moderate sized genus of the Holarctic and Ethiopian Regions. Perkins (1959) placed *Deloglyptus* as a synonym of *Dicaelotus* because he thought the differences between them were rather weak. He said that if a division is made between them, other groups of species should also be split off as genera distinct from *Dicaelotus*. I assume, therefore, that Perkins's (1969) treatment of *Deloglyptus* as distinct from *Dicaelotus* was for the purpose of making the first revisor decision to suppress *Leptodemus* as a synonym of *Deloglyptus*. Consequently, I have not followed Townes and Townes (1973), who treated *Deloglyptus* as a distinct genus.

Taxonomy: Perkins, 1959. Handb. Ident. Brit. Ins., v. 7, pt. 2 (ai), p. 83. — Perkins, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 11: 416, 435. — Townes and Townes, 1973. Amer. Ent. Inst., Mem. 19: 220.

attenuatus (Provancher). Que., Conn., w. B. C. Because the range, "Atlantic to Cont. Divide in Transit. and U. Austr. Zones," given by Townes and Townes (1951) conflicts with the type-localities of two of their synonyms, one is inclined to doubt the correctness of their synonymy and to wonder about the sort of data they generally used to make their sweeping generalizations about the ranges of species.

Phygadeuon attenuatus Provancher, 1882. Nat. Canad. 13 (no. 155): 334 (key); 13 (no. 156):

359. ♀. Barron (1975) said that the lectotype selected by Rohwer and Gahan (1918) is now represented only by the pin and labels.

Phaeogenes sectus Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 358. ♂.

Herpestomus flavicoxae Harrington, 1894. Canad. Ent. 26: 210. ♂.

Phygadeuon (Plesignathus) taeniatus Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 335, 336. ♂.

Taxonomy: Gahan and Rohwer, 1918. Canad. Ent. 50: 135. — Townes and Townes, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 279. — Barron, 1975. Nat. Canad. 102: 430, 563.

clypeatus (Cresson). Maine s. to N. C., w. to Ill.

Stilpnus clypeatus Cresson, 1868. Amer. Ent. Soc., Trans. 2: 95. ♂.

gelechiae (Ashmead). N. H., N. Y., Ont., Ohio. Host: *Gnorimoschema gallaesolidaginis* (Riley).

Phaeogenes gelechiae Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 392. ♂, ♀.

missouriensis (Ashmead). D. C., Mo. Ecology: The holotype of the synonym *Phaeogenes*

hemiteloides was reared together with the type series of *Emphygina pallidiscapa* Rohwer (1911) (a synonym of *Ametastegia recens* [Say]) from beneath the bark at the base of a black birch (*Betula nigra*).

Phaeogenes missouriensis Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 393. ♀.

Phaeogenes hemiteloides Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 393. ♀.

Taxonomy: Rohwer, 1911. U. S. Natl. Mus., Proc. 41: 401 (discussion of Bureau of Entomology notes).

pacificus (Ashmead). Md., W. Va., Alta., Calif.

Ischyrocnemis pacificus Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 199. ♀ (male misdet.).

ruficornis (Ashmead). Mo.? The holotype bears a label with what is apparently the illegible name of a collector and another label reading "Collection C. V. Riley;" as often as not, Ashmead was incorrect concerning localities for specimens in the Riley collection.
Phaeogenes ruficornis Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 394. ♀.

Genus ORONOTUS Wesmael

Oronotus Wesmael, 1845 (1844). [Brussels] Acad. Roy. de Belg., Nouveaux Mem. 18: 213.

Type-species: *Oronotus coarctus* Wesmael. Monotypic. The type-species is regarded as a synonym of *O. binotatus* (Gravenhorst).

Fedalma Cameron, 1903. Ann. and Mag. Nat. Hist. (7) 13: 318.

Type-species: *Fedalma tricolor* Cameron. Monotypic.

Pramha Cameron, 1903. Ent. Soc. London, Trans. 51: 231.

Type-species: *Pramha mandibularis* Cameron. Monotypic.

Takanona Uchida, 1926. Hokkaido Imp. Univ., Faculty Agr., Jour. 18: 163.

Type-species: *Takanona ishiyamana* Uchida. Monotypic and orig. desig.

Taxonomy: Townes, Momoi, and Townes, 1965. Amer. Ent. Inst., Mem. 5: 420 (syn.).

vincibilis (Cresson), n. comb. N. H. s. to D. C., w. to Iowa and Ark.

Ichneumon vincibilis Cresson, 1867. Amer. Ent. Soc., Trans. 1: 312. ♀.

Phaeogenes decoloratus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 203. ♀.

Phaeogenes discus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 203. ♂.

Taxonomy: Townes, 1957. Ent. Soc. Wash., Proc. 59: 119 (generic transfer).

Genus DIADROMUS Wesmael

Diadromus Wesmael, 1845 (1844). [Brussels] Acad. Roy. de Belg., Nouveaux Mem. 18: 207.

Type-species: *Ichneumon troglodytes* Gravenhorst. Desig. by Ashmead, 1900.

Thyraella Holmgren, 1890 (1889). Ichn. Suecica, v. 3, p. 402.

Type-species: *Ischnus collaris* Gravenhorst. Monotypic.

erythrostomus (Cameron). Calif.

Stiboscopus erythrostomus Cameron, 1908. Amer. Ent. Soc., Trans. 34: 244. ♀.

Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 113.

helvolus (Cresson). Eastern Que. s. to Va., w. to Sask., Colo., and Tex. Host: *Sparganothis sulfureana* (Clem.), *Endothenia hebesana* (Wlk.).

Ichneumon helvolus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 312. ♀.

Ichneumon Magdalensis Provancher, 1890. Nat. Canad. 19: 248. ♂.

Taxonomy: Cresson, 1877. Amer. Ent. Soc., Trans. 6: 205.

marginatus (Provancher). N. Y., N. J., Md., Ont., Alta.

Phygadeuon marginatus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 56. ♂.

subtilicornis (Gravenhorst). Ont., Ohio, Ind., N. Dak., Kans., Utah, Wash., Oreg.; Eurasia. Host: *Plutella xylostella* (L.). Cushman (1935) suppressed *Herpestomus plutellae* Ashmead as a synonym of *subtilicornis*, and, after comparing North American and European specimens, I have concluded that Townes (1944) was incorrect in resurrecting *plutellae* from synonymy. *Phaeogenes japonicus* Ashmead was erroneously suppressed as a synonym of *subtilicornis* by Townes, Momoi, and Townes (1965).

Ichneumon subtilicornis Gravenhorst, 1829. Ichn. Europaea, v. 1, p. 592. ♀.

Diadromus imbellis Wesmael, 1845 (1844). [Brussels] Acad. Roy. de Belg., Nouveaux Mem. 18: 209. ♀.

Herpestomus plutellae Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 396. ♂.

Taxonomy: Cushman, 1935. Wash. Acad. Sci., Jour. 25: 548. — Townes, 1944. Amer. Ent. Soc., Mem. 11: 305. — Townes, Momoi, and Townes, 1965. Amer. Ent. Inst., Mem. 5: 420.

Biology: Lloyd, 1942. Rev. Canad. de Biol. 1: 633-645. — Harcourt, 1963. In LeRoux *et al.*, Ent. Soc. Canada, Mem. 32: 61.

Genus **TEREBRAELLA** Heinrich

Terebraella Heinrich, 1972. Nat. Canad. 99: 211.

Type-species: *Terebraella culiciops* Heinrich. Monotypic and orig. desig.
culiciops Heinrich. Fla.

Terebraella culiciops Heinrich, 1972. Nat. Canad. 99: 211. ♂, ♀.

Genus **COLPOGNATHUS** Wesmael

Colpognathus Wesmael, 1845 (1844). [Brussels] Acad. Roy. de Belg., Nouveaux Mem. 18: 174.

Type-species: *Ichneumon celerator* Gravenhorst. Monotypic.

helvus (Cresson). Que. s. to Ga., w. to Calif. Host: *Platyptilia carduidactyla* (Riley).

Ichneumon fungor Cresson, 1867. Amer. Ent. Soc., Trans. 1: 306. ♂.

Ichneumon helvus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 312. ♀.

Cryptus certus Provancher, 1874. Nat. Canad. 6 (6): 177 (key); 6 (7): 200. ♂.

Phygadeuon hilaris Provancher, 1874. Nat. Canad. 6: 284. "♂" = ♀.

Cryptus ruficornis Provancher, 1879. Nat. Canad. 11 (no. 125): 139. ♂. Preocc. by Gravenhorst, 1829.

Taxonomy: Cresson, 1877. Amer. Ent. Soc., Trans. 6: 204, 206.

Genus **CENTETERUS** Wesmael

Centeterus Wesmael, 1845 (1844). [Brussels] Acad. Roy. de Belg., Nouveaux Mem. 18: 176.

Type-species: *Centeterus major* Wesmael. Desig. by Ashmead, 1900.

euryptychiae (Ashmead). N. Y., Mich. Host: *Epiblema scudderianum* (Clem.). Ashmead erroneously stated that the two syntypes were from Washington, D. C. Notes made by T. Pergande show that he reared these specimens from galls (on *Solidago*) sent by D. S. Kellicott of Buffalo, N. Y.

Colpognathus euryptychiae Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 395. ♀.

linearis (Provancher). Que., N. J., N. Mex. Host: *Epiblema scudderianum* (Clem.).

Cryptus linearis Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 72. ♂.

Phaenogenes beulahensis Viereck, 1903. In Skinner, Amer. Ent. Soc., Trans. 29: 80. ♂.

quadriceps (Cresson). Que. s. to Va., w. to Mich.

Ichneumon quadriceps Cresson, 1867. Amer. Ent. Soc., Trans. 1: 312. ♂, ♀.

Taxonomy: Cresson, 1877. Amer. Ent. Soc., Trans. 6: 204.

tuberculifrons (Provancher). Que., Maine, N. Y., S. C., Ont.

Phygadeuon tuberculifrons Provancher, 1874. Nat. Canad. 6: 284. ♀.

Phygadeuon fasciatus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 55. ♀.

Genus **AETHECERUS** Wesmael

Aethecerus Wesmael, 1845 (1844). [Brussels] Acad. Roy. de Belg., Nouveaux Mem. 18: 213.

Type-species: *Aethecerus dispar* Wesmael. Desig. by Ashmead, 1900.

parvus (Provancher). Que., Maine, R. I., N. Y.

Ischnus parvus Provancher, 1875. Nat. Canad. 7: 112. ♂. Barron (1975) rejected the "lectotype" selected by Gahan and Rohwer (1917) because it is a specimen which Provancher used only for his 1879 redescription; Barron gave label data for the specimen he regarded as the holotype.

Phaenogenes Farladeani Provancher, 1882. Nat. Canad. 13: 331. ♀.

Phaenogenes Farladeani(?) Townes, 1944. Amer. Ent. Soc., Mem. 11: 302.

Taxonomy: Provancher, 1879. Nat. Canad. 11: 121. —Gahan and Rohwer, 1917. Canad. Ent. 49: 428. —Mason, 1960. Canad. Ent. 92: 145. —Barron, 1975. Nat. Canad. 102: 469, 527-528.

pinifolii Mason. Alta., Calif. Host: *Coleotechnites milleri* (Bsk.), *C. starki* (Free).

Aethecerus pinifolii Mason, 1960. Canad. Ent. 92: 145. ♂, ♀.

Genus JETHSURA Cameron

Jethsura Cameron, 1902. Amer. Ent. Soc., Trans. 28: 373.

Type-species: *Jethsura ferruginea* Cameron. Monotypic.

pyriformis (Provancher). Que., N. H., Mass., R. I., N. Y., N. Mex.

Ischnus pyriformis Provancher, 1875. Nat. Canad. 7: 109. ♀.

Jethsura ferruginea Cameron, 1902. Amer. Ent. Soc., Trans. 28: 374. ♀.

Taxonomy: Provancher, 1879. Nat. Canad. 11: 40. —Townes, 1961. Ent. Soc. Wash., Proc. 63: 109.

Genus PHAEOGENES Wesmæl

Phaogenes Wesmæl, 1845 (1844). [Brussels] Acad. Roy. de Belg., Nouveaux Mem. 18: 180.

Type-species: *Phaogenes primarius* Wesmæl. Desig. by Ashmead, 1900. The type-species is regarded as a synonym of *P. semivulpinus* (Gravenhorst).

Dirophanes Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 183.

Type-species: *Phygadeuon (Dirophanes) plesius* Viereck. By subsequent monotypy from inclusion by Viereck, 1912.

Tycherus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 192.

Type-species: *Phaogenes elongatus* Thomson. Monotypically included and desig. by Perkins, 1962.

Proscus Holmgren, 1890 (1889). Ichn. Suecica, v. 3, p. 420.

Type-species: *Phaogenes cephalotes* Wesmæl. Desig. by Ashmead, 1900.

Townes, Momoi, and Townes (1965) distinguished *Dirophanes* from *Phaogenes*, but the characters they ascribed to *Dirophanes* in their key do not fit the type-species very well. Their key also distinguishes *Phaogenes* in the strict sense from "species placed in *Phaogenes* with a query," but because the latter category includes most of the species presently in *Phaogenes* it does not seem practical to adopt that classification here.

Taxonomy: Perkins, 1959. Handb. Ident. Brit. Ins., v. 7, pt. 2 (ai), p. 99-111. —Perkins, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 11: 461. —Townes, Momoi, and Townes, 1965. Amer. Ent. Inst., Mem. 5: 593.

acaudus (Provancher). Que.

Phygadeuon acaudus Provancher, 1882. Nat. Canad. 13 (no. 155): 334 (key); 13 (no. 156): 358. ♀.

arcticus Cushman. N. C.?, Alta., Alaska, B. C., Wash., Calif.? Host: *Acleris gloverana* (Wlshm.), *A. variana* (Fern.).

Phaogenes arcticus Cushman, 1920. U. S. Natl. Mus., Proc. 58: 251. ♂, ♀.

Biology: Pebble and Graham, 1945. Brit. Columbia Lumberman 29: 38, 39, 88.

arogae Gittens and Henry. Idaho, Oreg. Host: *Aroga websteri* Clarke.

Phaogenes arogae Gittens and Henry, 1966. Biol. Soc. Nev., Occas. Papers 12: 1. ♂, ♀.

ater Cresson. Que. s. to Miss., w. to Oreg. Host: *Podosesia syringae* (Harris), *Synanthedon exitiosa* (Say), *S. pyri* (Harris), *S. scitula* (Harris), *S. tipuliformis* (Clerck).

Phaogenes ater Cresson, 1877. Amer. Ent. Soc., Trans. 6: 202. ♀.

Amblyteles macrocephalus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 34. ♂.

cacoeeciae Viereck. N. Y., Mich., Sask., Colo., N. Mex., Utah, Alaska, B. C. Host: *Archips argyrosipilus* (Wlk.), *Choristoneura conflictana* (Wlk.).

Phaogenes cacoeeciae Viereck, 1924. Canad. Ent. 56: 66. ♂, ♀.

Taxonomy: Allen, 1968. Ent. Soc. Amer., Ann. 61: 625, 626-627.

cynarae Bragg. N. H. w. to Wash., s. to Va., Mo., and Calif. Host: *Platyptilia* sp., *P. carduidactyla* (Riley).

Phaogenes cynarae Bragg, 1971. Pan-Pacific Ent. 47: 58. ♂, ♀.

Biology: Lange, 1941. Calif. Agr. Expt. Sta., Bul. 653: 24, 67.

epinotiae Cushman. Maine. Host: *Epinotia nanana* (Treit.), *Coletectonites piceaella* (Kft.).

Phaogenes epinotiae Cushman, 1935. Wash. Acad. Sci., Jour. 25: 547. ♂, ♀.

gaspesianus Provancher. N. S., Que., Maine, Ont., Ohio, Alaska, B. C., Oreg. Host: *Acleris variaria* (Fern.).

Phaeogenes Gaspesianus Provancher, 1882. Nat. Canad. 13: 331. ♀.

Phaeogenes pimploides Bradley, 1918. Brooklyn Ent. Soc., Bul. 13: 98. ♀.

Morphology: Peck, 1937. Canad. Jour. Res., Sect. D (Zool. Sci.) 15: 246, 251.

gilvilabris Allen. N. Y., Pa., Mich., Wis. Host: *Archips rosanus* (L.), *A. semiferanus* (Wlk.), *Sparganothis pettitana* (Rob.).

Phaeogenes gilvilabris Allen, 1968. Ent. Soc. Amer., Ann. 61: 627. ♂, ♀.

haeussleri Uchida. Sakhalin, Japan. Introduced in Conn., N. J., Md., N. C., S. C., and Ind. between 1934 and 1939, apparently without becoming established. Host: *Grapholitha molesta* (Bsk.). *G. molesta* was the target host for introductions of *P. haeussleri* in the U. S. Uchida (1933) gave a redescription for what he believed to be *Phaeogenes japonicus* Ashmead, and after learning that he had misidentified *P. japonicus* he published the name *haeussleri* in reference to his misidentification.

Phaeogenes haeussleri Uchida, 1935. Insecta Matsumurana 9: 82-83. ♂, ♀.

Taxonomy: Uchida, 1933. Insecta Matsumurana 7: 155-156.

Biology: Haeussler, 1940. U. S. Dept. Agr., Tech. Bul. 728: 42-43. —Iwata, 1961. Acta Hym. 1: 316.

Morphology: Iwata, 1958. Acta Hym. 1: 71 (ovarian egg). —Iwata, 1961. Acta Hym. 1: 137 (ovary and egg).

hebe (Cresson). N. Y., Ill.

Ichneumon Hebe Cresson, 1867. Amer. Ent. Soc., Trans. 1: 306. ♂, ♀.

hebrus (Cresson). Que. s. to Fla., w. to Wash.

Ichneumon hebrus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 306. ♂, ♀.

Phygadeuon insignis Provancher, 1875. Nat. Canad. 7: 179. ♀. Barron (1975) gave label data for the holotype.

Ichneumon ustus Provancher, 1882. Nat. Canad. 13 (no. 154): 305 (key); 13 (no. 155): 324. ♂ (♀ misdet.). A lectotype was selected by Barron (1975).

Taxonomy: Allen, 1968. Ent. Soc. Amer., Ann. 61: 625-626. —Barron, 1975. Nat. Canad. 102: 490-491, 579.

laevigatus (Cresson). Colo.

Ichneumon laevigatus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 176. ♀. Preocc. by Gravenhorst, 1820; not renamed here because of taxonomic uncertainties.

Phaeogenes levigatus Dalla Torre, 1902. Cat. Hym., v. 3, p. 746. Unjustified emend.; preocc. in *Phaeogenes* by *I. laevigatus* Cresson.

laricellae Mason. N. B., Ont., Wis., Oreg. Host: *Argyresthia laricella* Kft.

Phaeogenes laricellae Mason, 1961. Canad. Ent. 93: 3. ♂, ♀.

Morphology: Eidt, 1962. Canad. Ent. 94: 32 (final-instar larva).

maculicornis hariolus (Cresson), n. status. N. S. w. to Alaska, s. to Mass., Mich., N. Mex., and Oreg. Host: *Acleris variaria* (Fern.), *Argyrotaenia dorsolana* Dyar, *Choristoneura conflictana* (Wlk.), *C. fumiferana* (Clem.), *C. occidentalis* Free., *C. pinus* Free., *Croesia semipurpurana* (Kft.).

Ichneumon hariolus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 305. ♀.

Phygadeuon (Bathymetis) spinicoxus Viereck, 1905. Kans. Acad. Sci., Trans. 19: 289. ♀. N. syn.

Phygadeuon (Dirophanes) plesius Viereck, 1912. U. S. Natl. Mus., Proc. 42: 148. ♀.

Dirophanes banksianae Allen, 1967. Canad. Ent. 99: 893. ♀.

Biology: Dixon and Benjamin, 1963. Jour. Econ. Ent. 56: 267.

Morphology: Peck, 1937. Canad. Jour. Res., Sect. D (Zool. Sci.) 15: 246, 251.

maculicornis maculicornis (Stephens). Europe. Introduced in Ont. in 1950, 1955, and 1956. At the time of release it was not suspected that the Nearctic *maculicornis hariolus* (Cresson) was conspecific. The target species for releases in Ont. was the native *Choristoneura fumiferana* (Clem.).

Ichneumon maculicornis Stephens, 1835. Illus. Brit. Ent., v. 7, p. 136. ♂, ♀.

- Phaogenes scutellaris* Wesmael, 1845 (1844). [Brussels] Acad. Roy. de Belg., Nouveaux Mem. 18: 183. ♀.
- Taxonomy: Morley, 1902. Ent. Monthly Mag. 38: 119 (syn.). —Perkins, 1953. Brit. Mus. (Nat. Hist.) Ent., Bul. 3: 108.
- mellinus** (Provancher). Que. s. to N. J., w. to Mich. and Mo. Host: *Ennomos subsignarius* (Hbn.), *Archips semiferanus* (Wlk.), *Croesia semipurpurana* (Kft.).
- Phaogenes mellinus* Provancher, 1875. Nat. Canad. 7: 315. ♀. Barron (1975) rejected the "lectotype" selected by Gahan and Rohwer (1918), but thought the specimen fragment he regarded as the holotype to be conspecific with the Gahan and Rohwer "lectotype".
- Taxonomy: Provancher, 1879. Nat. Canad. 11: 39. —Gahan and Rohwer, 1918. Canad. Ent. 50: 133. —Barron, 1975. Nat. Canad. 102: 507.
- nigridens** Wesmael. Mass.; Europe. Introduced. Host: *Ostrinia nubilalis* (Hbn.).
- Phaogenes nigridens* Wesmael, 1845 (1844). [Brussels] Acad. Roy. de Belg., Nouveaux Mem. 18: 192. "♂♂," ♀.
- Taxonomy: Cushman, 1932. In Smith, U. S. Dept. Agr., Tech. Bul. 331: 6 (redescription of adult). —Perkins, 1953. Brit. Mus. (Nat. Hist.) Ent., Bul. 3: 133. —Allen, 1968. Ent. Soc. Amer., Ann. 61: 628-629.
- Biology: Smith, 1932. U. S. Dept. Agr., Tech. Bul. 331: 21-45. —Baker, 1944. Ent. Soc. Wash., Proc. 46: 134. —Baker, Bradley, and Clark, 1945. U. S. Dept. Agr., Tech. Bul. 983: 113-119. —Arbuthnot, 1950. Jour. Econ. Ent. 43: 425.
- Morphology: Goidanich, 1931. R. Ist. Super. Agr., Lab. di Ent., Bol. 4: 85-90. —Smith, 1932. U. S. Dept. Agr., Tech. Bul. 331: 5-21.
- ophthalmicus americanus** Allen. Colo., Wash. *P. ophthalmicus ophthalmicus* Wesmael occurs in Europe.
- Phaogenes ophthalmicus americanus* Allen, 1968. Ent. Soc. Amer., Ann. 61: 627. ♂, ♀.
- orbis** Provancher. Que.
- Phaogenes orbis* Provancher, 1882. Nat. Canad. 13: 332. ♂.
- Taxonomy: Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 41 (female described).
- osrufus** (Davis). Ill.
- Eurylabus osrufus* Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 353. ♀.
- Eurylabus varufus* (!) Nason, 1905. Ent. News 16: 148.
- phycidis** Ashmead, Que., N. H., Mass., Conn., N. Y., Minn. Host: *Acrobasis betulella* Hlst., *A. rubrifasciella* Pack., *A. silviella* Ely.
- Phaogenes phycidis* Ashmead, 1898. In Dimmock and Ashmead, Ent. Soc. Wash., Proc. 4: 169. ♀.
- Biology: Daviault, 1935. Nat. Canad. 62: 318, 319.
- sitkensis** (Ashmead). Southeastern Alaska. Known only from the holotype which has the thyridia only faintly indicated.
- Eriplatys sitkensis* Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 162.
- Taxonomy: Townes, 1944. Amer. Ent. Soc., Mem. 11: 302.
- soriculatus** (Provancher). Que., N. Y., N. C.
- Cryptus soriculatus* Provancher, 1881. Nat. Canad. 13: 362. ♂.
- testaceicornis** (Cameron). Nev.
- Bathymetis testaceicornis* Cameron, 1908. Amer. Ent. Soc., Trans. 34: 245. ♀.
- Taxonomy: Morley, 1914. Ann. and Mag. Nat. Hist. (8) 14: 409. —Townes, 1961. Ent. Soc. Wash., Proc. 63: 104.
- walshiae** Ashmead. N. J. s. to Fla., w. to Ill., Kans., and Miss. Host: *Walshia "amorphella"* Clem., *Aucylis comptana* (Froel.), *Epiblema strenuatum* (Wlk.), *Grapholitha molesta* (Bsk.), *Laspeyresia caryana* (Fitch), *Rhyacionia frustrana* (Comst.), Phalonidae. In the U. S. Natl. Museum collection there is a female specimen from Shady, Fla. having the

apical tergites of the abdomen black; it demonstrates the impracticality of recognizing a northern and southern subspecies.

Phygadeuon walshiae Riley, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 153. Nomen nudum.

Phaogenes walshiae Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 205. ♂, ♀.

Phaogenes (Centeterus) ineptifrons Gahan, 1919. U. S. Natl. Mus., Proc. 55: 113. ♂, ♀.

Proseus walshiae var. *australis* Cushman, 1933. U. S. Natl. Mus., Proc. 82: 5. ♂, ♀. N. syn.

Biology: Haden, 1935. Univ. Del. Agr. Expt. Sta., Bul. 194: 20-35.

TRIBE GYRODONTINI

This is the Ichneumonini in the sense of Heinrich and, in part, the Joppini in the sense of Townes. It is a very large tribe of worldwide distribution. Heinrich (1967) divided the tribe into five subtribes, four of which are represented in North America.

Taxonomy: Heinrich, 1967. Synopsis and Reclassif. Ichneumoninae Stenopneusticae Africa So. of Sahara, v. 1, p. 26-27; v. 3, p. 486-487 (keys to subtribes).

SUBTRIBE GYRODONTINA

Genus CRATICHNEUMON Thomson

Craticheumon Thomson, 1893. Opusc. Ent. 18: 1945.

Type-species: *Ichneumon luteiventris* Gravenhorst. Desig. by Ashmead, 1900.

Lareiga Cameron, 1903. Ztschr. System. Hym., Dipt. 3: 13.

Type-species: *Lareiga rufifemorata* Cameron. Monotypic.

Belargea Cameron, 1903. Ztschr. System. Hym., Dipt. 3: 15.

Type-species: *Belargea albomaculata* Cameron. Monotypic. The type-species is regarded as a synonym of *C. rufifemorata* (Cameron).

Odontojoppa Cameron, 1903. Ztschr. System., Dipt. 3: 16, 177.

Type-species: *Odontojoppa metallica* Cameron. Monotypic.

Syaonia Cameron, 1903. Ent. Soc. London, Trans. 51: 224.

Type-species: *Syaonia rufofacies* Cameron. Monotypic.

Leptothecus Cameron, 1903. Entomologist 36: 240.

Type-species: *Leptothecus rufomaculatus* Cameron. Monotypic.

Tanyjoppa Cameron, 1904. Ztschr. System. Hym., Dipt. 4: 217.

Type-species: *Tanyjoppa sanguineoplagiata* Cameron. Monotypic.

Lissichneumon Cameron, 1906. Entomologist 39: 227.

Type-species: *Lissichneumon levis* Cameron. Monotypic.

Nimbolareiga Heinrich, 1969 (1968). Synopsis and Reclassif. Ichneumoninae

Stenopneusticae Africa So. of Sahara, v. 4, p. 933.

Type-species: *Nimbolareiga merucapitis* Heinrich. Monotypic and orig. desig.

This is a very large and widely distributed genus which is particularly difficult taxonomically.

Taxonomy: Townes and Townes, 1973. Amer. Ent. Inst., Mem. 19: 304 (generic syn.).

acronictae Heinrich. Que., Maine, N. Y., N. C. Host: *Acrionicta* sp.

Craticheumon acronictae Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 125. ♂, ♀.

Taxonomy: Heinrich, 1971. Nat. Canad. 98: 984.

alternans (Provancher). Que., Maine.

Phygadeuon alternans Provancher, 1882. Nat. Canad. 13 (no. 155): 335 (key); 13 (no. 156): 358. ♀.

Taxonomy: Heinrich, 1971. Nat. Canad. 98: 986-989 (male described and included in key).

anisotae Heinrich. Que. s. to Va., w. to Wis. Host: *Anisota senatoria* (J. E. S.), *Dryocampa rubicunda* (F.).

Craticheumon anisotae Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 119. ♂, ♀.

annulatifipes (Provancher). Que. s. to D. C., w. to Mich. and Mo.

Phaogenes annulatifipes Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 43. ♀.

Amblyteles (Pterocormus) quintilis Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 354, 357. ♂.

Cratichneumon annulatus facetops Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 147. ♂. N. syn.

Taxonomy: Heinrich, 1959. Ent. News 70: 214 (syn.).

annulatus (Provancher). Que. s. to Pa., w. to Mich.

Mesostenus annulatus Provancher, 1875. Nat. Canad. 7: 265. ♂.

arizonensis (Viereck). Ariz. According to Heinrich (1961) this species is closely related to *takomae* Heinrich.

Ichneumon (Eurylabus) arizonensis Viereck, 1905. Kans. Acad. Sci., Trans. 19: 295. ♀.

ashmeadi (Schulz). Que., Maine, N. H., Colo., Alaska, B. C., Wash., Oreg.

Ichneumon imitator Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 151. ♂. Preocc. by Villers, 1789.

Ichneumon Ashmeadi Schulz, 1906. Spolia Hym., p. 128. N. name for *I. imitator* Ashmead.

astutus (Holmgren). Calif.

Ichneumon astutus Holmgren, 1869 (1868). Eug. Resa, pt. 2 (Zool.), sect. 1 (Ins.), p. 394.

Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 106.

austropiceipes Heinrich. Ga., Miss.

Cratichneumon austropiceipes Heinrich, 1971. Nat. Canad. 98: 992. ♂, ♀.

boreoalpinus Heinrich. Newfoundland (insular), N. H.

Cratichneumon boreoalpinus Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 168. ♀.

boreovagans Heinrich. Que., Maine. According to Heinrich, this may be a northern variant of *C. paraparatus* Heinrich.

Cratichneumon boreovagans Heinrich, 1962. Canad. Ent. Sup. 29: 870. ♀.

brevipennis (Cresson). Maine, N. H., Mass., R. I., Pa., Md., Va., Fla., Ont., Iowa, Mo., Colo.
Host: *Faronta diffusa* (Wlk.).

Ichneumon brevipennis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 174. ♀.

Ischnus volens Cresson, 1864. Ent. Soc. Phila., Proc. 3: 192. ♂.

Ichneumon brevipennis var. *obsoletus* Riley, 1877. Mo. State Ent., Ann. Rpt. 9: 55. ♀.

Preocc. by Gmelin, 1790 and Fabricius, 1798; Heinrich (1961) erroneously stated that the holotype is lost.

Taxonomy: Heinrich, 1959. Ent. News 70: 214 (syn.). —Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 170.

broweri Heinrich. Maine.

Cratichneumon broweri Heinrich, 1971. Nat. Canad. 98: 998. ♀.

carolinae Heinrich. N. C., Ga.

Cratichneumon carolinae Heinrich, 1971. Nat. Canad. 98: 991. ♀.

citrinops kincaidi (Ashmead). Sask., Alaska. *C. citrinops citrinops* (Wesmael) is European.

Ichneumon kincaidi Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 152. ♂.

Cratichneumon alaskensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 157. ♂.

Taxonomy: Heinrich, 1959. Ent. News 70: 213 (status).

duplicatus (Say). Mass. s. to Va., w. to Wis.

Ichneumon duplicatus Say, 1836. Boston Jour. Nat. Hist. 1: 230. ♂.

Taxonomy: Townes and Townes, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 288.

erythroscuta Heinrich. Mass. Heinrich supposed that *erythroscuta* may prove to be the female of *C. vaccinii* Heinrich.

Cratichneumon erythroscuta Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 142. ♀.

expers Heinrich. N. C., n. Fla., Miss.

Cratichneumon expers Heinrich, 1972. Nat. Canad. 99: 178. ♂, ♀.

Cratichneumon expers circumflavidus Heinrich, 1972. Nat. Canad. 99: 180. ♀. N. syn.

facetus (Cresson). R. I. s. to N. C., w. to Mich. and Ky.

Ichneumon facetus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 311. ♂.

- ferrugops** Heinrich. Que., Ont., Mich.
Cratichneumon ferrugops Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 124. ♀.
- flaschkai** Heinrich. Colo.
Cratichneumon flaschkai Heinrich, 1973. Nat. Canad. 100: 461, 463. ♂, ♀.
- flavipectus** (Provancher). Que. s. to Ga., w. to Mich. and Miss.
Cryptus flavipectus Provancher, 1879. Nat. Canad. 11 (no. 125): 134. "♀" = ♂.
Ichneumon pygmaeus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 350. ♀. Preocc. by Poda, 1761.
Cratichneumon ericaeus Townes, 1944. Amer. Ent. Soc., Mem. 11: 335. N. name for *I. pygmaeus* Davis.
Cratichneumon flavipectus mississippi Heinrich, 1971. Nat. Canad. 98: 989. N. syn.
- floridensis** Heinrich. Fla.
Cratichneumon floridensis Heinrich, 1972. Nat. Canad. 99: 181. ♂, ♀.
- fuscior** Heinrich. Ga.
Cratichneumon fuscior Heinrich, 1971. Nat. Canad. 98: 996. ♀.
- georgius** Heinrich. Southern Ga.
Cratichneumon georgius Heinrich, 1971. Nat. Canad. 98: 995. ♀.
- horani** Heinrich. Northern Fla., Miss.
Cratichneumon horani Heinrich, 1972. Nat. Canad. 99: 180. ♂, ♀.
- howdeni** Heinrich. N. C.
Cratichneumon howdeni Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 172. ♀.
- insulae** Heinrich. R. I., N. J.
Cratichneumon insulae Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 151. ♀.
- involutus** (Cresson). Colo.
Ichneumon involutus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 183. ♀.
- naumanni** Heinrich. Ga.
Cratichneumon naumanni Heinrich, 1971. Nat. Canad. 98: 994. ♀.
- nigritarius acerbus** (Cresson). Newfoundland (Labrador) s. to N. Y., w. to S. Dak. and Colo.
 Host: *Isturgia truncataria* (Wlk.), *Protoboarmia porcelaria* (Gn.), *Semiothisa sexmaculata* (Pack.). *C. nigritarius nigritarius* (Gravenhorst) is Eurasian.
Ichneumon acerbus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 293. ♂.
Ichneumon corvinus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 145. ♀.
- Taxonomy: Heinrich, 1953. Wash. Acad. Sci., Jour. 43: 149-150.
- paraparatus** Heinrich. N. Y., N. J., Md., N. C., S. C. Heinrich's description of *paraparatus* was based upon 12 female specimens, apparently including the specimen ("neallotype") upon which Heinrich (1961) based his description of what was presumed to be the female of *C. vinnulus* (Cresson). Because the description of *paraparatus* was not accompanied by the description of a female which could more definitely be associated with *vinnulus* males, the status of the name *paraparatus* seems dubious.
Cratichneumon paraparatus Heinrich, 1962. Canad. Ent. Sup. 29: 869. ♀.
- Taxonomy: Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 100, 138-140. — Heinrich, 1971. Nat. Canad. 98: 988 (key including male thought possibly to be conspecific with *paraparatus*).
- paratus** (Say). Que. s. to Fla., w. to N. Dak. and Mo. Host: *Lambdina pellucidaria* (G. and R.), *Heterocampa guttivitta* (Wlk.), *H. mantee* (Dblly.).
Ichneumon parata Say, 1829. Contrib. Maclurian Lyceum to Arts and Sci. 1: 68. ♂.
Ichneumon annulipes Cresson, 1864. Ent. Soc. Phila., Proc. 3: 170. ♀.
Ichneumon pusillus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 171. ♀.
Cratichneumon paratus pseudovinnulus Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 137. ♂, ♀. N. syn.
- pertenuis** Heinrich. Maine, N. Y.
Cratichneumon pertenuis Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 169. ♀.
- petuleus** (Cresson). Southern Calif.
Ichneumon petuleus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 185. ♀.
- piceipes** Heinrich. Que., Maine, Mich.
Cratichneumon piceipes Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 130. ♂, ♀.

- Taxonomy: Heinrich, 1971. Nat. Canad. 98: 993.
- pilosulus** (Provancher). Newfoundland (insular), Que., Maine, N. H., Pa., Mich., S. Dak.
Ichneumon pilosulus Provancher, 1875. Nat. Canad. 7: 25. ♀.
- popofensis** Ashmead. Que., Alaska. Although this species was recorded from Que. by Townes and Townes (1951), Heinrich (1961) did not mention the species in his revision of the stenopneusticae of the Northeast. Ashmead appears to have correctly associated the sexes of *popofensis*, and the suppression of *popofensis* as a synonym of *yakutatensis* Ashmead by Heinrich (1959) appears to be incorrect.
Cratichneumon popofensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 159. ♂, ♀.
- Taxonomy: Townes and Townes, 1951. U. S. Dept. Agr., Agr. Monog. 2: 288. — Heinrich, 1959. Ent. News 70: 214.
- promptus** (Cresson). Que., Maine, N. H., Man. Host: *Protoarmia porcelaria* (Gn.).
Ichneumon promptus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 152. ♂, ♀.
- proximus** (Cresson). N. Y. s. to Ala., w. to Ill. Host: *Symmerista canicosta* Francel.
Ischnus proximus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 187. ♂.
Ichneumon sagus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 294. ♀ (male misdet.).
- pseudanisotae** Heinrich. N. Y., N. J., Md.
Cratichneumon pseudanisotae Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 133. ♀.
- pteridis** Townes. Newfoundland (insular), Que., Maine, N. H., N. Y., Pa., Ont., Mich., Man., Alaska. Host: *Ectropis crepuscularia* (D. and S.), *Protoarmia porcelaria* (Gn.), *Semiiothisa* sp., *Heterocampa guttivitta* (Wlk.).
Phygadeuon proximus Provancher, 1874. Nat. Canad. 6: 283. ♀. Preocc. in *Cratichneumon* by Cresson, 1864.
Cratichneumon pteridis Townes, 1944. Amer. Ent. Soc., Mem. 11: 339. N. name for *P. proximus* Provancher.
- puncticoxa** Heinrich. Que., Maine, Mass., N. Y., Pa., Mich.
Cratichneumon puncticoxa Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 133. ♂, ♀.
- Taxonomy: Heinrich, 1971. Nat. Canad. 98: 986 (amendments to description).
- remanens** Heinrich. Maine, N. Y., Md., N. C., Ont.
Cratichneumon remanens Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 157. ♂.
- Taxonomy: Heinrich, 1971. Nat. Canad. 98: 988 (inclusion in revised key).
- ritus** Heinrich. Maine, Va., N. C., Ont., Mich., Ind., Iowa. Host: *Phigalia titea* (Cramer).
Cratichneumon ritus Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 143. ♂, ♀.
- rubricoides** Heinrich. Que., Maine, N. Y., N. C., Mich.
Cratichneumon rubricoides Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 165. ♂, ♀.
- Taxonomy: Heinrich, 1971. Nat. Canad. 98: 990-991 (additional differences from *rubricus* [Provancher]).
- rubricops** Heinrich. Que., Maine, N. Y., Ont.
Cratichneumon rubricops Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 167. ♂, ♀.
- Taxonomy: Heinrich, 1971. Nat. Canad. 98: 988 (inclusion of male in revised key).
- rubricus** (Provancher). P. E. I., Que., Maine, N. Y., Mich.
Phygadeuon rubricus Provancher, 1882. Nat. Canad. 13 (no. 155): 335 (key); 13 (no. 156): 358. ♀.
- Taxonomy: Heinrich, 1971. Nat. Canad. 98: 989 (inclusion of male in revised key).
- russatus** (Cresson). Colo., Ariz., Idaho, B. C., Wash., Oreg., Calif. Townes (1961) said that *russatus* is probably a synonym of *astutus* (Holmgren).
Ichneumon russatus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 183. ♀.
Ichneumon (*Barichneumon*) *citrinifacialis* Viereck, 1905. Kans. Acad. Sci., Trans. 19: 297. ♂.
- Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 106.
- scitulus** (Cresson). Que. s. to Va., w. to Ill.
Ischnus scitulus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 193. ♂.

Ichneumon nanus Cresson, 1877. Amer. Ent. Soc., Trans. 4: 184. ♀. Preocc. by Ratzeburg, 1848.

Amblyteles nanodes Cushman, 1925. Wash. Acad. Sci., Jour. 15: 388. N. name for *I. nanus* Cresson.

Taxonomy: Heinrich, 1971. Nat. Canad. 98: 989 (inclusion of male in revised key).

signatipes (Cresson). Que. s. to D. C., w. to Kans. Townes and Townes (1951) said that *signatipes* males had often been misidentified as *C. duplicatus* (Say), and Heinrich (1961, 1962) erroneously suppressed *signatipes* as a synonym of *C. w-album* (Cresson) (which see).

Ichneumon signatipes Cresson, 1867. Amer. Ent. Soc., Trans. 1: 308. ♀.

Ichneumon lobatus Provancher, 1875. Nat. Canad. 7 (1): 23 (key); 7 (3): 77. ♂.

Ichneumon? (*Stiboscopus?*) *oryxicornis* Viereck, 1905. Kans. Acad. Sci., Trans. 19: 324. ♂.

Amblyteles (*Barichneumon?*) *duplicatiformis* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey, Bul. 22: 354, 360. ♂.

Taxonomy: Townes and Townes, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 289. —Heinrich, 1961 (1960); 1962. Canad. Ent. Sup. 18: 126-130; 29: 868.

suadus (Cresson). Que., Maine, R. I., Conn., N. Y., Pa., Ont., Wis.

Ichneumon suadus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 160. ♂.

Taxonomy: Heinrich, 1971. Nat. Canad. 98: 988 (inclusion of male in revised key).

subfilatus Heinrich. Que. s. to N. C., w. to Mich. Host: *Lambda pellucidaria* (G. and R.).

Cratichneumon subfilatus Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 131. ♂, ♀.

sublatus (Cresson). Que. s. to Va., w. to Ill. Host: *Heterocampa biundata* Wlk., *H. guttivitta* (Wlk.), *Hydria prunivora* (Ferg.).

Ischnus sublatus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 186. ♂.

Ichneumon praeus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 151. ♀.

Biology: Patch, 1908. Maine Agr. Expt. Sta., Bul. 161: 340.

takomae Heinrich. Southern Maine?, Md.

Cratichneumon takomae Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 116. ♂.

Taxonomy: Heinrich, 1971. Nat. Canad. 98: 984.

tyloidifer Heinrich. Maine, N. Y., N. J., Pa., Md., Va., N. C., Ont., Mich.

Cratichneumon tyloidifer Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 115. ♂.

unifasciatorius (Say). Que. w. to S. B. C., s. to Fla., Utah, and Oreg. Host: *Orygia antiqua* (L.),

O. leucostigma (J. E. S.), *Hemileuca* sp., *Diacrista virginica* (F.), *Halisdota argentata* (Pack.), *H. caryae* (Harris), *H. tessellaris* (J. E. S.), *Acronicta obliqua* (J. E. S.).

Ichneumon unifasciatorius Say, 1825. Amer. Ent. 2: 48. ♂.

Ichneumon malacus Say, 1829. Contrib. Maclurian Lyceum to Arts and Sci. 1: 72. ♀.

Ichneumon niger Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 302. ♂, ♀.

Preocc. by Gmelin, 1790 and Fabricius, 1798.

Ichneumon Afer Cresson, 1864. Ent. Soc. Phila., Proc. 3: 138. ♀.

Ichneumon scriptifrons Cresson, 1877. Amer. Ent. Soc., Trans. 6: 144. ♂.

Ichneumon Vancouveriensis Provancher, 1885. Canad. Ent. 17: 114. ♂.

Ichneumon aterrimus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 30. ♀.

Preocc. by Foerster, 1771.

vaccinii Heinrich. Que., Maine, Pa., Ont., Mich.

Cratichneumon vaccinii Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 141. ♂.

valdefuscus Heinrich. N. Y. s. to n. Fla., w. to La.

Cratichneumon valdefuscus Heinrich, 1972. Nat. Canad. 99: 177. ♂, ♀.

vescus (Provancher). Que., Maine, N. H., Vt., N. Y., Pa., Ont., Mich., N. Mex., Alta., B. C. Host: *Protobaermia porcelaria* (Gn.).

Ichneumon vescus Provancher, 1877. Nat. Canad. 9: 9. ♂.

vinnulus (Cresson). Que. s. to N. C., w. to Wis. and Ky.

Ischnus vinnulus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 189. ♂.

Cratichneumon gracilior Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 147. ♀ (male misdet.).

Taxonomy: Heinrich, 1962. Canad. Ent. Sup. 29: 868 (syn.).

- vockerothi** Heinrich. N. H. Ecology: The holotype was collected on the summit of Mt. Washington, N. H. (elevation 6100 to 6288 ft.).
Cratichneumon vockerothi Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 158. ♀.
- w-album** (Cresson). Que. s. to Ga., w. to Wis. and Ala. Host: *Heterocampa guttivitta* (Wlk.), *Dryocampa rubicunda rubicunda* (F.). Heinrich (1959, 1961) erroneously applied the name *w-album* to *C. signatipes* (Cresson) because of the fact that Cresson's (1916) lectotype for *w-album* does not agree in decisive respects with the original description. Although Cresson made no mention of variation to indicate that he used more than one of his syntypes in writing his original description of *w-album*, the fact that he had more than one type-specimen is indicated by his statement: "Hab[itat]— Pennsylvania (C. A. Blake); Delaware (Dr. Wilson); New Jersey (Cresson)." Unless it can be shown that Cresson's (1916) lectotype from Pa. was not the specimen from C. A. Blake, there is no basis for disregarding it as the legitimate lectotype. Although it is possible that Cresson's lectotype is not one of the original syntypes, but instead a specimen acquired later and used in making his 1867 expanded description of *w-album*, lack of agreement with the original description is not proof of this.
Ischnus W-album Cresson, 1864. Ent. Soc. Phila., Proc. 3: 191. ♂.
Ischnus variegatus Provancher, 1875. Nat. Canad. 7: 250. ♂.
Cratichneumon variegatus insignitus Heinrich, 1971. Nat. Canad. 98: 985. ♂, ♀. N. syn.
- Taxonomy: Cresson, 1867. Amer. Ent. Soc., Trans. 1: 309. —Cresson, 1877. Amer. Ent. Soc., Trans. 6: 179-180 (redescription based on specimens from Canada, N. H., and Mass.). —Cresson, 1916. Amer. Ent. Soc., Mem. 1: 63 (lectotype selection). —Heinrich, 1959. Ent. News 70: 190. —Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 122-124, 126-127, 129.
- yakutatensis** Ashmead. Alaska.
Cratichneumon yakutatensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 157. ♂.

Genus CRYPTEFFIGIES Heinrich

- Aculichneumon* subg. *Crypteffigies* Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 17.
 Type-species: *Cratichneumon confusus* Ashmead. Monotypic and orig. desig.
- According to Heinrich (1969) *Crypteffigies* is Holarctic.
- Taxonomy: Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 178-180. —Heinrich, 1969 (1968). Synopsis and Reclassif. Ichneumoninae Stenopneusticae Africa So. of Sahara, v. 5, p. 1106.
- confusa** (Ashmead). Que., N. Y., Alaska, B. C.
Cratichneumon confusus Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 158. ♂.
Plectocryptus popofensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 183. ♀.
Plectocryptus yakutatensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 183. ♀.
- megalura** Heinrich. Maine, Ont. Specimens in the U. S. Natl. Museum collection appear to indicate that *megalurus* will not likely prove to be deserving of anything more than suppression as a synonym of *confusus*.
Aculichneumon (Crypteffigies) confusus megalurus Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 180, 205. ♀. The alternate spelling "*mogalurus*" appears on p. 205.
- Taxonomy: Heinrich, 1971. Nat. Canad. 98: 1003-1004 (description of male and elevation to species status).

Genus HOMOTHERUS Foerster

- Homotherus* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 185.
 Type-species: *Ichneumon locutor* Thunberg. Monotypically included and desig. by Perkins, 1960.
- This is a small genus of Holarctic distribution.
- Taxonomy: Perkins, 1960. Handb. Ident. Brit. Ins., v. 7, pt. 2 (aII), p. 153. —Heinrich, 1971. Nat. Canad. 98: 1000 (key for some males).
- erythromelas** (MacLachlan). Northern N. W. T.; w. Greenland. Dr. W. R. M. Mason informed me that there are specimens from Greenland in the Canadian National Collection, but

none from Canada. The holotype, which is from northern Ellesmere Island is apparently the only Canadian specimen known.

Ichneumon erythromelas MacLachlan, 1879 (1878). Linn. Soc. Zool., Jour. 14: 106. ♀.

Taxonomy: Strand, 1905. Rpt. Second Norwegian Arctic Exped. in the "Fram" 1898-1902, no. 3, p. 6. — Roman, 1930. Ann. and Mag. Nat. Hist. (10) 5: 282. — Heinrich, 1962. Canad. Ent. Sup. 29: 871-872.

magus (Wesmael). Newfoundland (insular); Greenland; Europe.

Ichneumon magus Wesmael, 1855. [Brussels] Acad. Roy. de Belg., Bul. 22: 389. ♂, ♀.

Homotherus magus nearcticus Heinrich, 1976 (1975). Nat. Canad. 102: 753, 766. ♀. N. syn.

Based upon a single female from insular Newfoundland. The variant spelling "nearcticus" which appears on p. 583 (French resume and English abstract) is here rejected in favor of *nearcticus*.

Phaeogenes nitidus Bridgman, 1886. Ent. Soc. London, Trans. 34: 337. ♂.

Taxonomy: Roman, 1938. In Carpenter, Ann. and Mag. Nat. Hist. (11) 1: 538. — Perkins, 1953. Brit. Mus. (Nat. Hist.) Ent., Bul. 3: 116, 134, 136. — Perkins, 1960. Handb. Ident. Brit. Ins., v. 7, pt. 2 (a(ii)), p. 121, 138, 145, 147.

porcelariae Heinrich. Newfoundland (Labrador), N. B., Maine, Ont., Mich., Man. Host:

Eufidonia notataria (Wlk.), *Protoboarnia porcelaria* (Gn.), *Semiothisa* sp. '

Homotherus porcelariae Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 173. ♂, ♀.

pseudoporcelariae Heinrich. Newfoundland (insular), Maine.

Homotherus pseudoporcelariae Heinrich, 1971. Nat. Canad. 98: 1001. ♂, ♀.

semiaoplus Heinrich. Newfoundland (insular), Que., Maine, N. Y., N. C., Ont., Mich.

Homotherus semiaoplus Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 173. ♂, ♀.

smileyi Heinrich. N. Y.

Homotherus smileyi Heinrich, 1968. Nat. Canad. 95: 717. ♂, ♀.

townesi Heinrich. Newfoundland (insular), Que., Maine, N. Y., N. C., Ont., Mich.

Homotherus townesi Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 175. ♂, ♀.

Genus EUPALAMUS Wesmael

Eupalamus Wesmael, 1845 (1844). [Brussels] Acad. Roy. de Belg., Nouveaux Mem. 18: 14.

Type-species: *Eupalamus oscillator* Wesmael. Monotypic.

Lagenesta Cameron, 1901. Ann. and Mag. Nat. Hist. (7) 7: 376.

Type-species: *Lagenesta ferruginea* Cameron. Monotypic.

Xestojoppa Cameron, 1901. Ann. and Mag. Nat. Hist. (7) 7: 379.

Type-species: *Xestojoppa olivacea* Cameron. Monotypic.

Cosmiojoppa Cameron, 1902. Ztschr. System. Hym. Dipt. 2: 395.

Type-species: *Cosmiojoppa violaceipennis* Cameron. Monotypic.

Lynteria Cameron, 1904. Ztschr. System. Hym. Dipt. 4: 220.

Type-species: *Lynteria violaceipennis* Cameron. Monotypic. The type-species is a synonym of *E. cyanopteryx* Townes, Townes, and Gupta.

Faesula Cameron, 1904. Ztschr. System. Hym. Dipt. 4: 338.

Type-species: *Faesula maculata* Cameron. Monotypic.

Mesophadnus Cameron, 1907. Tijdschr. v. Ent. 50: 75.

Type-species: *Mesophadnus spilopterus* Cameron. Monotypic.

Taxonomy: Townes, Momi, and Townes, 1965. Amer. Ent. Inst., Mem. 5: 447 (syn.).

andersoni Heinrich. B. C.

Eupalamus andersoni Heinrich, 1961. Canad. Ent. Sup. 23: 385. ♀.

melacneme Heinrich. Que., Ont.

Eupalamus melacneme Heinrich, 1961. Canad. Ent. Sup. 23: 386. ♂, ♀.

Genus ANISOPYGUS Kriechbaumer

Anisopygus Kriechbaumer, 1888. Wien. Mus. der Naturgesch., Ann. 3: 36.

Type-species: *Amblyteles pseudonymus* Wesmael. Monotypic.

- americanus** Heinrich. Newfoundland (insular) w. to S. B. C., s. to Maine, Wis., and Calif. Host: *Ichthyura apicalis* Wlk.
Anisopygus americanus Heinrich, 1961. Canad. Ent. Sup. 23: 379. ♂, ♀.
pseudonymus *nearticus* Heinrich. Colo., Alta., B. C. Host: Notodontid. *A. pseudonymus pseudonymus* (Westm.) is Eurasian. Heinrich's description of *p. nearticus* seems to indicate that the difference from the nominate form are so slight as to make the distinction of dubious worth.
Anisopygus pseudonymus nearticus Heinrich, 1961. Canad. Ent. Sup. 23: 378. ♂, ♀.

Genus MELANICHNEUMON Thomson

- Melanichneumon* Thomson, 1893. Opusc. Ent. 18: 1954.
 Type-species: *Ichneumon spectabilis* Holmgren. Desig. by Ashmead, 1900.
 Taxonomy: Heinrich, 1972. Nat. Canad. 99: 201-203 (key to spp. of southeastern U. S.).
absconditus (Provancher). Newfoundland (insular), Maine, N. H., N. C., Mich., Colo., Alta., Wash.
Ichneumon absconditus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 31. ♂.
disparilis (Cresson). Maine s. to n. Fla., w. to Mich. and La.
Ichneumon disparilis Cresson, 1867. Amer. Ent. Soc., Trans. 1: 307. ♀.
Melanichneumon disparilis flavidops Heinrich, 1972. Nat. Canad. 99: 203. ♂, ♀. N. syn.
dreisbachi Heinrich. Maine, Mich.
Melanichneumon (Melanichneumon) dreisbachi Heinrich, 1962. Canad. Ent. Sup. 26: 585. ♂, ♀.
flavicarina Heinrich. Que., Maine, Ont., Mich., Man. Host: *Protobernia porcelaria* (Gn.).
Melanichneumon (Melanichneumon) flavicarina Heinrich, 1962. Canad. Ent. Sup. 26: 594. ♂, ♀. The variant spelling "*flavocarina*" is on p. 583, but Peck (1964) made the first revisor decision in favor of *flavicarina*.
Melanichneumon flavicarina(!) Heinrich, 1973. Nat. Canad. 100: 465.
 Taxonomy: Peck, 1964. Ent. Soc. Canada, Mem. 35: 892.
foxleei Heinrich. Southern B. C.
Melanichneumon (Melanichneumon) foxleei Heinrich, 1962. Canad. Ent. Sup. 26: 586. ♂.
heiligbrodtii (Cresson). Fla., Tex.; Mexico.
Ichneumon Heiligbrodtii Cresson, 1877. Amer. Ent. Soc., Trans. 6: 168. ♂.
 Taxonomy: Heinrich, 1962. Canad. Ent. Sup. 26: 597-598 (redescription of male). —Heinrich, 1972. Nat. Canad. 99: 202, 204, 207 (inclusion of both sexes in keys).
honestus (Cresson). Md. s. to Fla., w. to s. Mich. and La.
Ichneumon honestus Cresson, 1867. Amer. Ent. Soc., Trans. 6: 170. ♂.
Melanichneumon honestus milleri Heinrich, 1972. Nat. Canad. 99: 205. ♂, ♀. N. syn.
indecoratus Heinrich. P. E. I., Que., Maine, N. Y., Ont.
Melanichneumon (Melanichneumon) indecoratus Heinrich, 1962. Canad. Ent. Sup. 26: 589. ♂, ♀.
leviculops Heinrich. Newfoundland (insular), Que., Maine, Ont.
Melanichneumon (Melanichneumon) leviculops Heinrich, 1962. Canad. Ent. Sup. 26: 600. ♀.
 Taxonomy: Heinrich, 1976 (1975). Nat. Canad. 102: 767-768 (male described).
leviculus (Cresson). Que. s. to N. C., w. to Mich. Host: *Coryphista meadi* (Pack.).
Ichneumon leviculus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 170. ♂.
lissorufus Heinrich. Newfoundland (Labrador and insular), Que., Maine, N. Y., Ont., Mich.
Melanichneumon (Melanichneumon) lissorufus Heinrich, 1962. Canad. Ent. Sup. 26: 591. ♂, ♀.
Melanichneumon lissorufus radtkiei Heinrich, 1976 (1975). Nat. Canad. 102: 768. ♂, ♀. N. syn. Described from five specimens from one locality in insular Newfoundland.
margaritae Heinrich. Tenn., Ark.
Melanichneumon margaritae Heinrich, 1973. Nat. Canad. 100: 464. ♂, ♀.

mystificans Heinrich. Ga.

Melanichneumon mystificans Heinrich, 1972. Nat. Canad. 99: 207. ♂, ♀.

neoleviculops Heinrich. Maine, Ohio.

Melanichneumon neoleviculops Heinrich, 1971. Nat. Canad. 98: 1015. ♂, ♀.

pluto (Viereck), revised status. N. Y., Ont., Mich., Ohio, N. Mex. The name *pluto* has been erroneously suppressed in synonymy since 1944, most recently by Heinrich (1959, 1962), who did not realize that *Ichneumon nigripes* Provancher is preoccupied.

Ichneumon nigripes Provancher, 1882. Nat. Canad. 13 (no. 154): 310 (key); 13 (no. 155):

324. ♂. Preocc. by Gravenhorst, 1829.

Cratichneumon pluto Viereck, 1903. In Skinner, Amer. Ent. Soc., Trans. 29: 79. ♂.

Amblyteles ohioensis DeGant, 1933. U. S. Natl. Mus., Proc. 82 (11): 1. ♂, ♀.

Taxonomy: Townes, 1944. Amer. Ent. Soc., Mem. 11: 325. —Heinrich, 1959. Ent. News 70: 212. —Heinrich, 1962. Canad. Ent. Sup. 26: 601-602.

texanus (Cresson). Maine, R. I., N. Y., Mich., Tex., Alta. Discovery of the female of this species may show that it belongs in *Vulgichneumon* instead of *Melanichneumon* (see Heinrich, 1962).

Ichneumon texanus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 159. ♂.

Taxonomy: Heinrich, 1962. Canad. Ent. Sup. 26: 632-633.

townesi Heinrich. R. I., N. Y., Mich.

Melanichneumon (Melanichneumon) townesi Heinrich, 1962. Canad. Ent. Sup. 26: 596. ♂, ♀.

xanthogrammus (Ashmead). Kans., Tex.

Ichneumon xanthogrammus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 390. ♂.

Genus BARICHNEUMON Thomson

Barichneumon Thomson, 1893. Opusc. Ent. 18: 1959.

Type-species: *Ichneumon anator* Fabricius. Desig. by Ashmead, 1900.

Gurfyia Cameron, 1903. Ztschr. System. Hym. Dipt. 3: 178.

Type-species: *Gurfyia albipilosa* Cameron. Monotypic.

Harsaces Cameron, 1903. Entomologist 36: 238.

Type-species: *Harsaces nigripes* Cameron. Monotypic.

Darpasus Cameron, 1904. Ztschr. System. Hym. Dipt. 4: 344.

Type-species: *Darpasus pilosus* Cameron. Monotypic.

Stictichneumon Cameron, 1905. Spolia Zeylanica (Ceylon Jour. Sci., Sect. B) 3: 105.

Type-species: *Stictichneumon macariae* Cameron. Monotypic.

Taxonomy: Townes and Townes, 1966. Amer. Ent. Inst., Mem. 8: 261 (generic syn.).

—Heinrich, 1972. Nat. Canad. 99: 184-190 (keys to spp. of e. N. Amer.).

anator (Fabricius). Que. s. to Pa., w. to Minn. and Ill.; Europe. Host: *Ostrinia nubilalis* (Hbn.)?

Ichneumon anator Fabricius, 1793. Ent. System., v. 2, p. 169. Sex not indicated.

Ichneumon femoratorius Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 253; 9: 289. [female].

Ichneumon bulinorius Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 255; 9: 295. [female].

Ichneumon dealbator Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 272; 9: 341. Unnecessary n. name for *I. anator* Fabricius, which was not preocc. in *Ichneumon* by *Bracon anator* Fabricius.

Ichneumon retusorius Thunberg, 1922; 1924. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 278; 9: 355. [male].

Ichneumon helripes Cresson, 1867. Amer. Ent. Soc., Trans. 1: 310. ♂.

Phygadeuon niger Provancher, 1876. Nat. Canad. 8: 317. ♀. Preocc. by Provancher, 1874.

Phygadeuon ater (!) Provancher, 1878. Nat. Canad. 10: 299. Lapsus for *P. niger*

Provancher, 1876.

Phygadeuon electus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 51. "♀" = ♂.

- Taxonomy: Roman, 1912. Zool. Bidr. Uppsala 1: 240, 249, 255, 277 (syn.). — Heinrich, 1953. Wash. Acad. Sci., Jour. 43: 149. — Heinrich, 1959. Canad. Ent. 91: 806. — Heinrich, 1962. Canad. Ent. Sup. 26: 621-622.
- archboldi** Heinrich. Fla.
Barichneumon archboldi Heinrich, 1972. Nat. Canad. 99: 196. ♂, ♀.
- californicus** Heinrich. Calif.; Hawaii.
Barichneumon californicus Heinrich, 1971. Nat. Canad. 98: 1013. ♀.
- carolinensis** Heinrich. N. C., Ga., Fla., La.
Barichneumon carolinensis Heinrich, 1972. Nat. Canad. 99: 199. ♂, ♀.
- crassipunctus** Heinrich. Ga.
Barichneumon crassipunctus Heinrich, 1971. Nat. Canad. 98: 1009. ♀.
- danieli** Heinrich. N. Y.
Barichneumon danieli Heinrich, 1972. Nat. Canad. 99: 200. ♂.
- excelsior** (Heinrich). Que., Maine, Va., Ont., Mich., Ky.
Melanichneumon (Barichneumon) excelsior Heinrich, 1962. Canad. Ent. Sup. 26: 627. ♀.
- Taxonomy: Heinrich, 1971. Nat. Canad. 98: 1005-1006 (male described).
- flaviscuta** Heinrich. Ga., Miss.
Barichneumon flaviscuta Heinrich, 1971. Nat. Canad. 98: 1007. ♂, ♀.
- floridanus** Heinrich. Fla.
Barichneumon floridanus Heinrich, 1972. Nat. Canad. 99: 198. ♂, ♀.
- fuscognatus** Heinrich. Ga., Fla., Miss., La.
Barichneumon fuscognatus Heinrich, 1972. Nat. Canad. 99: 197. ♂, ♀.
- libens** (Cresson). Maine s. to s. Fla., w. to Mich., Ill., and La.
Ichneumon libens Cresson, 1877. Amer. Ent. Soc., Trans. 6: 181. ♂.
- Taxonomy: Heinrich, 1972. Nat. Canad. 99: 194.
- neosorex** Heinrich. Ga., Fla., Miss., La.
Barichneumon neosorex Heinrich, 1972. Nat. Canad. 99: 195. ♂, ♀.
- peramoenus calliandros** Heinrich. Fla.
Barichneumon peramoenus calliandros Heinrich, 1972. Nat. Canad. 99: 193. ♂, ♀.
- peramoenus peramoenus** (Heinrich). Que. s. to Ga., w. to Mich. and La.
Melanichneumon peramoenus Heinrich, 1962. Canad. Ent. Sup. 26: 631. ♂. Heinrich was uncertain as to the subgeneric placement of this species.
- Taxonomy: Heinrich, 1972. Nat. Canad. 99: 192-193 (female described).
- seticornutus** Heinrich. Ga.
Barichneumon seticornutus Heinrich, 1971. Nat. Canad. 98: 1011. ♂, ♀.
- sorex** (Heinrich). Que. s. to Ga., w. to Mich. Heinrich (1972) said that *sorex* is "probably [a] synonym or subspecies of *libens* [(Cresson)]," and that the allotype male may actually be *B. sphageti* Heinrich.
- Melanichneumon (Barichneumon) sorex* Heinrich, 1962. Canad. Ent. Sup. 26: 624. ♀ (♂ misdet.?).
- Taxonomy: Heinrich, 1972. Nat. Canad. 99: 186, 190, 191, 194.
- soror** (Cresson). Que. s. to Del., w. to Mich.
Ichneumon soror Cresson, 1864. Ent. Soc. Phila., Proc. 3: 185. ♀.
Ichneumon bimaculatus Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 357.
 ♂. Preocc. by Schrank, 1776; Gmelin, 1790; Christ, 1791; and Fabricius, 1793.
Ichneumon bimaculatus Dalla Torre, 1902. Cat. Hym., v. 3, p. 863. N. name for *I. bimaculatus* Provancher.
- sphageti** Heinrich. Maine, N. Y., Miss. Ecology: The holotype was collected in a spruce (*Picea mariana*) bog.
Barichneumon sphageti Heinrich, 1971. Nat. Canad. 98: 1008. ♀.
- Taxonomy: Heinrich, 1972. Nat. Canad. 99: 194-195.

Genus **VULGICHNEUMON** Heinrich

Melanichneumon subg. *Vulgichneumon* Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 17.

Type-species: *Ichneumon brevicinctor* Say. Monotypic and orig. desig.

Taxonomy: Heinrich, 1968 (1967). Synopsis and Recl. Ichneumoninae Stenopneusticae Africa So. of Sahara, v. 3, p. 615-616 (placement in *Pterocormina* [= *Ichneumonina* sensu Heinrich]). — Heinrich, 1971. Nat. Canad. 98: 1014 (placement in *Gyrodontina* [= *Cratichneumonina*]).

albomarginatus (Cresson). Que., Maine, N. H., Vt., N. Y., N. J., Ont., Mich., Ohio, Ind., Miss.

Ichneumon albomarginatus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 297. ♂.

brevicinctor (Say). Que. w. to B. C., s. to Fla., Tex., and Calif. Host: *Achatodes zeae* (Harris),

Bleptina sp., *Callopietria floridensis* (Gn.), *Lascoria ambigua* (Wlk.), *Macronoctua onusta* (Grt.), *Plathypena scabra* (F.), *Pseudaletia unipuncta* (Haw.), *Trichoplusia ni* (Hbn.), *Ostrinia nubilalis* (Hbn.), *Hyphantria cunea* (Drury).

Ichneumon brevicinctor Say, 1825. Amer. Ent. 2: 49. ♂.

Ichneumon extrematis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 149. ♀.

Ichneumon extrematis (!) Cresson, 1867. Amer. Ent. Soc., Trans. 1: 290.

Phygadeuon niger Provancher, 1874. Nat. Canad. 6: 280. ♀.

heleiobatos (Porter). N. J., Mich. Ecology: This species has been collected only in and around swamps where the vegetation was predominantly grasses interspersed with *Salix* bushes.

Melanichneumon (*Vulgichneumon*) *heleiobatos* Porter, 1964. Psyche 71: 130. ♂, ♀.

mimicus (Cresson). Newfoundland (insular), Que., Maine, Mass., Conn., N. Y., Mich., S. Dak., Idaho, Oreg.

Ichneumon mimicus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 300. ♂.

phaeogenops Heinrich. N. C., Fla., Miss.

Vulgichneumon phaeogenops Heinrich, 1972. Nat. Canad. 99: 209. ♂, ♀.

saevus (Cresson). Maine, N. Y., R. I., Ill.

Ichneumon saevus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 296. ♀.

subcaneus (Cresson). Que. s. to Ga., w. to B. C. and Calif.; Mexico? Host: *Diacrisia virginica* (F.), *Hyphantria cunea* (Drury), *Tyria jacobaeae* (L.).

Ichneumon pullatus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 146. ♂.

Ichneumon cordatus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 146. ♂. N. syn.

Ichneumon subcaneus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 148. ♀.

Ichneumon solitus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 144. ♀. N. syn.

Ichneumon odiosus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 145. ♂. N. syn.

Ichneumon neutralis Cresson, 1877. Amer. Ent. Soc., Trans. 6: 149. ♂. N. syn.

Taxonomy: Heinrich, 1959. Ent. News 70: 212. — Townes and Townes, 1966. Amer. Ent. Inst., Mem. 8: 264 (oversight of Heinrich [1959]).

terminalis (Cresson). Que. s. to N. C., w. to Minn. and Mo.

Ichneumon terminalis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 184. ♀.

Ichneumon finitimus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 302. "♀" = ♂.

Mesostenus apicalis Provancher, 1875. Nat. Canad. 7: 266. ♂.

Phygadeuon brevicaudus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 54. ♀.

Melanichneumon (*Vulgichneumon*) *terminalis carolinensis* Heinrich, 1962. Canad. Ent. Sup. 26: 619. ♀. N. syn.

zebratus (Cresson). N. Y. w. to S. B. C., s. to Ga., Tex., and Calif. Host: *Prochoerodes forficaria* (Gn.).

Ichneumon zebratus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 299. ♀.

Genus **RICHTICHNEUMON** Heinrich, n. status?

Melanichneumon subg. *Richtichneumon* Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 17.

Type-species: *Ichneumon residuus* Say. Monotypic and orig. desig.

belfragei (Cresson), n. comb. La., Tex., e. Wyo., s. w. Utah. The discovery of two females in the collection of the U. S. Natl. Museum shows that this species should be removed from *Melanichneumon* (see Heinrich, 1959) and placed in *Richtichneumon* by virtue of general agreement with Heinrich's definition of the latter.

Ichneumon Belfragei Cresson, 1872. Amer. Ent. Soc., Trans. 4: 156. ♂.

residuus (Say). Mass. s. to Md., w. to N. Dak. and Kans. Host: *Alsophila pometaria* (Harris).

Ichneumon residuus Say, 1829. Contrib. Maclurian Lyceum to Arts and Sci. 1: 73. ♀.

Ichneumon utilis Cresson, 1867. Amer. Ent. Soc., Trans. 1: 311. ♂.

Platylabus (Colocnema?) omniferrugineus Viereck, 1905. Kans. Acad. Sci., Trans. 19: 322. ♀.

Taxonomy: Cushman and Gahan, 1921. Ent. Soc. Wash., Proc. 23: 167.

virginicus (Cresson). W. Va.

Ichneumon virginicus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 165. ♂.

Ichneumon ornatipes Cresson, 1867. Amer. Ent. Soc., Trans. 1: 294. ♂.

Genus STENOBARICHNEUMON Heinrich

Stenobarichneumon Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 16.

Type-species: *Ichneumon citator* Thunberg. Monotypic and orig. desig.

This is a small genus of Holarctic and Neotropic distribution.

agitator Heinrich. Que., Maine, Ont., Mich.

Stenobarichneumon agitator Heinrich, 1962. Canad. Ent. Sup. 26: 639. ♂, ♀.

duplicans Heinrich. Maine.

Stenobarichneumon duplicans Heinrich, 1962. Canad. Ent. Sup. 26: 638. ♂, ♀.

melanocephalus Heinrich. Newfoundland (insular).

Stenobarichneumon melanocephalus Heinrich, 1976 (1975). Nat. Canad. 102: 770. ♂.

pergracilis Heinrich. Newfoundland (insular), Que., Maine, Ont., Mich.

Stenobarichneumon pergracilis Heinrich, 1962. Canad. Ent. Sup. 26: 635. ♂, ♀.

pygmaeops Heinrich. Newfoundland (insular), Que., Maine, Ont., Mich.

Stenobarichneumon pygmaeops Heinrich, 1962. Canad. Ent. Sup. 26: 637. ♂, ♀.

Stenobarichneumon pygmaeops insulanus Heinrich, 1976 (1975). Nat. Canad. 102: 771. ♂, ♀. N. syn. The specimens in the type series, which are from two localities in insular Newfoundland, were described as showing, "on the average, a markedly increased melanism in comparison with populations from the type locality ([Dryden], Maine)."

saunderi (Cresson). Que., Maine, N. Y., Alta.

Ichneumon Saunderi Cresson, 1877. Amer. Ent. Soc., Trans. 6: 141 (key), 177, 211 (index).

♂. The spelling *Saundersii* appears on pages 177 and 211, but Walkley (1958) appears to have chosen the alternate spelling *Saundersi*.

Taxonomy: Walkley, 1958. In Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2, sup. 1, p. 49.

Genus MENKOKIA Heinrich

Melanichneumon subg. *Menkokia* Heinrich, 1934. Berlin Zool. Mus., Mitt. 20: 209.

Type-species: *Melanichneumon (Menkokia) major* Heinrich. Orig. desig.

This genus is Oriental and Nearctic. Heinrich (1969, 1971) placed the genus in the Pterocormina, but I doubt that he is correct.

Taxonomy: Heinrich, 1969 (1968). Synopsis and Reclassif. Ichneumoninae Stenopneusticae

Africa So. of Sahara, v. 5, p. 1147. — Heinrich, 1971. Nat. Canad. 98: 971-973.

blandii (Cresson). N. Y. s. to N. C., w. to Mich., Kans., and Ark.

Ischnus blandii Cresson, 1864. Ent. Soc. Phila., Proc. 3: 188. ♂.

Genus RUBICUNDIELLA Heinrich

Rubicundiella Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 15.

Type-species: *Ichneumon mucronatus* Provancher. Monotypic and orig. desig.

- annulicornis** (Ashmead). N. J., Ga., Fla., Mich., La. Host: *Plathypena scabra* (F.), *Hellula rogatalis* (Hulst), *Herpetogramma* sp., *Udea rubigalis* (Gn.).
Colpognathus annulicornis Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 396. ♀.
- blanchardi** (Davis). Que., Maine, N. H., Mass., Mich.
Ichneumon blanchardi Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 350. ♀.
Ichneumon blanchardii Dalla Torre, 1902. Cat. Hym., v. 3, p. 865. Emend.
- deuteromelas** Heinrich. Maine, Mich., Yukon.
Rubicundiella deuteromelas Heinrich, 1962. Canad. Ent. Sup. 26: 573. ♂.
- mucronata** (Provancher). Que., Md., Kans.
Ichneumon mucronatus Provancher, 1875. Nat. Canad. 7 (1): 24 (key); 7 (3): 81. "♀" = ♂.
- perturbatrix** Heinrich. Maine w. to Oreg., s. to Ga., s. Tex., and Calif.; Bermuda; Hawaii. Host: *Ostrinia nubilalis* (Hbn.), *Macronoctua onusta* Grt., *Spodoptera exigua* (Hbn.).
Ichneumon rubicundus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 176. ♀. Preocc. by Geoffroy, 1785.
Rubicundiella perturbatrix Heinrich, 1962. Canad. Ent. Sup. 26: 577. N. name for *I. rubicundus* Cresson.
Rubicundiella perturbans (!) Heinrich, 1972. Nat. Canad. 99: 195.
- Biology: Wishart, 1949 (1948). Canad. Ent. 80: 118-137.
- simplicior** Heinrich. Southern Sask., s. w. B. C., w. Oreg. Host: *Fishia discors* (Grt.), *Heliothis onitis* (D. and S.), *Synanthedon bibionipennis* (Bdv.).
Rubicundiella simplicior Heinrich, 1962. Canad. Ent. Sup. 26: 575. ♂, ♀.

Genus LIMONETHE Townes

- Limonethe* Townes, 1946. Bol. Ent. Venezolana 5: 56.
 Type-species: *Ichneumon insolens* Cresson. Orig. desig.
- maurator** (Brulle). Que. s. to Fla., w. to Minn. and Tex.
Joppa maurator Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 287. ♂, ♀.
Ichneumon insolens Cresson, 1867. Amer. Ent. Soc., Trans. 1: 302. ♂, ♀.
Joppa Canadensis Provancher, 1874. Nat. Canad. 6: 336. ♀.
Tetragonochora mauratrix Schulz, 1906. Spolia Hym., p. 129. Emend.

Genus CARINODES Hancock

- Carinodes* Hancock, 1926. Entomologist 59: 189.
 Type-species: *Carinodes spinosus* Hancock. Monotypic and orig. desig.
- Ditremops* Townes, 1946. Bol. Ent. Venezolana 5: 52.
 Type-species: *Ichneumon abjectus* Cresson. Orig. desig.
- This is a very large genus. Except for the two species with ranges that extend into the United States, *Carinodes* is Neotropical.
- Taxonomy: Walkley, 1958. In Krombein et al., U. S. Dept. Agr., Agr. Monog. 2, Sup. 1, p. 48-49 (syn.). — Fitton, 1975. Studia Ent. 18: 381 (holotype of *C. spinosus* Hancock found).
- albipectus** (Brulle). Fla.; Cuba, Jamaica.
Ichneumon albipectus Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 306. ♂.
Ichneumon burrus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 14. ♀.
- Taxonomy: Townes and Townes, 1966. Amer. Ent. Inst., Mem. 8: 255 (syn.).
- havanensis** (Cameron). Fla.; Cuba, Puerto Rico, St. Croix. Host: *Anticarsia gemmatilis* Hbn.
 The host record pertains to a Cuban specimen in the U. S. Natl. Museum collection.
Ichneumon (?) *havanensis* Cameron, 1906. Cuba, Estac. Expt. Agron., Informe, p. 277. ♂.
- Taxonomy: Heinrich, 1937. Ann. and Mag. Nat. Hist. (10) 20: 262.

Genus AOPLUS Tischbein

- Aoplus* Tischbein, 1874. Stettin. Ent. Ztg. 35: 137.
 Type-species: *Aoplus inermis* Tischbein. Monotypic.
- Trachichneumon* Viereck, 1912. U. S. Natl. Mus., Proc. 42: 645.
 Type-species: *Ichneumon confirmatus* Cresson. Monotypic and orig. desig.

- cestus** (Cresson). Idaho, B. C., Wash., Oreg. Host: *Lambdina fiscellaria lugubrosa* (Hulst), *Melanophia imitata* (Wlk.).
Ichneumon cestus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 182. ♀.
Platylabus opacitus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 353. ♂.
- confirmatus** (Cresson). Que. s. to Ga., w. to Colo.
Ichneumon confirmatus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 178. ♀.
Phygadeuon potens Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 47. ♀.
Phygadeuon jocosus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 53. ♀.
This name was based upon the same type-specimen or specimens as was *P. potens* Provancher, the latter being the name Provancher used in his key.
- groenlandicus** (Lundbeck). Greenland.
Ichneumon groenlandicus Lundbeck, 1897 (1896). Dansk Naturhist. For. Kjobenhavn, Vidensk. Meddel., p. 223. ♀.
- Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 108 (generic placement).
- limbatae** Heinrich. Mich., B. C. Host: *Nematocampa filimentaria* Gn.
Aoplus limbatae Heinrich, 1962. Canad. Ent. Sup. 26: 542. ♂, ♀.
- mathewi** (Cameron). Southwestern B. C.
Ichneumon mathewi Cameron, 1907. Entomologist 40: 277. ♂.
- melanisticus** Heinrich. Ont., Yukon.
Aoplus melanisticus Heinrich, 1962. Canad. Ent. Sup. 26: 547. ♀.
- moiletti** Heinrich. Alta. Host: *Enyppia griseata* Grossb.
Aoplus moiletti Heinrich, 1962. Canad. Ent. Sup. 26: 544, 671. ♀. The name is a misspelling of a host name now in synonymy with *E. griseata*; the name appears as "moiletti Cress." on p. 671 (index).
- monotonus** Heinrich. Colo., Alta., B. C., Wash., Oreg., Calif. Host: Geometrid on *Polygonum*.
Aoplus monotonus Heinrich, 1962. Canad. Ent. Sup. 26: 548. ♂, ♀.
- ochropis coloradensis** Heinrich. Newfoundland (insular), Que., Colo., Alta.
Aoplus ochropis coloradensis Heinrich, 1962. Canad. Ent. Sup. 26: 556. ♂, ♀.
- ochropis ochropis** (Gmelin). Alaska; Eurasia.
Ichneumon ochropis Gmelin, 1790. In Linnaeus, Syst. Nat., ed. 13, p. 2679. Sex not indicated.
Melanichneumon seldoviae Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 155. ♂.
- permutabilis** Heinrich. Newfoundland (insular), s. to Md., w. to Mich. and Mo.
Aoplus permutabilis permutabilis Heinrich, 1962. Canad. Ent. Sup. 26: 541. ♂, ♀.
Aoplus permutabilis leucorbis Heinrich, 1962. Canad. Ent. Sup. 26: 542. ♀.
- pseudovelo**x Heinrich. Que., Maine, N. H., N. Y., Pa., Ont., Mich., Alta.
*Aoplus pseudovelo*x Heinrich, 1962. Canad. Ent. Sup. 26: 556. ♂, ♀.
- rari**or Heinrich. Que., Ont.
*Aoplus rari*or Heinrich, 1962. Canad. Ent. Sup. 26: 546. ♀.
- ruficeps** sitkensis (Ashmead). Newfoundland (insular) w. to Alaska, s. to Maine, Mich., Colo., and Wash. Host: *Macaria* sp., *Rheumaptera hastata* (L.). *A. ruficeps ruficeps* (Gravenhorst) is Eurasian.
Ichneumon vagans Provancher, 1875. Nat. Canad. 7 (1): 22 (key); 7 (2): 51. ♂. N. syn.; preocc. by Olivier, 1792.
Ichneumon sitkensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 152. ♂.
Ichneumon simulator Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 153. ♂. Uncertain syn.; preocc. by Olivier, 1792.
- Taxonomy: Heinrich, 1959. Ent. News 70: 211 (syn.).
- thujarum** Heinrich. Que., Ont.
Aoplus thujarum Heinrich, 1962. Canad. Ent. Sup. 26: 543. ♀.
- torpidus** (Wesmael). Newfoundland (insular), Que., Maine, Ont., Mich., Alta.; Europe.
Ichneumon torpidus Wesmael, 1857. [Brussels] Acad. Roy. de Belg., Bul. 24: 385. ♀.

- velox** (Cresson). Newfoundland (insular) w. to Alaska, s. to Pa., Ill., Colo., and Calif. Host: *Lambdina fervidaria athasaria* (Wlk.), *L. fiscellaria fiscellaria* (Gn.), *L. fiscellaria lugubrosa* (Hulst), *Nepytia canosaria* (Wlk.), *Symmerista leucitys* Fernald.
Ichneumon velox Cresson, 1864. Ent. Soc. Phila., Proc. 3: 185. ♀.
Ichneumon puerilis Cresson, 1867. Amer. Ent. Soc., Trans. 1: 296. ♂.
Ichneumon mellicorax Provancher, 1875. Nat. Canad. 7 (1): 21 (key); 7 (2): 48. ♂.
Phygadeuon apicatus Provancher, 1875. Nat. Canad. 7 (6): 180. ♀.
Phygadeuon cressoni Provancher, 1876. Nat. Canad. 8: 318. ♀.
Ichneumon occidentalis Harrington, 1894. Canad. Ent. 26: 210. ♀.

Biology: Schedl, 1931. Ztschr. f. Angew. Ent. 8: 270-273.

Genus HEMIHOPLIS Heinrich

Hemihoplisis Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 15.

Type-species: *Hoplismenus teres* Swift. Monotypic and orig. desig.

- teres** (Swift). N. Y. s. to Fla., w. to Mich., Ill., and La. Host: *Precis larvina* Cr.
Hoplismenus teres Swift, 1946. Ent. Soc. Amer., Ann. 39: 409.

Genus PLATYLABOPS Heinrich

Platylabops Heinrich, 1950. Naturw. Mus. Aschaffenburg, Mitt. d. Sammelstelle f. Schmarotzerbestimmung 27: 4.

Type-species: *Platylabops hinzi* Heinrich. Monotypic.

This is a small Holarctic genus.

- apricus nearcticus** Heinrich. Maine, N. Y. *P. apricus apricus* (Gravenhorst) is European.
Platylabops apricus nearcticus Heinrich, 1962. Canad. Ent. Sup. 26: 648. ♂, ♀.
eupitheciarum Heinrich. Alta., B. C. Host: *Eupithecia ornata* (Hulst), *E. placidata* Tay., *E. unicolor* (Hulst).
Platylabops eupitheciarum Heinrich, 1962. Canad. Ent. Sup. 26: 648. ♂.
fraterculus Heinrich. Newfoundland (insular), Maine, Vt., N. Y.
Platylabops fraterculus Heinrich, 1962. Canad. Ent. Sup. 26: 644. ♂, ♀.
holoerythrus Heinrich. Newfoundland (insular), B. C. Host: *Eupithecia transcanadata* MacK.
Platylabops holoerythrus Heinrich, 1962. Canad. Ent. Sup. 26: 645. ♀.
Taxonomy: Heinrich, 1976 (1975). Nat. Canad. 102: 771-772 (male described).
leucopsis (Ashmead). Wash., Oreg., Calif. According to Riley and Howard (1890), the holotype was reared from a "Tortricid pupa on oak."
Ichneumon leucopsis Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 391. ♂.
Biology: Riley and Howard, 1890. U. S. Dept. Agr., Insect Life 3: 152.
novasascotiae Heinrich. Newfoundland (insular), N. S. Heinrich (1976) made a subspecific distinction between the two specimens from which this species is known.
Platylabops pecki novasascotiae Heinrich, 1962. Canad. Ent. Sup. 26: 643. ♀.
Platylabops novasascotiae (!) Peck, 1964. In Heinrich, Ent. Soc. Canada, Mem. 35: 918.
Platylabops novasascotiae nigrimembris Heinrich, 1976 (1975). Nat. Canad. 102: 773. ♀. N. syn.
pecki Heinrich. Sask.
Platylabops pecki pecki Heinrich, 1962. Canad. Ent. Sup. 26: 642. ♂, ♀.
Taxonomy: Heinrich, 1976 (1975). Nat. Canad. 102: 773.

UNPLACED TAXA OF GYRODONTINA

Ichneumon limbifrons Cresson, 1864. Ent. Soc. Phila., Proc. 3: 182. ♂. Colo.

Taxonomy: Townes, 1944. Amer. Ent. Soc., Mem. 11: 326.

Ichneumon pectoralis Say, 1829. Contrib. Maclurian Lyceum to Arts and Sci. 1: 72. ♂.

Southwestern Ind. Heinrich (1961) misinterpreted Say's use of the term pectus. In his writings on Hymenoptera, Say used both the terms pectus and postpectus, and it

consequently seems evident that his usage of *pectus* is essentially synonymous with *mesosternum*. In his statement that the *pectus* of *pectoralis* is "black with a large yellow spot between the intermediate and posterior feet," Say presumably intended to write: intermediate and anterior feet.

Taxonomy: Say, 1836. Boston Jour. Nat. Hist. 1: 231 (coloration of propodeum). —Cushman and Gahan, 1921. Ent. Soc. Wash., Proc. 23: 166. —Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 172-173.

Ichneumon vultus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 165. ♂. Colo.

Taxonomy: Townes, 1944. Amer. Ent. Soc., Mem. 11: 332.

SUBTRIBE AMBLYTELESINA

All available evidence seems to indicate that the females of species in this subtribe oviposit into the host larva rather than the pupa. In some of the genera, inseminated adult females are apparently the only overwintering life stage.

Genus ECTOPIMORPHA Viereck

Ectopimorpha Viereck, 1912. U. S. Natl. Mus., Proc. 43: 589

Type-species: *Ichneumon anceps* Cresson. Monotypic and orig. desig.

This genus is apparently restricted to the Nearctic Region.

boops Heinrich. Calif.

Ectopimorpha boops Heinrich, 1961. Canad. Ent. Sup. 23: 494. ♂.

californica Heinrich. Calif.

Ectopimorpha californica Heinrich, 1961. Canad. Ent. Sup. 23: 486. ♀.

hiulca (Cresson). B. C. Known only from the holotype which, according to Cresson (1879), was collected at "Lake Lahache" (i.e. Lac la Hache), B. C.

Amblyteles hiulcus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 172. "♂" = ♀.

Taxonomy: Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 355-356.

hiulcops Heinrich. Sask., B. C.

Ectopimorpha hiulcops Heinrich, 1961. Canad. Ent. Sup. 23: 486. ♀.

indemnisi (Cresson). Sask., B. C.

Ichneumon indemnisi Cresson, 1877. Amer. Ent. Soc., Trans. 6: 172. "♂" = ♀.

limerodops Heinrich. Calif.

Ectopimorpha limerodops Heinrich, 1961. Canad. Ent. Sup. 23: 487. ♀.

luperinae Cushman. Newfoundland (insular), Maine, Mass., N. Y., Mich., Ohio, Iowa, Sask.?

Host: *Luperina stipata* (Morr.).

Ectopimorpha luperinae Cushman, 1931. U. S. Natl. Mus., Proc. 79 (14): 1. ♂, ♀.

Biology: Decker, 1930. Iowa Agr. Expt. Sta., Res. Bul. 125: 159. —Decker, 1935. Iowa State Col. Jour. Sci. 9: 571.

scibilis (Cresson). Ill.

Ichneumon scibilis Cresson, 1877. Amer. Ent. Soc., Trans. 6: 183. ♂.

utahensis Heinrich. Utah.

Ectopimorpha utahensis Heinrich, 1961. Canad. Ent. Sup. 23: 493. ♂.

wilsoni (Cresson). Que. s. to Ga., w. to Iowa and Mo.

Ischnus wilsoni Cresson, 1864. Ent. Soc. Phila., Proc. 3: 188. ♂.

Ichneumon anceps Cresson, 1867. Amer. Ent. Soc., Trans. 1: 309. ♀, "♂" = ♀. Preocc. by Villers, 1789.

Ichneumon wilsonii Dalla Torre, 1902. Cat. Hym., v. 3, p. 1017. Emend.

Genus EXEPHANES Wesmael

Erephanes Wesmael, 1845 (1844). [Brussels] Acad. Roy. de Belg., Nouveaux Mem. 18: 17.

Type-species: *Ichneumon hilaris* Gravenhorst. Desig. by Ashmead, 1900.

Octatomus Tischbein, 1881. Stettin. Ent. Ztg. 42: 186.

Type-species: *Octatomus tricolor* Tischbein. Monotypic. The type-species is regarded as a synonym of *E. femoralis* Brischke.

Heinrich (1976) placed *Exephanes* in the Pterocormina, but did not indicate his rationale for doing so.

Taxonomy: Heinrich, 1976 (1975). Nat. Canad. 102: 763.

californicus Heinrich. Colo., Utah, Ariz., Calif.

Exephanes californicus Heinrich, 1961. Canad. Ent. Sup. 23: 480. ♂, ♀.

subfulvus (Cresson). Que., Sask., Colo., Alta.

Ichneumon subfulvus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 258. ♀.

terminalis (Provancher). Newfoundland (insular), Que., Maine, Conn., Ont., Mich., Minn., s. N. W. T., Colo.

Phygadeuon terminalis Provancher, 1874. Nat. Canad. 6: 284. ♀.

Ichneumon caudatus Provancher, 1875. Nat. Canad. 7 (1): 24 (key); 7 (3): 82. ♀.

Ichneumon pomilius Provancher, 1877. Nat. Canad. 9: 9. ♂.

Phygadeuon Geddessii Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 54. ♀.

Amblyteles Cookii Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 392. ♀.

Exephanes terminalis immaculatus Heinrich, 1961. Canad. Ent. Sup. 23: 479. ♂, ♀. N. syn.

Genus LIMERODOPS Heinrich

Limerodops Heinrich, 1949. Muenchner Ent. Gesell., Mitt. 35-39: 44.

Type-species: *Amblyteles subsericans* var. *elongatus* Brischke? Monotypic and, in part, orig. desig. Heinrich's original designation was "*Amblyteles elongatus* Brischke = *A. subsericans* Gr[avenhorst] partim = *A. fossorius* L[innaeus] (nach Roman [1932])." See discussion of type-species of *Probolus*.

This is a small genus of Holarctic distribution.

Taxonomy: Roman, 1932. Ent. Tidskr. 53: 6. — Heinrich, 1953. Wash. Acad. Sci., Jour. 43: 150.

— Perkins, 1953. Brit. Mus. (Nat. Hist.) Ent., Bul. 3: 106. — Townes, Momoi, and Townes, 1965. Amer. Ent. Inst., Mem. 5: 503.

belangeri (Cresson). N. S. w. to Alaska, s. to N. Y., Mich., Colo., Wash. Host: *Euxoa divergens* (Wlk.).

Amblyteles Belangeri Cresson, 1877. Amer. Ent. Soc., Trans. 6: 190. ♀.

Cryptus dubius Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 71. "♂" = ♀.

Preocc. by Taschenberg, 1865.

Taxonomy: Heinrich, 1953. Wash. Acad. Sci., Jour. 43: 150.

mariannae Heinrich. N. S., Maine, Mass., Ont., Mich.

Limerodops mariannae Heinrich, 1961. Canad. Ent. Sup. 23: 383. ♂, ♀.

Genus NEAMBLYMORPHA Heinrich

Neamblymorpha Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 19.

Type-species: *Ichneumon milvus* Cresson. Monotypic and orig. desig.

A single species is known.

milva (Cresson). Newfoundland (insular) s. to N. C., w. to Mich.

Ichneumon (Ichneumon) milvus Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., Ed. 2, p. 585. Nomen nudum.

Ichneumon milvus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 305. ♂.

Ichneumon Clolini Provancher, 1875. Nat. Canad. 7: 250. ♂.

Genus EUTANYACRA Cameron

Eutanyacra Cameron, 1903. Ent. Soc. London, Trans. 51: 227.

Type-species: *Eutanyacra pallidicoris* Cameron. Monotypic.

This large genus is Neotropical, Holarctic, and Oriental.

chillcotti Heinrich. Northern Que., N. W. T.

Eutanyacra chillcotti Heinrich, 1956. Canad. Ent. 88: 478. ♂, ♀.

consignata (Cresson). Maine, Mass., N. Y., N. J., Md., W. Va., Ohio, Wis., Ill., Kans.

Ichneumon consignatus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 298. ♂.

hiemans Heinrich. Que., Maine, Pa., Ont., Ohio, Mich.

Eutanyacra hiemans Heinrich, 1961. Canad. Ent. Sup. 23: 436. ♀.

improvisa (Cresson). N. S. s. to Md., w. to B. C. and Oreg. Host: *Anomogyna perquirita*

(Morr.), *Ceramica picta* (Harris).

Ichneumon improvisus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 296. ♂.

Amblyteles tetricus Provancher, 1877. Nat. Canad. 9: 10. ♂, ♀.

Eutanyacra improvisa columbiana Heinrich, 1961. Canad. Ent. Sup. 23: 428. ♂, ♀. N. syn.

melanotarsis Heinrich. Fla., La.

Eutanyacra melanotarsis Heinrich, 1972. Nat. Canad. 99: 173, 176. ♂, ♀. I here reject the

alternate spelling *nigritarsis* which appears on p. 173 (abstract).

miraculosa Heinrich. Maine.

Eutanyacra miraculosa Heinrich, 1961. Canad. Ent. Sup. 23: 434. ♀.

munifica (Cresson). N. S. s. to Va., w. to Sask.

Ichneumon nobilis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 155. ♂. Preocc. by Wesmael, 1857.

Ichneumon munificus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 290. N. name for *I. nobilis* Cresson.

Taxonomy: Heinrich, 1971. Nat. Canad. 98: 979-980.

perannulata (Hopper). Que., Maine, N. Y., Pa., W. Va.

Amblyteles perannulatus Hopper, 1938. Amer. Ent. Soc., Trans. 64: 98. ♀.

pycnopus Heinrich. D. C., Ont., Ohio, Iowa, Ark.

Eutanyacra pycnopus Heinrich, 1961. Canad. Ent. Sup. 23: 435. ♂, ♀.

saguenayensis (Provancher). Que., Maine, Mich.

Ichneumon saguenayensis Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 356. ♂.

solitaria Heinrich. Que., Maine, N. Y., Ont., Mich.

Eutanyacra solitaria Heinrich, 1961. Canad. Ent. Sup. 23: 442. ♂, ♀.

succincta (Brulle). N. Y. s. to Tenn., w. to S. Dak. and Colo. Host: "*Amathes c-nigrum* (L.)."

Ichneumon succinctus Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 301. ♂.

Ichneumon sandix Cresson, 1864. Ent. Soc. Phila., Proc. 3: 174. ♀.

suturalis (Say). Newfoundland (Labrador) w. to N. W. T. and B. C., s. to N. J., Iowa, Colo., and Calif. Host: *Actebia fennica* (Tausch.).

Ichneumon (Ichneumon) suturalis Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., Ed. 2, p. 585. Nomen nudum.

Ichneumon suturalis Say, 1836. Boston Jour. Nat. Hist. 1: 226. ♀.

Ichneumon Grotei Cresson, 1864. Ent. Soc. Phila., Proc. 3: 154. ♂.

Ichneumon propinquus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 172. ♀.

Morphology: Peck, 1937. Canad. Jour. Res., Sect. D (Zool. Sci.) 15: 246, 251.

trivittata Heinrich. Que.

Eutanyacra trivittata Heinrich, 1961. Canad. Ent. Sup. 23: 448. ♂, ♀.

valdenigra Heinrich. Northern Que.

Eutanyacra valdenigra Heinrich, 1958. Canad. Ent. 90: 740. ♂.

validiceps Heinrich. Que., Maine, Ont., Mich.

Eutanyacra validiceps Heinrich, 1961. Canad. Ent. Sup. 23: 443. ♂, ♀.

vilissima Heinrich. Que., Maine, Mass., N. Y., Md., W. Va., Ont., Mich.

Eutanyacra vilissima vilissima Heinrich, 1961. Canad. Ent. Sup. 23: 440. ♂, ♀.

Eutanyacra vilissima rubricosa Heinrich, 1961. Canad. Ent. Sup. 23: 441. ♂, ♀. N. syn.

vilissimops Heinrich. Que.

Eutanyacra vilissimops Heinrich, 1971. Nat. Canad. 98: 980. ♀.

Genus SETANTA Cameron

Setanta Cameron, 1901. Ann. and Mag. Nat. Hist. (7) 7: 483.

Type-species: *Setanta rufipes* Cameron. Monotypic.

This genus is apparently Oriental, Neotropic, and Nearctic.

Taxonomy: Townes and Townes, 1966. Amer. Ent. Inst., Mem. 8: 322, 323 (inclusion in key).

compta (Say), n. comb. Que. s. to Ga., w. to S. Dak. and Tex. I am grateful for the advice of

Dr. H. K. Townes regarding the generic placement of this species.

Ichneumon comptus Say, 1836. Boston Jour. Nat. Hist. 1: 229. ♂, ♀.

Ichneumon atrifrons Cresson, 1864. Ent. Soc. Phila., Proc. 3: 157. ♀.

Amblyteles marginatus Provancher, 1882. Nat. Canad. 13: 328. ♀.

Genus NETANYACRA Heinrich

Netanyacra Heinrich, 1968. Nat. Canad. 95: 709.

Type-species: *Netanyacra nuevoleonis* Heinrich. Orig. desig.

This genus is Nearctic and Neotropic. Since *Netanyacra* was described females of at least one of the species have been discovered, but no female of this genus has yet been described in the literature.

arizonae Heinrich. Ariz.

Netanyacra arizonae Heinrich, 1968. Nat. Canad. 95: 716. ♂.

dakotae Heinrich. S. Dak., Alta.

Netanyacra dakotae Heinrich, 1968. Nat. Canad. 95: 714. ♂.

leucopus Heinrich. Va., S. C., Ga., Fla., Ohio, Ky., Tenn., Mo., Ark., Kans., Tex. Host:

Lacinipolia renigera (Steph.).

Eutanyacra leucopus Heinrich, 1968. Nat. Canad. 95: 712. ♂.

Genus DIPHYUS Kriechbaumer

Diphyus Kriechbaumer, 1890. Ent. Nachr. 16: 184. *Diphyus* was probably a typographical error for "*Diphyes*," a variant spelling which also appeared on page 184 of Kriechbaumer's paper (*Diphyes* appeared subsequently in both the author index [p. IV] and the taxonomic index [p. VII], but no choice between the two spellings was made in the errata [p. VIII]). Sharp (1892) and Berthoumieu (1896) accepted the spelling *Diphyes*, but Ashmead (1900) appears to have been the first author to have made a choice between the two spellings. It is fortunate that Ashmead selected *Diphyus* instead of *Diphyes* as the latter is preoccupied by Cuvier, 1817.

Type-species: *Diphyus tricolor* Kriechbaumer. Monotypic.

Pseudamblyteles Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 18.

Type-species: *Ichneumon palliatorius* Gravenhorst. Monotypic and orig. desig.

Physcoteles Berthoumieu, 1904. In Wytsman, Gen. Ins., fasc. 18, p. 51.

Type-species: *Ichneumon palliatorius* Gravenhorst. Desig. by Viereck, 1914.

Antelca Morley, 1914. Ann. and Mag. Nat. Hist. (8) 14: 407. Nomen nudum.

This large genus is apparently Neotropic, Holarctic, and Oriental.

Taxonomy: Sharp, 1892 (1890). Zool. Rec. 27: 194. — Berthoumieu, 1896. Soc. Ent. de France,

Ann. 65: 291. — Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 17, 210. — Heinrich, 1968 (1967).

Ichneumoninae Stenopneusticae Africa So. of Sahara, v. 3, p. 649-651 (syn.).

allapsus (Cresson), n. comb. Colo., Alta., B. C.

Ichneumon allapsus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 256. ♂.

amoenipes (Heinrich), n. comb. Que., Maine.

Pseudamblyteles amoenipes Heinrich, 1961. Canad. Ent. Sup. 23: 413. ♀.

animosus (Cresson), n. comb. Colo., Alta.

Ichneumon animosus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 164. ♂.

apiculatus (Walkley), n. comb. Colo., Alta., Mont., Wyo., Idaho, Oreg. Host: *Euxoa ochrogaster* (Gn.).

Ichneumon apicalis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 152. ♂. Preocc. by Wiedeman, 1824.

Pseudamblyteles apiculatus Walkley, 1958. In Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2, sup. 1, p. 50. N. name for *I. apicalis* Cresson.

bizonatus (Cresson). Que. w. to Alta., s. to Md., Ky., and Colo. Ecology: Labels on four female specimens in the U. S. Natl. Museum collection indicate that they were collected in caves in late July, October, and November in Ky. and Pa.; Dasch (1971) collected a specimen in flight in Ohio during January or February.

Ichneumon bizonatus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 160. ♀.

Biology: Dasch, 1971. Ohio Jour. Sci. 71: 277.

carbo (Heinrich), n. comb. Que., Maine, Ont.

Pseudamblyteles carbo Heinrich, 1961. Canad. Ent. Sup. 23: 407. ♂, ♀.

cockerelli (Viereck), n. comb. Colo., N. Mex.

Cratichneumon cockerelli Viereck, 1903. In Skinner, Amer. Ent. Soc., Trans. 29: 76. ♂.

Cratichneumon skinneri Viereck, 1903. In Skinner, Amer. Ent. Soc., Trans. 29: 78. ♂.

comes (Cresson), n. comb. N. Y., Pa., Del., Mich., Ill. Heinrich failed to include this species in his 1961 treatment of *Pseudamblyteles*; in a supplement to that work, Heinrich (1969) gave a redescription of the male of *comes* based upon the "holotype" from "no locality," and a specimen from Pa.; in the original description Cresson indicated that he had specimens from Ill. and Del., and Cresson (1916) selected a lectotype from Illinois which was "in good condition." The specimen referred to as the "holotype" by Heinrich (1969) had the "Sternites and hypopygium destroyed by dermestids."

Ichneumon comes Cresson, 1864. Ent. Soc. Phila., Proc. 3: 158. ♂.

Taxonomy: Cresson, 1916. Amer. Ent. Soc., Mem. 1: 24. —Heinrich, 1969. Nat. Canad. 96: 956-957.

discus (Cresson), n. comb. Colo.

Ichneumon discus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 168. ♂.

distinctipes (Heinrich). Que., Maine, N. Y., Md., N. C., Ont., Mich., Ohio, Ark. Ecology: Dasch (1971) collected a female in flight during January or February in Ohio.

Pseudamblyteles distinctipes Heinrich, 1961. Canad. Ent. Sup. 23: 409. ♀.

effigialis (Heinrich), n. comb. N. B., Que., Maine, Ont., Mich.

Pseudamblyteles effigialis Heinrich, 1961. Canad. Ent. Sup. 23: 407. ♂, ♀.

euxoae Heinrich, n. status. Maine, Colo., N. Mex., Alta., B. C., Wash. Host: *Euxoa messoria* (Harris), *E. ochrogaster* (Gn.).

Ichneumon variegatus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 153. ♂. Preocc. by Schrank, 1785 and Gmelin, 1790.

Diphyus variegatus euxoae Heinrich, 1969. Nat. Canad. 96: 960. ♂, ♀. N. syn.; because Heinrich's treatment of *euxoae* as a subspecies of *variegatus* was tentative, this synonymy is also tentative.

Diphyus variegatus orientis Heinrich, 1969. Nat. Canad. 96: 962. ♀. N. syn.; based upon a single female with "only slight" differences from females in the type series of *euxoae*.

Morphology: Peck, 1937. Canad. Jour. Res., Sect. D. (Zool. Sci.) 15: 246, 249, 251.

ferrugator (Swederus), n. comb. N. Amer.

Ichneumon ferrugator Swederus, 1787. Svenska Vetensk.-Akad., Handl. 8: 280. ♀ ("male" misdet., = *Spilichneumon* female).

Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 107.

flebilis (Cresson). Que., Maine, N. H., Ont., Mich.

Ichneumon flebilis Cresson, 1877. Amer. Ent. Soc., Trans. 6: 181. ♀.

interstinctus (Heinrich). Que., Maine, N. H., Ont., Mich.

Pseudamblyteles interstinctus Heinrich, 1961. Canad. Ent. Sup. 23: 410. ♀.

Pseudamblyteles interdistinctus (!) Walkley, 1967. In Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2, sup. 2, p. 154.

- macilentus** (Cresson), n. comb. Mich., Colo., Alta. Although this species had been recorded from Mich. by Townes and Townes (1951), it was not included in Heinrich's (1961-1962) treatment of the stenopneusticae of the Northeast.
Ichneumon macilentus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 249. ♂.
- Taxonomy: Townes and Townes, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 293.
- micramoenus** (Heinrich), n. comb. Maine.
Pseudamblyteles micramoenus Heinrich, 1961. Canad. Ent. Sup. 23: 420. ♀.
- nigrotergops** (Heinrich). Que., Maine, Ont.
Pseudamblyteles nigrotergops Heinrich, 1961. Canad. Ent. Sup. 23: 417. ♀.
Diphyus nigritergops (!) Heinrich, 1969. Nat. Canad. 96: 955.
- nuncius** (Cresson), n. comb. Oreg., Calif. Host: *Euxoa* (*Chorizagrotis*) *auxiliaris* (Grote).
Ichneumon nuncius Cresson, 1877. Amer. Ent. Soc., Trans. 6: 176. ♂.
- ontariensis** (Provancher), n. comb. Ont. This species was not included in Heinrich's (1961-1962) treatment of the stenopneusticae of the Northeast.
Ichneumon Ontariensis Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 30.
 "♀" = ♂.
- ormenus** (Cresson). Newfoundland (insular) w. to Alaska, s. to Pa., Mich., N. Mex., and Wash.
Ichneumon Ormenus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 141. ♀.
Ichneumon tenebrosus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 145. ♂. Preocc. by Wesmael, 1845.
Ichneumon luctus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 250. N. name for *I. tenebrosus* Cresson.
Ichneumon mellipes Cresson, 1867. Amer. Ent. Soc., Trans. 1: 295. ♂.
Ichneumon Quebecensis Provancher, 1875. Nat. Canad. 7 (1): 24 (key); 7 (3): 77. ♂.
Pseudamblyteles neomexicanus Ashmead, 1901. Psyche 9: 147. ♂.
- populorum** (Heinrich), n. comb. Sask., Alta. Host: *Brachylonia populi* (Stkr.).
Pseudamblyteles populorum Heinrich, 1961. Canad. Ent. Sup. 23: 418. ♂, ♀.
- provancheri** (Cushman), n. comb. Que., Maine, Md., Va., Ont., Mich., Mo.
Ichneumon bifasciatus Provancher, 1875. Nat. Canad. 7 (1): 23 (key); 7 (3): 75. ♀. Preocc. by Geoffroy, 1785 and Say, 1829.
Amblyteles provancheri Cushman, 1925. Wash. Acad. Sci., Jour. 15: 388. N. name for *I. bifasciatus* Provancher.
- robustus** (Cresson). Que. w. to Alaska, s. to Maine, Mich., Colo., and Idaho.
Ichneumon robustus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 298. ♀.
- rubellus** (Cresson). Colo., Alta., Wash., Calif.
Ichneumon rubellus Cresson, 1865. Ent. Soc. Phila., Proc. 2: 254. ♂. Preocc. by Gmelin, 1790; not renamed here because of the very great likelihood that other Cresson names will prove to be synonyms.
- Taxonomy: Heinrich, 1959. Ent. News 70: 211.
- subfuscus** (Cresson), n. comb. Colo.
Ichneumon subfuscus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 173. ♀.
- taylorii** (Harrington), n. comb. B. C., Oreg.
Ichneumon Taylorii Harrington, 1894. Canad. Ent. 26: 209. ♂.
- walleyi** (Heinrich), n. comb. Ont.
Pseudamblyteles walleyi Heinrich, 1961. Canad. Ent. Sup. 23: 416. ♀.
- zebraticolor** (Heinrich). Que., Maine, Ont.
Pseudamblyteles zebraticolor Heinrich, 1962. Canad. Ent. Sup. 29: 882. ♂.

Genus CTENICHNEUMON Thomson

Ctenichneumon Thomson, 1894. Opusc. Ent. 19: 2082.

Type-species: *Ichneumon funereus* Gravenhorst. Desig. by Ashmead, 1900. The type-species is Gravenhorst's identification of *Ichneumon funereus* Geoffroy.
Dochyteles Berthoumieu, 1904. In Wytsman, Gen. Ins., fasc. 18, p. 50.

Type-species: *Ichneumon funereus* Geoffroy. Desig. by Viereck, 1914.

Naenaria subg. *Neonaenaria* Uchida, 1956. Insecta Matsumurana 20: 60.

Type-species: *Naenaria (Neonaenaria) albomaculata* Uchida. Orig. desig.

This rather large genus is Neotropic, Holarctic, and Oriental.

Taxonomy: Townes, Momoï, and Townes, 1965. Amer. Ent. Inst., Mem. 5: 505 (syn.).

caeruleops Heinrich. Sask., B. C.

Ctenichneumon caeruleops Heinrich, 1961. Canad. Ent. Sup. 23: 461. ♂, ♀.

columbianus Heinrich. N. Mex., Yukon, Alaska, B. C.

Ctenichneumon columbianus Heinrich, 1961. Canad. Ent. Sup. 23: 457. ♂, ♀.

excultus (Cresson). Que. w. to Alaska, s. to Va., Mich., Idaho, and Oreg.

Ichneumon excultus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 293. ♀.

Ichneumon Stadoconensis Provancher, 1875. Nat. Canad. 7 (1): 22 (key); 7 (2): 50. ♂.

gracilior Heinrich. Que., Maine, Mich.

Ctenichneumon gracilior Heinrich, 1961. Canad. Ent. Sup. 23: 470. ♂, ♀.

heteropus Heinrich. B. C.

Ctenichneumon heteropus Heinrich, 1961. Canad. Ent. Sup. 23: 454. ♂, ♀.

holomelas Heinrich. Man.

Ctenichneumon holomelas Heinrich, 1961. Canad. Ent. Sup. 23: 460. ♀.

minor Heinrich. N. S. s. to W. Va., w. to Sask.

Ctenichneumon minor Heinrich, 1961. Canad. Ent. Sup. 23: 458. ♂, ♀.

punctiscuta Heinrich. Mich., Man., B. C.

Ctenichneumon punctiscuta Heinrich, 1961. Canad. Ent. Sup. 23: 463. ♀.

rufibasis Heinrich. Que., Maine.

Ctenichneumon rufibasis Heinrich, 1961. Canad. Ent. Sup. 23: 469. ♀.

ruidosensis (Cockerell). N. Mex., Calif.

Ichneumon ruidosensis Cockerell, 1898. Ann. and Mag. Nat. Hist. (7) 2: 456. ♂.

semicaeruleus (Cresson). Maine w. to Alta., s. to s.e. N. C., Ky., Kans., and S. Dak.

Ichneumon semicaeruleus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 302. ♀.

syphax (Cresson). Que. w. to Alta., s. to n. Ga. and Kans.

Ichneumon Syphax Cresson, 1864. Ent. Soc. Phila., Proc. 3: 181. ♀.

Ichneumon rufizonatus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 183. ♀.

Ichneumon electus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 304. ♂.

Ichneumon nitidus Provancher, 1875. Nat. Canad. 7 (1): 24 (key); 7 (3): 79. ♂. Barron (1975) gave particulars concerning the specimen he regarded as holotype, which is a different specimen than Heinrich (1961) accepted as type.

Ichneumon Marianapolitanus Provancher, 1875. Nat. Canad. 7 (1): 24 (key). ♀.

Ichneumon Marianapolitanensis (!) Provancher, 1875. Nat. Canad. 7 (3): 81.

Taxonomy: Heinrich, 1959. Ent. News 70: 208, 210. — Heinrich, 1961. Canad. Ent. Sup. 23: 472 (uncertainty about synonymy of *I. electus* Cresson). — Barron, 1975. Nat. Canad. 102: 505, 520.

townesi Heinrich. Maine, N. Y., Mich.

Ctenichneumon townesi Heinrich, 1961. Canad. Ent. Sup. 23: 453. ♂, ♀.

ultus (Cresson). Que. s. to S. C., w. to Mich. and Kans.

Ichneumon ultus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 295. ♂.

Ichneumon rogalis Cresson, 1867. Amer. Ent. Soc., Trans. 1: 295. ♂.

Genus PROBOLUS Wesmael

Probolus Wesmael, 1845 (1844). [Brussels] Acad. Roy. de Belg., Nouveaux Mem. 18: 150.

Type-species: *Ichneumon fossorius* Gravenhorst. Monotypic. The type-species is Gravenhorst's (1829) apparently deliberate misidentification of *I. fossorius* Linnaeus; the type-species is regarded as a synonym of *P. culpatorius* (Linnaeus). See also the type-species citation for *Limerodops*.

This is a small genus of Holarctic distribution.

Taxonomy: Gravenhorst, 1829. *Ichn. Europaea*, v. 1, p. 163-166 (use of name *I. fossorius*).
 —Roman, 1932. *Ent. Tidskr.* 53: 5, 6 (identity of Linnaean types of *I. culpatorius* and *I. fossorius*). —Perkins, 1953. *Brit. Mus. (Nat. Hist.) Ent.*, Bul. 3: 106 (correction of Roman's misidentification of the type-specimen of *I. fossorius* Linnaeus).

detritus (Brulle). Que. s. to Ga., w. to Mich. and Ark.

Ichneumon detritus Brulle, 1846. *In* Lepeletier, *Hist. Nat. Ins. Hym.*, v. 4, p. 302. ♀.

Ichneumon indistinctus Provancher, 1875. *Nat. Canad.* 7 (1): 23 (key); 7 (3): 75. ♀.

Ichneumon illaetabilis Cresson, 1877. *Amer. Ent. Soc., Trans.* 6: 190. ♂.

Ichneumon innotabilis(?) Ashmead, 1900. *In* Smith, N. J. Bd. Agr., *Ann. Rpt.* 27, sup., p. 567. *Lapsus* for *I. illaetabilis*.

Taxonomy: Townes, 1961. *Ent. Soc. Wash., Proc.* 63: 107 (syn.). —Barron, 1975. *Nat. Canad.* 102: 487.

expunctus (Cresson). Newfoundland (insular), Que., Maine, N. Y., Ont., Ohio, Mich., Man., Colo., Alaska?, B. C.

Ichneumon oblitteratus Cresson, 1864. *Ent. Soc. Phila., Proc.* 3: 147. ♂. Preocc. by Wesmael, 1855.

Ichneumon expunctus Cresson, 1867. *Amer. Ent. Soc., Trans.* 1: 290. N. name for *I. oblitteratus* Cresson.

Trogus Provancheri Burque, 1879. *Nat. Canad.* 11 (no. 124): 128. ♂.

Genus TRICHOLABUS Thomson

Tricholabus Thomson, 1894. *Opusc. Ent.* 19: 2113.

Type-species: *Tricholabus femoralis* Thomson. Desig. by Viereck, 1914.

Epiopelmidea Viereck, 1913. U. S. Natl. Mus., *Proc.* 46: 374.

Type-species: *Epiopelmidea erythrogastra* Viereck. Monotypic and orig. desig.

Otohimea Uchida, 1926. Hokkaido Imp. Univ., Faculty Agr., *Jour.* 18: 146.

Type-species: *Otohimea nigra* Uchida. Orig. desig.

This is a Holarctic and Neotropic genus of moderate size.

Taxonomy: Townes and Townes, 1966. *Amer. Ent. Inst., Mem.* 8: 254 (syn.).

adventicus (Hopper). N. Y. s. to Fla. and Ala.

Ichneumon adventicus Hopper, 1938. *Amer. Ent. Soc., Trans.* 64: 101. ♂.

citatus (Provancher). Que., Maine, Mich., S. Dak., Colo., Alaska.

Ichneumon citatus Provancher, 1877. *Nat. Canad.* 9: 8. ♂.

Amblyteles tricolor Davis, 1898 (1897). *Amer. Ent. Soc., Trans.* 24: 351. ♀ (male misdet.?).

Ichneumon apicator Hopper, 1938. *Amer. Ent. Soc., Trans.* 64: 100. ♂.

foxleei Heinrich. B. C., Oreg., Calif.

Tricholabus foxleei Heinrich, 1961. *Canad. Ent. Sup.* 23: 396. ♂, ♀.

mittelli Heinrich. Mass., N. Y., N. J., Del., Md., Va., N. C., S. C., Ga., Miss., Ark. Ecology: Occurs in marshes, particularly salt marshes along the Atlantic coast and Gulf of Mexico.

Tricholabus mittelli Heinrich, 1961. *Canad. Ent. Sup.* 23: 395. ♂, ♀.

nortonii (Cresson). Que. w. to Alaska, s. to Va., Ohio, S. Dak., and Alta.

Ichneumon Nortonii Cresson, 1867. *Amer. Ent. Soc., Trans.* 1: 304. ♀.

Ichneumon merus Cresson, 1877. *Amer. Ent. Soc., Trans.* 6: 148. ♂.

pax (Dalla Torre). Wash.

Ichneumon pacificus Davis, 1898 (1897). *Amer. Ent. Soc., Trans.* 24: 350. ♂. Preocc. by Cameron, 1887.

Ichneumon pax Dalla Torre, 1902. *Cat. Hym.*, v. 3, p. 964. N. name for *I. pacificus* Davis.

Genus SPILICHNEUMON Thomson

Spilichneumon Thomson, 1894. *Opusc. Ent.* 19: 2087.

Type-species: *Ichneumon occisorius* Gravenhorst. Desig. by Ashmead, 1900. The type-species is Gravenhorst's identification of *I. occisorius* Fabricius.

Spiloteles Berthoumieu, 1904. *In* Wytzman, *Gen. Ins.*, fasc. 18, p. 54.

Type-species: *Ichneumon occisorius* Fabricius. Desig. by Viereck, 1914.

Pseudichneumon Kokujev, 1909. Acad. Imp. des Sci. St. Petersburg, Mus. Zool., Ann. 14: 12.

Type-species: *Pseudichneumon primarius* Kokujev. Monotypic.

This Holarctic and Oriental genus is apparently of moderate size.

borealis (Provancher). Newfoundland (insular), Que., Maine, Ont. Ecology: Heinrich (1971) said that "this species is confined to peat bogs, where it appears in the latter part of summer."

Amblyteles borealis Provancher, 1882. Nat. Canad. 13: 328. ♀.

Taxonomy: Heinrich, 1971. Nat. Canad. 98: 974-975.

bronteus (Cresson). Newfoundland (insular), Que., Maine, Pa., Ont., Mich., Colo., B. C.?

Ichneumon Bronteus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 144. ♂.

Ichneumon citrinus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 31. ♂. N. syn.; preocc. by Cresson, 1873; the information given by Heinrich (1968) indicates that this is the best disposition for the name *I. citrinus* Provancher until such time as it can be proven that the lectotype represents a valid species.

Taxonomy: Heinrich, 1968. Nat. Canad. 95: 722. — Heinrich, 1971. Nat. Canad. 98: 975-977.

inconstans (Cresson). revised status. Newfoundland (insular) w. to N. W. T., s. to Va., Mich., Colo., and Ariz. Host: *Crymodes devastator* (Brace).

Ichneumon (Ichneumon) aleatorius Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., Ed. 2, p. 585. Nomen nudum.

Ichneumon inconstans Cresson, 1864. Ent. Soc. Phila., Proc. 3: 153. ♂.

Ichneumon subrufus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 168. ♀. Preocc. by Gmelin, 1790.

Ichneumon comes var. *aleatorius* Cresson, 1867. Amer. Ent. Soc., Trans. 1: 301. ♂.

Taxonomy: Heinrich, 1959. Ent. News 70: 209 (syn.).

kodiakensis (Ashmead). Alaska.

Cratichneumon kodiakensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 157. ♂.

Taxonomy: Walkley, 1967. In Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2, sup. 2, p. 155.

nubivagus (Cresson). Newfoundland (Labrador) w. to B. C., s. to N. Y. and Colo.

Ichneumon consimilis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 163. ♂. Preocc. by Wesmael, 1845.

Ichneumon nubivagus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 291. N. name for *I. consimilis* Cresson.

Ichneumon aequalis Provancher, 1875. Nat. Canad. 7 (1): 23 (key); 7 (3): 76. ♂.

Amblyteles fraternus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 192. ♂.

Taxonomy: Heinrich, 1971. Nat. Canad. 98: 975-977 (female described and distinguished from female of *S. bronteus*).

pernigricornis Heinrich. Mont., Wyo., Utah.

Spilichneumon pernigricornis Heinrich, 1971. Nat. Canad. 98: 977. ♂, ♀.

physcoteloides Heinrich. Que., Maine, Mass., Mich.

Spilichneumon physcoteloides Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 191. ♂, ♀.

superbus (Provancher). Newfoundland (insular) w. to N. W. T. and B. C., s. to Tex., N. Mex., and Calif.; Hawaii. Host: *Euxoa (Chorizagrotis) auxiliaris* (Grote), *E. flavicollis* (Smith), *E. messoria* (Harris), *E. ochrogaster* (Gn.), *E. scandens* (Riley), *Feltia ducens* Wlk., *Pseudaletia unipuncta* (Haw.).

Amblyteles superbus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 35. ♀.

Ichneumon koebelei Swezey, 1909. Hawaii Sugar Planters' Assoc. Expt. Sta., Div. Ent., Bul. 7: 30. ♂, ♀.

Taxonomy: Heinrich, 1959. Ent. News 70: 209 (syn.).

taos (Cresson). Que., Maine, Mass., N. Mex., Alta.

Amblyteles Taos Cresson, 1877. Amer. Ent. Soc., Trans. 6: 191. ♀.

valdetypicus Heinrich. Maine, Man.

Spilichneumon valdetypicus Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 186. ♀.

Taxonomy: Heinrich, 1971. Nat. Canad. 98: 975 (variation).

Genus OBTUSODONTA Heinrich

Obtusodonta Heinrich, 1962. Canad. Ent. Sup. 29: 872.

Type-species: *Spilichneumon obscuricolor* Heinrich. Orig. desig.

This is a small genus of Holarctic distribution.

foxleei Heinrich. B. C.

Obtusodonta foxleei Heinrich, 1962. Canad. Ent. Sup. 29: 874. ♀.

manitobae Heinrich. Man., Alta.

Obtusodonta manitobae Heinrich, 1962. Canad. Ent. Sup. 29: 874. ♀.

obscuricolor (Heinrich). Que., Maine, Conn., N. Y., Ont., Sask.

Spilichneumon? obscuricolor Heinrich, 1961 (1960). Canad. Ent. Sup. 18: 195. ♂, ♀.

restricta (Cresson). Que., Maine, N. Y.

Ichneumon restrictus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 169. ♂.

Obtusodonta montana Heinrich, 1962. Canad. Ent. Sup. 29: 875. ♂, ♀.

Taxonomy: Heinrich, 1971. Nat. Canad. 98: 983 (syn.).

UNPLACED TAXA OF AMBLYTELESINA

The following species were not included in Heinrich's (1961-1962) work on the stenopneusticae of northeastern North America.

Amblyteles hudsonicus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 192. ♀. "Hudsons Bay Territory."

Ichneumon crudosus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 175. ♂. Calif.

Ichneumon Dakota Cresson, 1867. Amer. Ent. Soc., Trans. 1: 302. ♂. "Dakota Territory."

Ichneumon delicatus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 253. ♂. Colo.

Ichneumon dictiosus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 164. ♂. Kans.

Ichneumon (Barichneumon) Humphreyi Viereck, 1905. Kans. Acad. Sci., Trans. 19: 296. ♂. Ariz.

Ichneumon jurtus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 163. ♂. Colo.

Ichneumon semissus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 183. ♀. Calif. According to Cresson (1879), the type locality is Mohave Desert, Calif.

Taxonomy: Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 354.

Ichneumon sequax Cresson, 1877. Amer. Ent. Soc., Trans. 61: 181. ♀. Southern B. C.

Ichneumon ventralis Cresson, 1865. Ent. Soc. Phila., Proc. 4: 250. ♂. Colo.

SUBTRIBE PTEROCORMINA

Genus STENICHNEUMON Thomson

Stenichneumon Thomson, 1893. Opusc. Ent. 18: 1964.

Type-species: *Ichneumon pictorius* Gravenhorst. Desig. by Schmiedeknecht, 1902.

The type-species is regarded as a synonym of *S. militarius militarius* (Thunberg).

Myermo Cameron, 1901. Ann. and Mag. Nat. Hist. (7) 7: 523.

Type-species: *Myermo rufipes* Cameron. Monotypic. The type-species is regarded as a synonym of *S. appropinquans* (Cameron).

Chiaglas Cameron, 1902. Ann. and Mag. Nat. Hist. (7) 9: 152.

Type-species: *Chiaglas nigripes* Cameron. Monotypic.

Bolbomyschus Tosquinet, 1903. Soc. Ent. de Belg., Mem. 10: 342.

Type-species: *Bolbomyschus albipictus* Tosquinet. Monotypic.

The type-species is regarded as a synonym of *S. nigripes* (Cameron).

Stenichneumonoides Uchida, 1930. Insecta Matsumurana 9: 95.

Type-species: *Ichneumon posticalis* Matsumura. Orig. desig.

This is a moderate-sized genus of Neotropical, Holarctic, and Oriental distribution.

Taxonomy: Townes and Townes, 1966. Amer. Ent. Inst., Mem. 8: 263. (syn.).

culinator cincticornis (Cresson). Newfoundland (insular), Que., N. W. T., Yukon, and Alaska, s. to n. Ga., Ill., Colo., and Wash. Host: *Trichoplusia ni* (Hbn.). *S. culinator culinator* (Schränk) is Eurasian.

Ichneumon cincticornis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 139. ♀.

Ichneumon galenus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 292. ♂.

Ichneumon mathewi Cameron, 1907. Entomologist 40: 277. ♂.

Taxonomy: Heinrich, 1953. Wash. Acad. Sci., Jour. 43: 149. —Townes, 1961. Ent. Soc. Wash., Proc. 63: 109 (syn.).

militarius leucopus Heinrich. N. B. w. to Alaska, s. to Maine, Mich., and B. C. Host: "*Plusia*" sp. *S. militarius militarius* (Thunberg) is Eurasian.

Stenichneumon militarius leucopus Heinrich, 1962. Canad. Ent. Sup. 26: 525. ♂, ♀.

pallidipennis (Viereck). N. W. T., S. Dak., and N. Mex., w. to B. C. and Calif.

Cratichneumon pedalis var. *pallidipennis* Viereck, 1902. Ent. News 13: 87. ♂.

salvus (Cresson). P. E. I. w. to B. C., s. to N. H., Mich., and Oreg. This species appears to vary clinally from east to west. Heinrich (1962) recognized two subspecies; he used the name *bioculatus* for a transcontinental form; his nominate form apparently consisted only of some of the extreme variants from the western end of the range.

Ichneumon bioculatus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 158. ♂, ♀. N. syn.

Ichneumon salvus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 166. ♂.

Cratichneumon rubicundus Bradley, 1904. Ztschr. System. Hym. Dipt. 4: 106. ♀.

Genus PATROCLOIDES Heinrich

Patrocloides Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 16.

Type-species: *Amblyteles perluctuosus* Provancher. Monotypic and orig. desig.

This is a small Holarctic genus.

montanus (Cresson). Newfoundland (insular) w. to Wash., s. to n. Ga., N. Mex., and Calif. Host: *Syngrapha* sp., *Trichoplusia ni* (Hbn.).

Ichneumon montanus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 141. ♂, ♀.

Patrocloides montanus occidentalis Heinrich, 1962. Canad. Ent. Sup. 26: 517. ♀. N. syn.

perluctuosus (Provancher). Newfoundland (insular), w. to B. C., s. to Mass. and Mich. Host:

Syngrapha epigaea (Grt.), *S. selecta* (Wlk.).

Amblyteles perluctuosus Provancher, 1877. Nat. Canad. 9: 10. "♂" = ♀.

walleyi (Heinrich). Que., Ont., Wis., N. W. T., Alta.

Patroclus walleyi Heinrich, 1956. Canad. Ent. 88: 486. ♂, ♀.

Genus PATROCLUS Cresson

Patroclus Cresson, 1873. Acad. Nat. Sci. Phila., Proc. 25: 104.

Type-species: *Patroclus nigrocaeruleus* Cresson. Desig. by Ashmead, 1900.

Pseudoamblyteles Heinrich, 1926. Deut. Ent. Ztschr. (1926), p. 255.

Type-species: *Amblyteles homocerus* Wesmæl. Monotypic.

Ctenamblyteles Heinrich, 1928. Deut. Ent. Ztschr. (1928), p. 141. Unnecessary n. name for *Pseudoamblyteles* Heinrich (*Pseudoamblyteles* not preocc. by *Pseudamblyteles* Ashmead).

This is a small Neotropical and Holarctic genus.

Taxonomy: Townes and Townes, 1966. Amer. Ent. Inst., Mem. 8: 263 (syn.).

homocerus homocerus (Wesmæl.). Que. w. to Alaska, s. to Colo. and Utah; Eurasia. Townes, Momoi, and Townes (1965) recognized *P. homocerus karafutonis* (Uchida) as a distinct subspecies from Sakhalin.

Amblyteles homocerus Wesmæl., 1854. [Brussels] Acad. Roy. de Belg., Bul. 21, Annexe aux Bul. 1853-1854, p. 120. ♂, ♀.

Taxonomy: Townes, Momoi, and Townes, 1965. Amer. Ent. Inst., Mem. 5: 455.

Genus PROTOPELMUS Heinrich

Protopelmus Heinrich, 1959. Ent. Soc. Wash., Proc. 61: 200.

Type-species: *Trogus atrocaeruleus* Cresson. Monotypic and orig. desig.

A single species is known.

atrocaeruleus (Cresson). Northeastern Md., Fla., La.; Mexico. Host: *Ecpantheria muzina* Oberthur, *E. scribonia* (Stoll).

Trogus atrocaeruleus Cresson, 1868. Amer. Ent. Soc., Trans. 2: 92. ♀.

Trogus atrocaeruleus Dalla Torre, 1902. Cat. Hym., v. 3, p. 1032. Emend.

Genus ORGICHNEUMON Heinrich

Orgichneumon Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 15.

Type-species: *Ichneumon calcatorius* Thunberg. Monotypic and orig. desig.

This is a small genus of Holarctic and Oriental distribution.

calcatorius (Thunberg). N. S. w. to B. C., s. to S. C., Tex., and Oreg.; Europe. Host: *Dasychira griseifacta* (Dyar)?, *D. plagiata* (Wlk.), *Orygia antiqua* (L.), *O. leucostigma* (J. E. S.), *O. pseudotsugata* McD.

Ichneumon calcatorius Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 254; 9: 291. ♀.

Ichneumon otiosus Say, 1829 Contrib. Maclurian Lyceum to Arts and Sci. 1: 69. ♀.

Ichneumon infidelis Cresson, 1867. Amer. Ent. Soc., Trans. 1: 296. ♂.

Ichneumon sylvanus Holmgren, 1880. Ent. Tidskr. 1: 27. ♀ (male misdet.).

Ichneumon (Cratichneumon) burkei Viereck, 1910. U. S. Natl. Mus., Proc. 38: 383. ♂.

Ichneumon (Stenichneumon) calcatorius var. *nigritarsis* Schmiedeknecht, 1928. Opusc.

Ichn., Sup., fasc. 4, p. 219. Syn.? Preocc. by Kriechbaumer, 1889.

Taxonomy: Roman, 1912. Zool. Bidr. Uppsala 1: 240 (syn.). — Heinrich, 1953. Wash. Acad. Sci., Jour. 43: 148. — Heinrich, 1957 (1956). Canad. Ent. 88: 647-648. — Heinrich, 1959. Ent. News 70: 211.

Genus THYRATELES Perkins

Thyrateles Perkins, 1953. Brit. Mus. (Nat. Hist.) Ent., Bul. 3: 149.

Type-species: *Amblyteles camelinus* Wesmael. Monotypic and orig. desig.

This is a small Holarctic genus which is rather arbitrarily separated from *Pterocormus*.

Taxonomy: Townes and Townes, 1973. Amer. Ent. Inst., Mem. 19: 263 (syn.).

amoenapex Heinrich. N. W. T.

Thyrateles amoenapex Heinrich, 1961. Canad. Ent. Sup. 21: 357. ♀.

caliginops Heinrich. Que. w. to Minn., s. to W. Va. and Ohio. Host: *Vanessa atalanta* (L.).

Thyrateles caliginops Heinrich, 1961. Canad. Ent. Sup. 21: 351. ♂, ♀.

camelinops Heinrich. Alta., B. C. Host: *Nymphalis milberti* (Goed.), *Polygonia* sp.

Thyrateles camelinops Heinrich, 1961. Canad. Ent. Sup. 21: 349. ♂, ♀.

instabilis (Cresson). Maine, N. H., N. Y., N. J., Ont., Ohio, Mich., Ind., S. Dak., Calif. Host:

Colias eurytheme Bois., *C. philodice* Godt., *Satyrus* sp.

Ichneumon instabilis Cresson, 1867. Amer. Ent. Soc., Trans. 1: 303. ♂, ♀.

Biology: Dasch, 1971. Ohio Jour. Sci. 71: 278 (hibernation sites). — Heinrich, 1971. Nat. Canad. 98: 973 (hibernation site).

lugubratr (Gravenhorst). N. S. w. to B. C., s. to central Ga., Tex., and Calif.; Hawaii. Host:

Cynthia cardui (L.), *C. virginensis* (Drury), *Nymphalis milberti* (Godt.), *Polygonia comma* (Harris).

Ichneumon lugubratr Gravenhorst, 1807. Vergl. Uebers. Zool. Systeme, p. 256. [male].

Ichneumon rufiventris Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 301. ♂, ♀.

Ichneumon incertus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 180. ♀. Preocc. by Sulzer, 1776 and Christ, 1791.

Ichneumon californicus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 180. ♂.

Ichneumon hunterae Packard, 1881. Boston Soc. Nat. Hist., Proc. 21: 22. ♂, ♀.

Ichneumon vulviventris (!) Nason, 1905. Ent. News 16: 148. Lapsus for *I. rufiventris* Brulle.

Taxonomy: Kriechbaumer, 1875. Stettin. Ent. Ztg. 36: 41. — Townes, 1961. Ent. Soc. Wash., Proc. 63: 108, 109, 169-170.

mormonus (Cresson). Que., Ont., Colo., Alta., Utah. Host: *Polygonia* sp.

Amblyteles mormonus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 190. ♀. According to Cresson (1879) the type locality is "Great Salt Lake, Utah."

Ichneumon adjunctus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 29. ♀.

Craticheumon pedalis var. *varitarsis* Viereck, 1902. Ent. News 13: 87. ♀.

Taxonomy: Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 355.

procax (Cresson). Ont., Alaska. Host: *Nymphalis antiopa* (L.).

Ichneumon procax Cresson, 1877. Amer. Ent. Soc., Trans. 6: 170. ♂.

Amblyteles torontosus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 351. ♀.

Genus PTEROCORMUS Foerster

Brachypterus Gravenhorst, 1829. Ichn. Europaea, v. 1, p. 673. Preocc. by Kugelman, 1794.

Type-species: *Brachypterus means* Gravenhorst. Monotypic. The type-species is regarded as a synonym of *P. latrator* (Fabricius).

Pterocormus Foerster, 1850. Arch. f. Naturgesch. 16: 71. N. name for *Brachypterus* Gravenhorst.

Colobacis Cameron, 1900. New Zeal. Inst., Trans. 33: 110.

Type-species: *Colobacis forticornis* Cameron. Monotypic. The type-species is regarded as a synonym of *P. lotatorius* (Fabricius).

Tyanites Cameron, 1903. Entomologist 36: 95.

Type-species: *Tyanites rufipes* Cameron. Monotypic.

Vabsaris Cameron, 1903. Entomologist 36: 96.

Type-species: *Vabsaris forticornis* Cameron. Monotypic. The type-species is regarded as a synonym of *P. rufipes* (Cameron).

Euchneumon Berthomieu, 1904. Gen. Ins., fasc. 18, p. 33.

Type-species: *Ichneumon sarcitorius* Linnaeus. Desig. by Townes, 1944.

Matsumuraius Ashmead, 1906. U. S. Natl. Mus., Proc. 30: 169.

Type-species: *Matsumuraius grandis* Ashmead. Monotypic. The type-species is regarded as a subspecies of *P. primatorius* (Forster).

Coreojoppa Uchida, 1926. Hokkaido Imp. Univ., Faculty Agr., Jour. 18: 63.

Type-species: *Coreojoppa flavomaculata* Uchida. Monotypic and orig. desig.

Bureschias Heinrich, 1936. K. Naturw. Inst. Sofia, Mitt. 9: 82.

Type-species: *Bureschias balcanicus* Heinrich. Orig. desig. The type-species is regarded as a synonym of *P. tuberosus* (Berthomieu).

This is a very large genus with species occurring throughout the Old and New World, but apparently with greater numbers of species in temperate areas.

Taxonomy: Townes and Townes, 1973. Amer. Ent. Inst., Mem. 19: 263 (syn.).

adonis (Viereck). N. Mex.

Craticheumon adonis Viereck, 1903. In Skinner, Amer. Ent. Soc., Trans. 29: 77. ♂.

alpestriformis (Viereck). Western Alaska.

Amblyteles (*Pterocormus*) *alpestriformis* Viereck, 1923. North Amer. Faune 46: 234. ♀.

Taxonomy: Heinrich, 1957 (1956). Canad. Ent. 88: 690-691.

amauropus (Heinrich), n. comb. Northern N. W. T.

Ichneumon amauropus Heinrich, 1956. Canad. Ent. 88: 481. ♀.

ambulatorius (Fabricius). Newfoundland (nsular) w. to B. C., s. to Ga., Kans., N. Mex., and Oreg. Host: *Crymodes devastator* (Brace), *Faronta diffusa* (Wlk.), *Luperina stipata* (Morr.), *Macronoctua onusta* Grt., *Papaipema circumlucens* (Smith), *P. nebris* (Gn.), *Pseudaletia unipuncta* (Haw.).

Ichneumon ambulatorius Fabricius, 1775. Systema Ent., p. 329. [female].

Ichneumon multor Harris, 1833. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., p. 587.

Nomen nudum; uncertain syn.

Ichneumon jucundus Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 305. ♀.

Ichneumon flavizonatus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 156. ♂.

Ichneumon multor Cresson, 1867. Amer. Ent. Soc., Trans. 1: 299. ♂.

Taxonomy: Perkins, 1952. Entomologist 85: 66. —Heinrich, 1953. Wash. Acad. Sci., Jour. 43: 149. —Townes, 1961. Ent. Soc. Wash., Proc. 63: 106, 108, 168.

annulatorius (Fabricius). Newfoundland (insular) s. to Va., w. to Iowa.

Ichneumon annulatorius Fabricius, 1775. Systema Ent., p. 330. [male].

Ichneumon funestus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 166. ♀.

Ichneumon haesstans Provancher, 1875. Nat. Canad. 7 (1): 24 (key). ♀.

Ichneumon hoestans(!) Provancher, 1875. Nat. Canad. 7 (3): 80.

Taxonomy: Perkins, 1952. Entomologist 85: 67. —Townes, 1961. Ent. Soc. Wash., Proc. 63: 106, 169.

approximans (Provancher). Ont.

Ichneumon approximans Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 32. ♂.

artemis (Viereck). Newfoundland (Labrador), n. Man., Colo., Alta.

Cratichneumon artemis Viereck, 1902. Ent. News 13: 87. ♀.

atrox (Cresson). Newfoundland (Labrador), Ont., Man., S. Dak., Colo., Alaska, B. C.

Ichneumon atrox Cresson, 1877. Amer. Ent. Soc., Trans. 6: 151. ♀.

audax (Cresson). Colo.

Ichneumon audax Cresson, 1864. Ent. Soc. Phila., Proc. 3: 143. ♂.

bimembris (Provancher). Que., Maine, N. H., N. Y., Pa., Md., Va., Ont., Mich., Alta.

Ichneumon bimembris Provancher, 1877. Nat. Canad. 9: 8. ♀.

broweri (Heinrich), n. comb. Maine.

Ichneumon broweri Heinrich, 1961. Canad. Ent. Sup. 21: 337. ♀.

browni (Heinrich), n. comb. Eastern Que.

Ichneumon browni Heinrich, 1961. Canad. Ent. Sup. 21: 277. ♀.

Taxonomy: Heinrich, 1969. Nat. Canad. 96: 951.

browniops (Heinrich), n. comb. Maine.

Ichneumon browniops Heinrich, 1969. Nat. Canad. 96: 950. ♀.

byrdiae (Heinrich), n. comb. Northwestern N. W. T., n. Yukon. Host: *Gynaephora rossi* (Curt.).

Ichneumon byrdiae Heinrich, 1956. Canad. Ent. 88: 479. ♂, ♀.

byridops (Heinrich), n. comb. Southern Alaska.

Ichneumon byridiops Heinrich, 1956. Canad. Ent. 88: 480. ♀.

caliginosus (Cresson). Newfoundland (insular), N. W. T., and Alaska, s. to W. Va., Mich., and Colo. Host: *Polygonia gracilis* (G. and R.), *P. interrogationis* (F.), *P. satyrus* (Ed.).

Ichneumon caliginosus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 144. ♀.

calitergus (Cresson). Que., Maine, Mass., N. Y., Md., W. Va., Ont., Mich.

Ichneumon calitergus Harris, 1835. In Hitchcock, Rpt. Geol. Mineral. Bot. Zool. Mass., Ed. 2, p. 586. Nomen nudum.

Ichneumon calitergus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 299. ♀.

canadensis (Cresson). N. S., N. B., Que., Maine, N. H., Ont., Ohio, Mich., Wis., Sask. Host:

Ctenucha virginica (Charp.). Heinrich (1959b, 1961) incorrectly used the synonym *trizonatus* instead of *canadensis* as the valid name for this species; Heinrich's (1959a) selection of a new lectotype for *canadensis* (= *clasma* n. sp., below) did not invalidate the lectotype selected by Cresson (1916) because lack of agreement with the original description is not sufficient proof that the lectotype selected by Cresson was not one of his original syntypes.

Ichneumon canadensis Cresson, 1867. Amer. Ent. Soc., Trans. 1: 308. ♀.

Ichneumon trizonatus Provancher, 1877. Nat. Canad. 9: 8. ♂. N. syn.

Amblyteles ctenuchae Cushman, 1933. U. S. Natl. Mus., Proc. 82: 3. ♀.

Taxonomy: Cresson, 1916. Amer. Ent. Soc., Mem. 1: 23. —Townes, 1944. Amer. Ent. Soc., Mem. 11: 382-383 (syn.). —Heinrich, 1959a, Ent. News 70: 104. —Heinrich, 1959b, Canad. Ent. 91: 806 (syn.). —Heinrich, 1961. Canad. Ent. Sup. 21: 238, 292-293.

- canadicola** (Heinrich), n. comb. Newfoundland (insular), Que., Maine, Mass., Ont., Ohio, Mich.
Ichneumon canadicola Heinrich, 1961. Canad. Ent. Sup. 21: 293. ♀.
- centrator** (Say). Que. w. to B. C., s. to N. C., Mo., and Oreg. Host: *Isia isabella* (J. E. S.).
Ichneumon centrator Say, 1825. Amer. Ent. 2: 49. ♀.
Ichneumon flavicornis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 140. ♂.
Ichneumon fortis Provancher, 1875. Nat. Canad. 7 (1): 24 (key); 7 (3): 83. ♂.
- cervulus** (Provancher). Newfoundland (insular), Que., Maine, Ont., Mich., Alta. Ecology: Occurs in peat bogs. Although the specimen which Heinrich (1961, 1976) regarded as the "holotype" is not the valid lectotype selected by Gahan and Rohwer (1917), Barron (1975) indicated that the former specimen is conspecific with the lectotype.
Ichneumon cervulus Provancher, 1875. Nat. Canad. 7 (1): 24 (key); 7 (3): 83. ♂.
Phygadeuon terminatus Provancher, 1882. Nat. Canad. 13 (no. 155): 335 (key); 13 (no. 156): 357. ♀. Preocc. by Gravenhorst, 1829.
- Taxonomy: Gahan and Rohwer, 1917. Canad. Ent. 49: 430. — Heinrich, 1961. Canad. Ent. Sup. 21: 271. — Barron, 1975. Nat. Canad. 102: 448. — Heinrich, 1976 (1975). Nat. Canad. 102: 758-760 (syn.).
- Biology: Heinrich, 1969. Nat. Canad. 96: 943 (habitat).
- cessatorops** (Heinrich), n. comb. Que., Alta., Yukon.
Ichneumon cessatorops Heinrich, 1956. Canad. Ent. 88: 484. ♀.
Ichneumon cessatorops Kazubazuae Heinrich, 1956. Canad. Ent. 88: 485. ♀.
- Taxonomy: Heinrich, 1961. Canad. Ent. Sup. 21: 319-320 (male described).
- chasmodops** (Heinrich), n. comb. Que., Maine, N. H., N. Y., Ont., Mich., Minn., Man.
Ichneumon chasmodops Heinrich, 1961. Canad. Ent. Sup. 21: 259. ♀ (♂ misdet.). Heinrich (1962) stated that the male he had misidentified as *chasmodops* is 1961 is actually the male of *feralis* (Cresson), and another male was associated with *chasmodops* and described.
- Taxonomy: Heinrich, 1962. Canad. Ent. Sup. 29: 977-878.
- citrifrons** (Cresson). N. J., Pa., Ont., Mich., Ill.
Ichneumon citrifrons Cresson, 1867. Amer. Ent. Soc., Trans. 1: 307. ♂.
- clarimontis** (Cameron). Calif.
Ichneumon clarimontis Cameron, 1908. Amer. Ent. Soc., Trans. 34: 241. ♂.
- Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 107.
- clasma** Carlson, n. sp. Newfoundland (insular) s. to N. Y., w. to Mich. and Ill. Host: *Pseudaletia unipuncta* (Haw.). Heinrich (1961) gave a description of both the males and females of this species, but erroneously applied the name *canadensis* (Cresson) by virtue of his (1959) invalid selection of a new lectotype for *canadensis* (which see); Heinrich's new lectotype for *I. canadensis* Cresson is the holotype of *P. clasma*.
Ichneumon canadensis Cresson sensu Heinrich, 1961. Canad. Ent. Sup. 21: 238-240. ♂, ♀.
- Taxonomy: Heinrich, 1959. Ent. News 70: 104.
- commodus** (Davis). Utah, Wash.
Eurylabus commodus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 354. ♂.
- compar** (Cresson). Southwestern B. C.
Ichneumon compar Cresson, 1877. Amer. Ent. Soc., Trans. 6: 175. ♀.
- conscopa** (Heinrich), n. comb. Maine.
Ichneumon conscopa Heinrich, 1961. Canad. Ent. Sup. 21: 250. ♀.
- Taxonomy: Heinrich, 1971. Nat. Canad. 98: 969.
- contractus** (Ashmead). Alaska.
Amblyteles contractus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 393. ♀.
- creperus** (Cresson). Que., Ont., w. N. W. T., and Alaska, s. to Conn., Ohio, Colo., and s. B. C. Host: *Actebia fennica* (Tausch.).
Ichneumon creperus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 298. ♂.
Amblyteles (Pterocornus) footei Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 353, 357. ♂.

cupitus (Cresson). Idaho, Wash., Oreg., Calif.; Hawaii.

Ichneumon cupitus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 175. ♂.

Taxonomy: Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 350 (redescription).

—Townes, Townes, and Gupta, 1961. Amer. Ent. Inst., Mem. 1: 383.

curticrus (Provancher). Que., Man.

Phygadeuon curticus Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 360. ♀.

devinctor (Say). Que. w. to s.w. N. W. T. and B. C., s. to Ga., Mo., and Colo. Host: *Cossus* sp.,

Prionoxystus robiniae (Peck), *Sthenopsis thule* (Stkr.).

Ichneumon devinctor Say, 1825. Amer. Ent. 2: 48. ♀.

Ichneumon tibialis Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 300. ♀. Preocc. by Geoffroy, 1785.

Ichneumon montivagus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 255. ♂.

difficilis (Cresson). Wash., Calif.

Ichneumon difficilis Cresson, 1877. Amer. Ent. Soc., Trans. 6: 176. ♂.

Taxonomy: Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 351.

dillerorum (Heinrich), n. comb. Maine.

Ichneumon dillerorum Heinrich, 1968. Nat. Canad. 95: 720. ♀.

dionymus Carlson, n. name. Que. w. to Mich., s. to Va. and Ohio.

Ichneumon anonymus Heinrich, 1961. Canad. Ent. Sup. 21: 255. ♂, ♀. Preocc. by Cuvier, 1833.

dioryctiae (Heinrich), n. comb. N. B. Que., Maine, Ont., Mont. Host: *Dioryctria reniculella* (Grt.).

Ichneumon dioryctiae Heinrich, 1961. Canad. Ent. Sup. 21: 341. ♂, ♀.

Ichneumon dioryctiae Walkley, 1967. In Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2, sup. 2, p. 160. Unjustified emend. (Heinrich had spelled the host name "*Dioryctia*").

discoensis (Fox). Greenland. This species has not been treated in any of the papers on North American Ichneumoninae by Heinrich.

Ichneumon discoensis Fox, 1892. Acad. Nat. Sci. Phila., Proc. 44: 134. ♂.

dorsalis (Cresson). Colo.

Ichneumon dorsalis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 177. ♀. Preocc. by Fabricius, 1798; not renamed here because the species has not been included in any recent revision, and therefore may prove to have synonyms.

egregiafacialis (Viereck). Colo.

Ichneumon (Barichneumon) egregiafacialis Viereck, 1905. Kans. Acad. Sci., Trans. 19: 291. ♂.

eurypus (Heinrich), n. comb. Que., Maine, Ont., s.w. N. W. T., Alta.

Ichneumon eurypus Heinrich, 1961. Canad. Ent. Sup. 21: 325. ♀.

faciens (Davis). Alta., Idaho, Wash.

Ichneumon faciens Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 350. ♂.

feralis (Cresson). Newfoundland (Labrador) s. to N. Y., w. to Alta. Host: *Hepialus mustelinus* Pack? The male of this species was misidentified as that of *chasmodops* by Heinrich

(1961); the error was corrected by Heinrich (1962).

Ichneumon feralis Cresson, 1867. Amer. Ent. Soc., Trans. 1: 301. ♀.

Taxonomy: Heinrich, 1961. Canad. Ent. Sup. 21: 230, 260-261. —Heinrich, 1962. Canad. Ent. Sup. 29: 877, 879-880.

feriens (Heinrich), n. comb. Newfoundland (insular) w. to Alaska, s. to N. Y., Mich., and s. B. C.

Ichneumon feriens Heinrich, 1961. Canad. Ent. Sup. 21: 321. ♂, ♀.

Taxonomy: Heinrich, 1969. Nat. Canad. 96: 944 (additional characters for distinguishing male).

festus (Cresson). Colo.

Ichneumon bipunctatus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 253. ♂. Preocc. by Gmelin, 1790, Schrank, 1802, and Cuvier, 1833.

Ichneumon festus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 257. ♂.

flavofacialis (Viereck). Colo.*Ichneumon (Probolus) flavofacialis* Viereck, 1905. Kans. Acad. Sci., Trans. 19: 291. ♂.**foxleei** (Heinrich), n. comb. Wyo., Yukon, B. C.*Ichneumon foxleei* Heinrich, 1961. Canad. Ent. Sup. 21: 309. ♀. Preocc. secondarily by *Ichneumon foxleei* (Heinrich), 1961.**fuscifrons** (Cresson). Que. w. to Minn., s. to Ill.*Ichneumon fuscifrons* Cresson, 1864. Ent. Soc. Phila., Proc. 3: 166. ♀.**gaviscolor** (Heinrich), n. comb. Northern Que.*Ichneumon gaviscolor* Heinrich, 1956. Canad. Ent. 88: 485. ♀.**gestuosus** (Cresson), n. comb. Maine, N. H., Ont. Host: *Choristoneura fumiferana* (Clem.).*Ichneumon gestuosus* Cresson, 1877. Amer. Ent. Soc., Trans. 6: 156. ♀.

Taxonomy: Heinrich, 1959. Ent. News 70: 207.

glacialis (Ashmead). Southeastern Alaska.*Ichneumon glacialis* Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 154. ♂.**glaucopygos** (Heinrich), n. comb. Que., Maine, Mass., N. Y.*Ichneumon glaucopygos* Heinrich, 1961. Canad. Ent. Sup. 21: 248. ♀.

Taxonomy: Heinrich, 1971. Nat. Canad. 98: 969.

gracilicornops (Heinrich), n. comb. Newfoundland (Labrador) s. to Maine, w. to Alta.*Ichneumon gracilicornops* Heinrich, 1961. Canad. Ent. Sup. 21: 278. ♀.**grandisops** (Heinrich), n. comb. Conn., N. Y., w. N. C., Ohio.*Ichneumon grandisops* Heinrich, 1961. Canad. Ent. Sup. 21: 305. ♀.

Taxonomy: Heinrich, 1971. Nat. Canad. 98: 970-971 (male described).

hemimelanarius (Viereck). Ariz.*Ichneumon hemimelanarius* Viereck, 1906. Amer. Ent. Soc., Trans. 32: 226. ♂.**heterocampae** (Cushman). Que. s. to Md., w. to Mich. and Ohio. Host: *Heterocampa guttivitta* (Wlk.).*Amblyteles heterocampae* Cushman, 1933. U. S. Natl. Mus., Proc. 82: 2. ♀.

Taxonomy: Heinrich, 1969. Nat. Canad. 96: 942.

heterodon (Heinrich), n. comb. N. Y., Ont., Ohio.*Ichneumon heterodon* Heinrich, 1961. Canad. Ent. Sup. 21: 306. ♀.**hiemalis** (Cresson). Southwestern Alaska.*Ichneumon hiemalis* Cresson, 1877. Amer. Ent. Soc., Trans. 6: 180. ♀.**hiltoni** (Heinrich), n. comb. Maine. Ecology: Collected in a mountain meadow.*Ichneumon hiltoni* Heinrich, 1969. Nat. Canad. 96: 952. ♀.**hippisleayae** (Heinrich), n. comb. Mich., s. Man.*Ichneumon hippisleayae* Heinrich, 1961. Canad. Ent. Sup. 21: 264. ♀.**homoioden** (Heinrich), n. comb. N. J., Mich.*Ichneumon homoioden* Heinrich, 1961. Canad. Ent. Sup. 21: 311. ♀.**homorus** (Heinrich), n. comb. Newfoundland (insular), N. B., Que., Maine, Vt., Ont., Mich.*Ichneumon homorus* Heinrich, 1961. Canad. Ent. Sup. 21: 322. ♀.

Taxonomy: Heinrich, 1969. Nat. Canad. 96: 945-946 (male described).

hospitus (Cresson). Maine, "Canada," Ill.*Ichneumon hospitus* Cresson, 1867. Amer. Ent. Soc., Trans. 1: 306. ♂, ♀.

Taxonomy: Heinrich, 1969. Nat. Canad. 96: 950.

hypermelanos (Heinrich), n. comb. Ont.*Ichneumon hypermelanos* Heinrich, 1961. Canad. Ent. Sup. 21: 259. ♀.**infucatus** (Cresson). Colo.*Ichneumon infucatus* Cresson, 1865. Ent. Soc. Phila., Proc. 4: 252. ♂.**inurbanus** (Cresson). W. Va., Ohio, Colo.*Ichneumon inurbanus* Cresson, 1867. Amer. Ent. Soc., Trans. 1: 302. ♀.

klagesi (Viereck). Pa.

Ichneumon flavofacialis Viereck, 1906. Amer. Ent. Soc., Trans. 32: 245. ♂. Preocc. by Viereck, 1905.

Ichneumon klagesi Viereck, 1912. U. S. Natl. Mus., Proc. 43: 591. N. name for *I. flavofacialis* Viereck, 1905.

kodiakensis (Ashmead). Southwestern Alaska.

Ichneumon kodiakensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 153. ♂.

lachrymans (Provancher). Newfoundland (insular), Que., Maine, N. H., Mass., N. Y., Ont., Mich. *Phygadeuon dorsalis* Provancher, 1874. Nat. Canad. 6: 285. ♀. Preocc. in *Pterocormus* by Cresson, 1864.

Ichneumon lachrymans Provancher, 1875. Nat. Canad. 7 (1): 24 (key); 7 (3): 78. ♂. Barron (1975) did not prove that the lectotype selected by Gahan and Rohwer (1917) was not one of Provancher's two syntypes. Therefore, the new lectotype selected by Barron has no validity.

Taxonomy: Gahan and Rohwer, 1917. Canad. Ent. 49: 431. — Barron, 1975. Nat. Canad. 102: 463, 492-493.

lacunae (Heinrich), n. comb. Maine.

Ichneumon lacunae Heinrich, 1969. Nat. Canad. 96: 948. ♀.

laetus (Brulle). Que. w. to Alaska, s. to Va., and Iowa. Host: *Pseudaletia unipuncta* (Haw.).

Ichneumon laetus Brulle, 1846. In Lepeletier, Hist. Nat. Ins., Hym., v. 4, p. 303. ♂.

Ichneumon leucaniae Fitch, 1861. Boston Cultivator 23: 276. ♀.

Ichneumon seminiger Cresson, 1864. Ent. Soc. Phila., Proc. 3: 167. ♀.

lariae (Curtis), n. comb. Newfoundland (coastal Labrador), n. Que., N. H., N. W. T., n. Man.; Greenland.

Ichneumon Lariae Curtis, 1835. In Ross, Narrative of Second Voyage in Search of a No.-W. Passage 1829-33, App., p. lxi. ♀.

Cratichneumon Aurivillii Roman, 1916. Arkiv for Zool. 10 (22): 5. ♀.

Ichneumon lariae subarcticus Heinrich, 1957 (1956). Canad. Ent. 88: 689. ♀. N. syn.

Ichneumon lariae labradoris Heinrich, 1957 (1956). Canad. Ent. 88: 690. ♀. N. syn.

leucocoxalis (Heinrich), n. comb. Maine, Pa.

Ichneumon leucocoxalis Heinrich, 1961. Canad. Ent. Sup. 21: 266. ♀.

lewisi (Cresson), n. comb. N. Y. s. to n. Ga., w. to Iowa and Mo. Host: *Apanteles* sp.

Ichneumon Lewisii Cresson, 1864. Ent. Soc. Phila., Proc. 3: 177. ♀.

Ichneumon fulvopictus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 391. ♂. Heinrich (1961) erroneously stated that the holotype is from Mont.; it is from Mo.

Taxonomy: Heinrich, 1959. Ent. News 70: 207. — Heinrich, 1961. Canad. Ent. Sup. 21: 300-302.

longulus (Cresson). Colo.

Ichneumon longulus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 171. ♂.

mainensis (Heinrich), n. comb. Maine.

Ichneumon mainensis Heinrich, 1962. Canad. Ent. Sup. 29: 880. ♀.

maius (Cresson). N. B., Que., Maine, Mass., Ont., Mich. Host: *Tigroides bicolor* (Grt.).

Ichneumon maius Cresson, 1867. Amer. Ent. Soc., Trans. 1: 307. ♀.

masoni (Heinrich), n. comb. Southwestern Alaska.

Ichneumon masoni Heinrich, 1956. Canad. Ent. 88: 479. ♀.

melanarecticus (Heinrich), n. comb. Newfoundland (n. Labrador), e. Que.

Ichneumon melanarecticus Heinrich, 1961. Canad. Ent. Sup. 21: 331. ♀.

mendax (Cresson). Que. s. to s. S. C., w. to Colo. and Tex.

Ichneumon mendax Cresson, 1877. Amer. Ent. Soc., Trans. 6: 149. ♀.

Phygadeuon Guignardi Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 50. ♀.

microferiens (Heinrich), n. comb. Newfoundland (insular), Ont., Man., Alta., Alaska.

Ichneumon microferiens Heinrich, 1961. Canad. Ent. Sup. 21: 323. ♀.

Taxonomy: Heinrich, 1976 (1975). Nat. Canad. 102: 758 (male described).

mystificans (Heinrich), n. comb. Newfoundland (Labrador and insular), Maine, Mich.

Ichneumon mystificans Heinrich, 1961. Canad. Ent. Sup. 21: 342. ♂.

nanusniger (Heinrich), n. comb. Newfoundland (insular).

Ichneumon nanusniger Heinrich, 1976 (1975). Nat. Canad. 102: 760. ♂, ♀.

nearctivernus (Heinrich), n. comb. Maine, Ont., Mich., N. W. T., Sask., Alta., Yukon, Alaska.

Ichneumon computatorius nearctivernus Heinrich, 1957 (1956). Canad. Ent. 88: 648. ♀.

Taxonomy: Heinrich, 1961. Canad. Ent. Sup. 21: 339.

nebularum (Heinrich), n. comb. Newfoundland (Labrador), N. H.?

Ichneumon nebularum Heinrich, 1956. Canad. Ent. 88: 483. ♀.

neomolitor (Heinrich), n. comb. Newfoundland (insular), Maine, Alta. Ecology: Occurs in spruce (*Picea mariana*) bogs.

Ichneumon neomolitor Heinrich, 1961. Canad. Ent. Sup. 21: 329. ♀.

Biology: Heinrich, 1969. Nat. Canad. 96: 946-947.

neosarcitor (Heinrich), n. comb. Maine.

Ichneumon neosarcitor Heinrich, 1961. Canad. Ent. Sup. 21: 244. ♂, ♀.

nereni emigrator (Heinrich), n. comb. Newfoundland (insular), P. E. I., Que., Maine, Ont. *P. nereni* nereni (Thomson) is Eurasian.

Ichneumon nereni emigrator Heinrich, 1961. Canad. Ent. Sup. 21: 289. ♂, ♀. *Ichneumon emigrator* Walkenaer, 1802 is apparently a lapsus for *I. migrator* Fabricius, 1785 and, therefore, would not preoccupy *emigrator* Heinrich.

nigrotergus (Davis). S. Dak.

Ichneumon nigrotergus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 350. ♀.

Taxonomy: Heinrich, 1961. Canad. Ent. Sup. 23: 417.

nigrovariegatus (Provancher). Newfoundland (insular) s. to S. C., w. to Mich.

Ichneumon humilis Provancher, 1875. Nat. Canad. 7 (1): 24 (key); 7 (3): 82. "♂" = ♀.

Preocc. by Wesmalt, 1857.

Phygadeuon nigrovariegatus Provancher, 1875. Nat. Canad. 7 (6): 182. ♀.

Ichneumon humillimus Dalla Torre, 1902. Cat. Hym., v. 3, p. 923. N. name for *Ichneumon humilis* Provancher. Townes (1944) regarded *I. humilis* as replacing *Phygadeuon dorsalis* Provancher (formerly a synonym of *humilis*), but I do not think this view is tenable. *I. humilis* is the name which had been in use for the species most immediately preceding Dalla Torre's proposal of *humillimus*; therefore, it is logical to conclude that Dalla Torre proposed *humillimus* to replace *humilis*.

Taxonomy: Townes, 1944. Amer. Ent. Soc., Mem. 11: 399-400.

oblitus (Heinrich), n. comb. Que., Maine, N. Y., Ont., Mich., S. Dak.

Ichneumon oblitus oblitus Heinrich, 1961. Canad. Ent. Sup. 21: 234. ♂, ♀.

Ichneumon oblitus polyglauco Heinrich, 1961. Canad. Ent. Sup. 21: 236. ♂, ♀.

ormsbyensis (Cameron). Nev.

Pseudamblyteles ormsbyensis Cameron, 1908. Amer. Ent. Soc., Trans. 34: 242. ♂.

palaeartops (Heinrich), n. comb. Newfoundland (insular).

Ichneumon palaeartops Heinrich, 1976 (1975). Nat. Canad. 102: 761. ♂.

paramajops (Heinrich), n. comb. Newfoundland (insular).

Ichneumon paramajops Heinrich, 1976 (1975). Nat. Canad. 102: 757. ♀.

parvus (Cresson). Ill., Mo., Kans.

Ichneumon parvus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 159. ♂.

Ichneumon xanthopsis Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 390. ♂. Heinrich (1961) erroneously stated that the holotype of *I. xanthopsis* is from Mont.; it is a specimen from the C. V. Riley collection bearing no locality label; Ashmead probably just assumed (perhaps correctly) that it is from "St. Louis, Mo."

Taxonomy: Heinrich, 1961. Canad. Ent. Sup. 21: 345 (syn. questioned).

patroclus (Viereck). N. Mex.

Craticheumon patroclus Viereck, 1903. In Skinner, Amer. Ent. Soc., Trans. 29: 78. ♂.

pedalis (Cresson). Sask., Colo., Alta.

Ichneumon pedalis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 141. ♂.

Taxonomy: Heinrich, 1961. Canad. Ent. Sup. 21: 313, 347.

perlugubris (Heinrich), n. comb. Que., Sask.

Ichneumon perlugubris Heinrich, 1961. *Canad. Ent. Sup.* 21: 306. ♀.

peroratus (Cameron). Nev.

Pseudamblyteles peroratus Cameron, 1908. *Amer. Ent. Soc., Trans.* 34: 242. ♂.

Taxonomy: Townes, 1961. *Ent. Soc. Wash., Proc.* 63: 112.

perretti (Heinrich), n. comb. Newfoundland (n. Labrador).

Ichneumon perretti Heinrich, 1956. *Canad. Ent.* 88: 482. ♀.

pictifrons (Cresson). Alta., Mont., Colo.

Ichneumon pictifrons Cresson, 1864. *Ent. Soc. Phila., Proc.* 3: 160. ♂.

placidus (Provancher). Que., Maine, N. Y., Ont., Ohio, Alta., Utah.

Ichneumon placidus Provancher, 1875. *Nat. Canad.* 7 (1): 23 (key); 7 (3): 76. ♂.

polargus (Heinrich), n. comb. Newfoundland (n. Labrador), n. Ont., n. Man., Colo.?

Ichneumon polargus Heinrich, 1961. *Canad. Ent. Sup.* 21: 327. ♀.

popofensis (Ashmead). Alta., Alaska.

Ichneumon popofensis Ashmead, 1902. *Wash. Acad. Sci., Proc.* 4: 154. ♂.

propitius (Cresson), n. comb. Que. w. to Sask., s. to Ga. and Tex.; s. Mexico. Host: *Melitaea harrisii* Scud., *Phyciodes tharos* (Drury).

Ichneumon propitius Cresson, 1872. *Amer. Ent. Soc., Trans.* 4: 156. ♂.

Ichneumon tharotis Packard, 1881. *Boston Soc. Nat. Hist., Proc.* 21: 22. ♀.

Taxonomy: Heinrich, 1959. *Ent. News* 70: 207-208.

Biology: Swift, 1946. *Ent. Soc. Amer., Ann.* 39: 407-409.

pseudomaius (Heinrich), n. comb. Mass.

Ichneumon pseudomaius Heinrich, 1961. *Canad. Ent. Sup.* 21: 280. ♀.

pseudovivax (Heinrich), n. comb. Maine.

Ichneumon pseudovivax Heinrich, 1961. *Canad. Ent. Sup.* 21: 286. ♀.

pseudowinkleyi (Heinrich), n. comb. Que., Maine, N. Y., Ont., Man., Alta.

Ichneumon pseudowinkleyi Heinrich, 1961. *Canad. Ent. Sup.* 21: 252. ♀.

pumiliops (Heinrich), n. comb. Que., Maine, Mass., N. Y., Ohio.

Ichneumon pumiliops Heinrich, 1961. *Canad. Ent. Sup.* 21: 276. ♀.

Taxonomy: Heinrich, 1971. *Nat. Canad.* 98: 970 (variation).

purpuripennis (Cresson). Calif.

Ichneumon purpuripennis Cresson, 1877. *Amer. Ent. Soc., Trans.* 6: 175. ♀.

Taxonomy: Cresson, 1879 (1878). *Acad. Nat. Sci. Phila., Proc.* 30: 350.

pusillamoenus (Heinrich), n. comb. Newfoundland (insular), Que., Maine, Ont.

Ichneumon pusillamoenus Heinrich, 1961. *Canad. Ent. Sup.* 21: 272. ♀.

Taxonomy: Heinrich, 1976 (1975). *Nat. Canad.* 102: 762-763 (male described).

putus (Cresson). Newfoundland (insular) s. to D. C., w. to Iowa. Host: *Itame sulphurea* (Pack.).

Ichneumon putus Cresson, 1877. *Amer. Ent. Soc., Trans.* 6: 173. ♀.

pycnocephalus (Heinrich), n. comb. Yukon, B. C.

Ichneumon pycnocephalus Heinrich, 1961. *Canad. Ent. Sup.* 21: 223 (key), 261. ♀ The variant spelling "*pycnocephalos*" which appeared on p. 261 was rejected in favor of *pycnocephalus* by Peck (1964).

Taxonomy: Peck, 1964. *Ent. Soc. Canada, Mem.* 35: 892.

saucius (Cresson), n. comb. Que. w. to Mont., s. to N. C. and Ill. Host: *Paranthrene perlucida* (Bsk.), *P. simulans* (Grt.). In the U. S. Natl. Museum collection there are three males from Missoula, Mont. reared together with the type material of *Paranthrene perlucida*.

I have seen several females which were collected in hibernation in Nov. and Dec. in Va.

Ichneumon saucius Cresson, 1864. *Ent. Soc. Phila., Proc.* 3: 137. ♀.

Ichneumon torvinus Cresson, 1867. *Amer. Ent. Soc., Trans.* 1: 292. ♂.

Taxonomy: Heinrich, 1959. *Ent. News* 70: 209 (syn.). — Heinrich, 1961. *Canad. Ent. Sup.* 21: 335-336; 23: 373.

seditiosus (Cresson). Colo.

Ichneumon seditiosus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 172. ♀.

semicoccineus (Cresson). N. Y., Del., Va., S. C. Heinrich (1961) erroneously stated that the "holotype" of *semicoccineus* is from "Western Territory" (= Western U. S. A.); in the original description Cresson said "Hab. — Delaware and Virginia," and Cresson (1916) selected a lectotype from Virginia. Heinrich (1961) identified a paralectotype from Del. as *semicoccineus*, but the identity of the lectotype seems to remain an open question if the specimen Heinrich thought to be the "holotype" actually was labeled "Western Territory."

Ichneumon semicoccineus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 179. ♂.

Taxonomy: Cresson, 1867. Amer. Ent. Soc., Trans. 1: 291 (syn.). — Cresson, 1916. Amer. Ent. Soc., Mem. 1: 54. — Heinrich, 1959. Ent. News 70: 207 (syn.). — Heinrich, 1961. Canad. Ent. Sup. 21: 311-312.

similaris (Provancher). Newfoundland (n. Labrador) w. to Alaska, s. to Que. and Oreg.

Ichneumon similaris Provancher, 1875. Nat. Canad. 7: 26. ♂.

Automatus nigropilosus Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 148. ♂.

stagnophilus (Heinrich), n. comb. Newfoundland (insular), N. Y., Ont.

Ichneumon stagnophilus Heinrich, 1961. Canad. Ent. Sup. 21: 249. ♀.

Taxonomy: Heinrich, 1969. Nat. Canad. 96: 940 (male described).

subdolosus (Cresson). N. S. w. to Alta., s. to w. N. C. and s. Mich.

Ichneumon subdolosus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 298. ♀.

Amblyteles (Pterocormus) quadrizonatus Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 352, 357. ♂.

substrictus (Viereck). N. Mex.

Cratichneumon restrictus var. *substrictus* Viereck, 1903. In Skinner, Amer. Ent. Soc., Trans. 29: 77. ♂.

substituens (Heinrich), n. comb. Mass., Ohio.

Ichneumon substituens Heinrich, 1961. Canad. Ent. Sup. 21: 265. ♀.

suburbanus (Heinrich), n. comb. N. S. w. to Alta., s. to Conn. and Mich.

Ichneumon suburbanus Heinrich, 1961. Canad. Ent. Sup. 21: 307. ♂, ♀.

subversatus (Heinrich), n. comb. Que., Maine, Ont.

Ichneumon subversatus Heinrich, 1961. Canad. Ent. Sup. 21: 283. ♀.

trigemellus (Heinrich), n. comb. N. W. T., Man.

Ichneumon trigemellus Heinrich, 1956. Canad. Ent. 88: 484. ♀.

tritrus (Heinrich), n. comb. Que., Maine, N. Y., Ont.

Ichneumon tritrus Heinrich, 1961. Canad. Ent. Sup. 21: 256. ♀.

truculentus (Cresson). Que., N. H., Mich.

Ichneumon truculentus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 150. ♀.

tumidifrons (Cresson). Mich., Ill.

Ichneumon tumidifrons Cresson, 1867. Amer. Ent. Soc., Trans. 1: 311. ♀.

Taxonomy: Townes and Townes, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 297 (syn.). — Heinrich, 1961. Canad. Ent. Sup. 21: 267-268.

ultimus (Cresson). Que. s. to Md., w. to Mich. and Ohio.

Ichneumon ultimus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 178. ♀.

unalaskae (Ashmead). Southwestern Alaska.

Stenichneumon unalaskae Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 148. ♂.

uncinatus (Cresson). Ont., Mich., Alta., Alaska.

Ichneumon uncinatus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 159. ♀.

valdopacus (Heinrich), n. comb. Maine, N. Y.

Ichneumon valdopacus Heinrich, 1961. Canad. Ent. Sup. 21: 286. ♀.

vecors (Cresson). "Hudson's Bay Territory." This species has not been included in any of the publications of Heinrich, not even those dealing with arctic and subarctic *Ichneumoninae* (Heinrich [1956, 1958]).

Ichneumon ventralis Cresson, 1867. Amer. Ent. Soc., Trans. 1: 308. ♀. Preocc. by Cresson, 1865.

Ichneumon vecors Cresson, 1877. Amer. Ent. Soc., Trans. 6: 172. N. name for *I. ventralis* Cresson, 1867.

Taxonomy: Heinrich, 1956. Canad. Ent. 88: 477-487. —Heinrich, 1958. Canad. Ent. 90: 739-741.

versabilis (Cresson). Que., Maine, Vt., Mass., Conn., N. Y., Pa., Ohio, Mich. At least one and probably all of the host records quoted from the literature by Heinrich (1961) are based upon misidentifications.

Ichneumon versabilis Cresson, 1877. Amer. Ent. Soc., Trans. 6: 161. ♂.

Amblyteles (Pterocormus) brittoni Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 347, 348, 358. ♀.

Taxonomy: Townes, 1944. Amer. Ent. Soc., Mem. 11: 397-398 (syn.). —Heinrich, 1959. Ent. News 70: 208. —Heinrich, 1961. Canad. Ent. Sup. 21: 281-283.

vicinus (Cresson). Mich., Ill. Heinrich (1961) knew this species only from the holotype and was uncertain whether it should be placed in *Pterocormus* or *Cratichneumon*.

Ichneumon vicinus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 169. ♀. Preocc. by Cuvier, 1833 and Fonscolombe, 1847; not renamed here because of taxonomic uncertainties.

vinulentus (Cresson). Wyo., Colo., Alaska, Wash.

Ichneumon vinulentus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 162. ♂.

vivax (Cresson). N. H., Ont., Ohio.

Ichneumon vivax Cresson, 1877. Amer. Ent. Soc., Trans. 6: 178. ♀.

volesus (Cresson). N. S. W. to Alta., s. to N. Y., Mich., and Colo.

Ichneumon volesus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 304. ♀.

Amblyteles batteatus Hopper, 1938. Amer. Ent. Soc., Trans. 64: 97. ♂. Preocc. in *Pterocormus* by Wesmael, 1845.

walleyi (Heinrich), n. comb. Maine, Ont.

Ichneumon walleyi Heinrich, 1961. Canad. Ent. Sup. 21: 338. ♀. Preocc. secondarily by *Ichneumon walleyi* (Heinrich), 1961.

weemsi (Heinrich), n. comb. Fla. Host: *Leucania latiuscula* H.-S.

Ichneumon weemsi Heinrich, 1972. Nat. Canad. 99: 175. ♂, ♀.

winkleyi (Viereck). N. B., Que., Maine, Conn., Ont., Ohio, Mich., Mo.?

Amblyteles (Pterocormus) winkleyi Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 347, 348, 358. ♀.

Taxonomy: Heinrich, 1959. Ent. News 70: 208.

zelotypus (Cresson). Que., Maine, N. H., N. Y., N. J., W. Va., Ont., Ohio, Mich., Alta.

Ichneumon zelotypus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 299. ♂.

Ichneumon lividulus Provancher, 1877. Nat. Canad. 9: 10. ♀.

Taxonomy: Heinrich, 1959. Ent. News 70: 209 (syn.).

Genus CHASMIAS Ashmead

Chasmodes Wesmael, 1845 (1844). [Brussels] Acad. Roy. de Belg., Nouveaux Mem. 18: 15. Preocc. by Cuvier and Valenciennes, 1836.

Type-species: *Ichneumon motatorius* Gravenhorst. Desig. by Ashmead, 1900. The type-species is Gravenhorst's identification of *I. motatorius* Fabricius.

Chasmias Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 17. N. name for *Chasmodes* Wesmael.

This is a very small Holarctic genus.

Taxonomy: Heinrich, 1961. Canad. Ent. Sup. 21: 211, 212, 336; 23: 373. —Townes, Momoi, and Townes, 1965. Amer. Ent. Inst., Mem. 5: 458 (syn.).

scelestus (Cresson). Maine s. to N. C., w. to Wis., Iowa, and La. Host: *Achatodes zeae* (Harris), *Arzama* sp., *Papaipema cataphracta* (Grt.), *P. impecuniosa* (Grt.), *Parapamea buffaloensis* (Grt.).
Ichneumon scelestus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 148. ♀.

SUBTRIBE HOPLISMENINA

Genus HYBOPHORELLUS Schulz

Hybophorus Tischbein, 1875. Stettin. Ent. Ztg. 36: 281. Preocc. by Waterhouse, 1853.

Type-species: *Ichneumon aulicus* Gravenhorst. Monotypic.

Hybophorellus Schulz, 1911 (1909). Zool. Ann. 4: 38. N. name for *Hybophorus* Tischbein.

This is a very small Holarctic genus.

baffinensis Heinrich. Northeastern N. W. T.

Hybophorellus baffinensis Heinrich, 1962. Canad. Ent. Sup. 26: 565. ♂.

injucundus nearcticus Heinrich. N. W. T. *H. injucundus injucundus* (Wesmael) is European.

Hybophorellus injucundus nearcticus Heinrich, 1957 (1956). Canad. Ent. 88: 650. ♂, ♀.

townesi Heinrich. Southern Sask.

Hybophorellus townesi Heinrich, 1957 (1956). Canad. Ent. 88: 649. ♂, ♀.

Genus HOPLISMENUS Gravenhorst

Hoplismenus Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 409.

Type-species: *Hoplismenus moestus* Gravenhorst. Desig. by Westwood, 1840. The type-species is regarded as a synonym of *H. albifrons* Gravenhorst.

Peritaenius Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 190.

Type-species: *Peritaenius bavaricus* Clement. Included and desig. by Clement, 1927.

The type-species is regarded as a synonym of *H. istrianus* (Clement).

Rhyaspis Tischbein, 1874. Stettin. Ent. Ztg. 35: 139.

Type-species: *Rhyaspis rugosus* Tischbein. Monotypic.

Zanthojoppa Cameron, 1901. Ann. and Mag. Nat. Hist. (7) 7: 378.

Type-species: *Zanthojoppa trilineata* Cameron. Monotypic.

Xanthojoppa (!) Cameron, 1903. Ann. and Mag. Nat. Hist. (7) 11: 182.

Xanthojoppa Morley, 1915. Rev. Ichn. Brit. Mus., v. 4, p. 89. Emend.

Taeniaspis Clement, 1927. Konowia 6: 72.

Type-species: *Taeniaspis flavitarsis* Clement. Monotypic.

This is a moderate sized genus of Neotropic, Holarctic, and Oriental distribution.

Revision: Swift, 1946. Ent. Soc. Amer., Ann. 39: 397-407.

arizonensis Swift. Ariz.

Hoplismenus arizonensis Swift, 1946. Ent. Soc. Amer., Ann. 39: 404. ♀.

morulus flavitarsis (Cresson). Colo., N. Mex., Utah.

Trogus flavitarsis Cresson, 1865. Ent. Soc. Phila., Proc. 4: 264. ♂.

morulus morulus (Say). P. E. I. s. to Va., w. to s.w. N. W. T. and Kans. Host: *Cynthia cardui* (L.)?, *Nymphalis antiopa* (L.), *Polygonia comma* (Harris), *P. interrogationis* (F.).

Ichneumon morulus Say, 1829. Contrib. Maclurian Lyceum to Arts and Sci. 1: 73. ♀.

Ichneumon calcaratus Provancher, 1875. Nat. Canad. 7 (1): 21 (key); 7 (3): 49. ♂. Preocc. by Rossi, 1794.

morulus pacificus Cresson. Mont., Ida., s. B. C., Wash., Oreg., Calif. Host: *Nymphalis californica* (Bdv.).

Hoplismenus pacificus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 186. ♂, ♀.

polyleucos Heinrich. Southern Ont.

Hoplismenus polyleucos Heinrich, 1962. Canad. Ent. Sup. 26: 659. ♂.

praeruptus Swift. Conn., N. Y., Ont.?, Wash.

Hoplismenus praeruptus Swift, 1946. Ent. Soc. Amer., Ann. 39: 407. ♀.

rutilus borealis Heinrich. Man., Sask., w. N. W. T.

Hoplismenus rutilus borealis Heinrich, 1962. Canad. Ent. Sup. 26: 657. ♂, ♀.

rutilus rutilus (Cresson). P. E. I., Que., Maine, Mass., R. I., Conn., Pa., Va., Ont.

Ichneumon rutilus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 169. ♀.

Ichneumon scutellatus Provancher, 1875. Nat. Canad. 7 (1): 24 (key); 7 (3): 78. ♂ (♀ misdet.?). Preocc. by Geoffroy, 1785. Barron (1975) has shown that the specimen selected as lectotype by Gahan and Rohwer (1917) had been erroneously labeled, and Barron selected a valid lectotype.

Taxonomy: Gahan and Rohwer, 1917. Canad. Ent. 49: 432. —Barron, 1975. Nat. Canad. 102: 562.

rutilus transversus Davis. Wyo., Colo., Ida., Oreg.

Hoplismenus transversus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 351. ♂.

Hoplismenus rutilus tenuis Swift, 1946. Ent. Soc. Amer., Ann. 39: 407. ♀.

TRIBE ICHNEUMONINI

With exception of the Old-World genus *Lymantrichneumon*, females of this tribe do not hibernate.

SUBTRIBE ICHNEUMONINA

Genus SYSPASIS Townes

Syspasis Townes, 1965. In Townes, Momoi, and Townes, Amer. Ent. Inst., Mem. 5: 429, 595, 603.

Type-species: *Ichneumon scutellator* Gravenhorst. Orig. desig.

This is a small Holarctic genus.

tauma (Heinrich). Que., Maine, N. Y., n.w. S. C., Ont., Mich., Minn.; Europe. Host: *Tigroides*

bicolor (Grt.), *Paraphia* sp.?, *Choristoneura fumiferana* (Clem.).

Coelichneumon tauma Heinrich, 1951. Bonner Zool. Beitr. 2: 253. ♀.

Taxonomy: Heinrich, 1953. Wash. Acad. Sci., Jour. 45: 148. —Heinrich, 1969. Nat. Canad. 96: 939-940.

Genus ICHNEUMON Linnaeus

Ichneumon Linnaeus, 1758. Syst. Nat., ed. 10, p. 560.

Type-species: *Ichneumon comitator* Linnaeus. Desig. by Curtis, 1839.

Coelichneumon Thomson, 1893. Opusc. Ent. 18: 1901.

Type-species: *Ichneumon lineator* Gravenhorst. Desig. by Ashmead, 1900. The type-species is Gravenhorst's misidentification of *I. lineator* Fabricius; the latter is a species of *Syspasis* while *I. lineator* in the sense of Gravenhorst is regarded as a synonym of *I. comitator* Linnaeus.

Cyanojoppa Cameron, 1902. Ztschr. System. Hym. Dipt. 2: 398.

Type-species: *Cyanojoppa rufo-femorata* Cameron. Desig. by Viereck, 1914 from four species included by Cameron, 1903.

Taphanes Cameron, 1903. Entomologist 36: 239. Heinrich (1966) gave *Taphanes* subgeneric status.

Type-species: *Taphanes rufiventris* Cameron. Monotypic.

Spilojoppa Cameron, 1904. Entomologist 37: 208.

Type-species: *Spilojoppa fulvipes* Cameron. Monotypic. The type-species is a synonym of *I. fulvimanus* Townes, Townes, and Gupta.

Shalisa Cameron, 1904. Ztschr. System. Hym. Dipt. 4: 221.

Type-species: *Shalisa fulvipes* Cameron. Monotypic.

Lodryca Cameron, 1904. Ztschr. System. Hym. Dipt. 4: 223.

Type-species: *Lodryca lineaticeps* Cameron. Monotypic.

Eugyrus Townes, 1946. Bol. Ent. Venezolana 5: 57.

Type-species: *Ichneumon alvarado* Cresson. Monotypic and orig. desig.

This is a large genus of Neotropic, Holarctic, and Oriental distribution.

Taxonomy: Townes and Townes, 1966. Amer. Ent. Inst., Mem. 8: 284-285 (syn.). —Heinrich, 1966. Ent. Tidskr. 87: 188-192.

albicoxa (Heinrich), n. comb. N. Y., N. C., Ont., Mich., Wis.

Coelichneumon albicoxa Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 81. ♂.

Taxonomy: Heinrich, 1971. Nat. Canad. 98: 964-965 (variation and female description).

ater Cresson. Que. w. to s.e. Alaska, s. to N. C., Ill., and Wash.

Ichneumon ater Cresson, 1864. Ent. Soc. Phila., Proc. 3: 138. ♀.

azotus Cresson. Que. s. to Ala., w. to Mich., Kans., and Tex.

Ichneumon Azotus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 150. ♂.

Ichneumon agnitus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 151. ♀.

barnstoni (Morley). Newfoundland (insular), Pa., Md., "Hudson Bay", Ont., Mich., Wis., Alta.

Coelichneumon barnstoni Morley, 1915. Rev. Ichn. Brit. Mus., v. 4, p. 130. ♂ (female misdet.).

Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 105.

brunneri Rohwer. Maine w. to Idaho, s. to Va., Iowa, w. Nebr., and Utah. Host: *Dioryetria auranticea* (Grt.), *D. disculsa* Heinr., *D. zimmermanni* (Grt.).

Ichneumon brunneri Rohwer, 1914. Ent. Soc. Wash., Proc. 15: 180. ♂, ♀.

chalybeus Cresson. Mass., Mich.

Ichneumon chalybeus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 146. ♀.

Ichneumon chalybaeus (!) Dalla Torre, 1902. Cat. Hym., v. 3, p. 873.

Coelichneumon chalybaeus Morley, 1915. Rev. Ichn. Brit. Mus., v. 4, p. 128. Emend.

citimus Cresson. N. H. Known only from the holotype.

Ichneumon citimus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 144. ♂.

columbianus (Heinrich), n. comb. Mich., B. C.

Coelichneumon columbianus Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 38. ♀.

deliratorius cinctitarsis Provancher. P. E. I. w. to S. B. C., s. to N. C., Mich., and S. Dak.

Ichneumon varipes Provancher, 1875. Nat. Canad. 7 (1): 22 (key); 7 (2): 50. ♂. Preocc. by Gravenhorst, 1829.

Ichneumon signatipes Provancher, 1875. Nat. Canad. 7 (1): 22 (key); 7 (2): 52. ♀. Preocc. by Cresson, 1867.

Ichneumon cinctitarsis Provancher, 1877. Nat. Canad. 9: 7. N. name for *I. varipes* Provancher.

Ichneumon stygicus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 151. N. name for *I. signatipes* Provancher.

Taxonomy: Heinrich, 1959. Wash. Acad. Sci., Jour. 43: 149. —Heinrich, 1959. Canad. Ent. 91: 806. —Heinrich, 1961. Canad. Ent. Sup. 21: 331. —Heinrich, 1971. Nat. Canad. 98: 967.

duffieldi (Heinrich), n. comb. N. Y.

Coelichneumon duffieldi Heinrich, 1971. Nat. Canad. 98: 965. ♀.

eximiops (Heinrich), n. comb. Maine, N. Y., Wis., Ill., Iowa, Kans. Host: *Achatodes zeae* (Harris).

Coelichneumon eximiops Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 49. ♂, ♀.

eximius Stephens. Newfoundland (insular) w. to Oreg., s. to Ga., Miss., Tex., and n. Mex.

Host: *Aretilid?*, *Datana ministra* (Drury), *Abagrotis placida* (Grt.), *Acronicta* sp.

Ichneumon eximius Stephens, 1833. Nomencl. Brit. Ins., ed. 2, app. Nomen nudum.

Ichneumon eximius Stephens, 1835. Illus. Brit. Ent., v. 7, p. 186. [female].

Ichneumon caeruleus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 149. ♀.

Taxonomy: Morley, 1902. Ent. Monthly Mag. 38: 120 (attempt to place from description).

—Perkins, 1953. Brit. Mus. (Nat. Hist.) Ent., Bul. 3: 107, 110 (located specimen presumed to be *eximius* holotype). —Townes, 1961. Ent. Soc. Wash., Proc. 63: 107, 169 (confirmation of identity of presumed holotype of *eximius*). —Heinrich, 1969. Nat. Canad. 96: 939 (variation).

flagellator (Heinrich), n. comb. Colo., Calif. The holotype was collected in July at Fort Collins, Colo. in the 1890's by C. F. Baker.

Coelichneumon flagellator Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 71. ♀. Preocc. in *Ichneumon* by *I. flagellator* Fabricius, apparently a forgotten species which would not be a species of *Ichneumoninae*.

- foxleei** (Heinrich), n. comb. Southern B. C. Not to be confused nomenclatorially with *Pterocormus foxleei* (Heinrich).
Coelichneumon foxleei Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 52. ♀.
- histicrus** Cresson. P. E. I. w. to B. C., s. to w. N. C., Kans., and Idaho.
Ichneumon histicrus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 294. ♂.
Ichneumon germanus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 143. ♀.
- jejunus** Cresson. Que. w. to B. C., s. to Fla. and Ariz. Host: *Alypia octomaculata* (F.).
Ischnus jejunus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 186. ♂.
Ichneumon apertus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 293. ♀.
- leucographus** (Heinrich), n. comb. Maine, Ont.
Coelichneumon leucographus Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 39. ♂, ♀.
- magniscopa** (Heinrich), n. comb. Maine, Mass., N. Y., N. C., Fla., Ont.
Coelichneumon magniscopa Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 37. ♂, ♀.
- masoni** (Heinrich), n. comb. Southwestern B. C. Not to be confused nomenclatorially with *Pterocormus masoni* (Heinrich), 1956.
Coelichneumon masoni Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 43. ♀.
- maurus** Cresson. Que. w. to N. W. T. and B. C., s. to Ga., Mo., and Utah.
Ichneumon Maurus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 135. ♀.
- navus** Say. Que. s. to Fla., w. to Mich., Kans., and Tex. Host: *Hyphantria cunea* (Drury), looper defoliating cypress, noctuid.
Ichneumon navus Say, 1836. Boston Jour. Nat. Hist. 1: 229. ♂, ♀.
Ichneumon cinctipes Provancher, 1875. Nat. Canad. 7 (1): 22 (key); 7 (2): 51. ♀. Preocc. by Retzius, 1783.
- neocitimus** (Heinrich), n. comb. Southern N. W. T., s.w. Yukon.
Coelichneumon neocitimus Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 79. ♂, ♀.
- neocretatus** (Heinrich), n. comb. Newfoundland (insular), Que., Maine, N. Y., Ont., Mich., Kans., Sask.
Coelichneumon neocretatus Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 51. ♂, ♀.
- neomexicanus** (Heinrich), n. comb. N. Mex. The holotype was collected on Sept. 12 (not 13), 1916 by [Carl] Heinrich.
Coelichneumon neomexicanus Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 40. ♀.
- nigraticolor** (Viereck). Que., Maine, Mass., R. I., Conn., Pa., Ont., Ohio, Mich.
Amblyteles (*Chasmias* ?) *nigraticolor* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 344, 355. ♀.
- nigrosignatus** Viereck. Ariz. A brief redescription of the holotype is given by Heinrich (1961), but *nigrosignatus* was not included in his key; Heinrich said that it would run to *pervagus* Cresson.
Ichneumon (*Barichneumon*) *nigrosignatus* Viereck, 1905. Kans. Acad. Sci., Trans. 19: 297. ♂.
- Taxonomy: Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 82.
- nudus** (Heinrich), n. comb. Maine, Ga. The holotype (from Summerville, Ga.) is apparently the specimen identified as *Ichneumon* sp. by Fattig (1950).
Coelichneumon nudus Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 40. ♂.
- Taxonomy: Fattig, 1950. Emory Univ. Mus. Bul. 9: 40. —Heinrich, 1969. Nat. Canad. 96: 937-939 (male described).
- obscuratus** (Heinrich), n. comb. Southern B. C.
Coelichneumon obscuratus Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 45. ♀. Preocc. secondarily in *Ichneumon* by Habermehl, 1916 (*Pterocormus subquadratus* var. *obscuratus* [Habermehl]).
- orpheus** Cresson. Que. w. to B. C., s. to Va., Mo., Utah, and Oreg. Host: *Ecpantheria scribonia* (Stoll), notodontid.
Ichneumon Orpheus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 136. ♀.
- pepticus** Cresson. N. J., Mich., Ill., Iowa, Mo., Colo., Wash., Oreg.
Ichneumon pepticus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 148. ♂.

- pervagus** Cresson. Newfoundland (Labrador), N. S., Maine, N. H., Conn., N. Y., Mich., B. C.
Host: *Scoliopteryx libatrix* (L.).
Ichneumon pervagus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 148. ♂.
Amblyteles (*Chasmias* ?) *pequitorum* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 345, 355. ♀.
- Taxonomy: Heinrich, 1959. Ent. News 70: 207 (syn.).
- phaenomenon** (Heinrich), n. comb. Maine, N. Y., Alta., Alaska.
Coelichneumon phaenomenon Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 35. ♂, ♀.
- Taxonomy: Heinrich, 1971. Nat. Canad. 98: 962-963 (variation).
- pomilioaeneus** (Heinrich), n. comb. Maine.
Coelichneumon pomilioaeneus Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 29, 50. ♀. The alternate spelling "*pomiloaeneus*" (p. 29) was rejected in favor of *pomilioaeneus* by Peck, 1964.
- Taxonomy: Peck, 1964. Ent. Soc. Canada, Mem. 35: 891.
- pulcher** Brulle. Maine, R. I., Conn., N. Y., D. C., n. Ga., s. Fla., Ont., Ark., La.; Mexico.
Ichneumon pulcher Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 304. ♀ (male misdet.).
- Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 109.
- pulcherior** (Heinrich), n. comb. Mont., Colo., Ariz., B. C. Host: *Phaeoura mexicanaria* (Grt.).
Coelichneumon pulcherior Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 36. ♀.
- pumilionobilis** (Heinrich), n. comb. Newfoundland (insular), Maine, Ont., Mich.; Europe.
Coelichneumon pumilionobilis Heinrich, 1951. Bonner Zool. Beitr. 2: 251. ♂, ♀.
Coelichneumon pumilosimilis (!) Heinrich, 1953. Wash. Acad. Sci., Jour. 43: 148.
- punctifer** (Heinrich), n. comb. N. Y., Md., Va., Tex.
Coelichneumon punctifer Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 77. ♂, ♀.
- quadriceps** (Heinrich), n. comb. Md., Va., W. Va., Mich.
Coelichneumon quadriceps Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 78. ♂, ♀.
- rubricoxa** (Heinrich), n. comb. Calif.
Coelichneumon rubricoxa Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 72. ♂, ♀.
- rubroaeneus** (Heinrich), n. comb. Northeastern Calif.
Coelichneumon rubroaeneus Heinrich 1961 (1960). Canad. Ent. Sup. 15: 44. ♀.
- sassacoides** (Heinrich), n. comb. Southern B. C. s. to s. Calif.
Coelichneumon sassacoides Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 42. ♀.
- sassacus** (Viereck). Que. s. to w. N. C., w. to Mich.
Amblyteles (*Coelichneumon*) *sassacus* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 349, 360. ♀.
- semilaevis** Cresson. Eastern Que., N. W. T., B. C., Calif.
Ichneumon semilaevis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 142. ♀.
Ichneumon semilevis Dalla Torre, 1902. Cat. Hym., v. 3, p. 989. Emend.
- similior** (Heinrich), n. comb. Maine, Ont.
Coelichneumon similior Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 44. ♀.
- terebratus** (Heinrich), n. comb. Colo.
Coelichneumon terebratus Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 70. ♀.
- terebrifer** (Heinrich), n. comb. Va.
Coelichneumon terebrifer Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 71. ♀.
- viola** Cresson. N. Y. s. to Fla., w. to Wis., Nebr., and Ariz.
Ichneumon viola Cresson, 1864. Ent. Soc. Phila., Proc. 3: 137. ♀.
Ichneumon vittifrons Cresson, 1864. Ent. Soc. Phila., Proc. 3: 143. ♂.
Ichneumon recens Cresson, 1877. Amer. Ent. Soc., Trans. 6: 153. ♂.
- vitalis** Cresson. Maine w. to Oreg., s. to Ga., Ala., Colo., and Utah.
Ichneumon vitalis Cresson, 1877. Amer. Ent. Soc., Trans. 6: 149. ♀.
- walleyi** (Heinrich), n. comb. Ont., B. C. Not to be confused with *Pterocormus walleyi* (Heinrich).
Coelichneumon walleyi Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 77. ♂, ♀.

Genus COELICHNEUMONOPS Heinrich

Coelichneumonops Heinrich, 1958. *Canad. Ent.* 90: 739.

Type-species: *Coelichneumonops vockerothi* Heinrich. Orig. desig.

This is a small genus of Holarctic distribution.

cashmani Heinrich. Northern Yukon.

Coelichneumonops cashmani Heinrich, 1958. *Canad. Ent.* 90: 740. ♀.

occidentalis (Roman). Northern Que., n.e. N. W. T.; Greenland.

Coelichneumon solutus var. *occidentalis* Roman, 1934. *Ann. and Mag. Nat. Hist.* (10) 14: 606. ♂.

Taxonomy: Heinrich, 1961 (1960). *Canad. Ent. Sup.* 15: 85. — Townes, 1961. *Ent. Soc. Wash., Proc.* 63: 105.

solutus (Holmgren). Northern Que., N. H.; n. Europe.

Ichneumon solutus Holmgren, 1864. *Ichn. Suecica*, v. 1, p. 145. ♀.

Coelichneumonops vockerothi Heinrich, 1958. *Canad. Ent.* 90: 739. ♂, ♀.

Taxonomy: Heinrich, 1961 (1960). *Canad. Ent. Sup.* 15: 83-84.

walkleyae Heinrich. Southwestern B. C. Apparently known only from the holotype which was collected at Vancouver, B. C. on May 1, [19]04 (not 1940).

Coelichneumonops walkleyae Heinrich, 1961 (1960). *Canad. Ent. Sup.* 15: 85. ♀.

Genus PROTICHNEUMON Thomson

Protichneumon Thomson, 1893. *Opusc. Ent.* 18: 1899.

Type-species: *Ichneumon fusorius* Linnaeus. Desig. by Ashmead, 1900.

Protichneumon subg. *Metopichneumon* Uchida, 1935. *Insecta Matsumurana* 10: 13.

Type-species: *Protichneumon* (*Metopichneumon*) *superomediae* Uchida. Monotypic and orig. desig.

This is a moderate sized Holarctic and Oriental genus which is rather arbitrarily separated from *Ichneumon*. The usual hosts are Sphingidae.

Taxonomy: Townes, Momoi, and Townes, 1965. *Amer. Ent. Inst., Mem.* 5: 530-531 (syn.).

effigies Heinrich. Newfoundland (insular) w. to s. B. C., s. to Ga., Miss., Kans., and Colo.

Protichneumon effigies Heinrich, 1961 (1960). *Canad. Ent. Sup.* 15: 26. ♂, ♀.

Protichneumon sartoris Heinrich, 1971. *Nat. Canad.* 98: 961. ♀. N. syn.; this synonymy is based upon the comparison of 19 females of *effigies* from throughout much of the range with a female from Ark. identified as *sartoris* by Mr. Heinrich through comparison with the holotype.

grandis (Brulle). Que. w. to s. B. C., s. to Fla., Kans., N. Mex., and Oreg. Host: *Dryocampa rubicunda rubicunda* (F.). Heinrich (1961) recognized three subspecies, all of which were raised to species status by Heinrich (1971). The specimens in the U. S. Natl. Museum collection show that variation of *grandis* throughout eastern North America does not permit the recognition of well defined northern and southern subspecies, yet alone species. Specimens also in the U. S. Natl. Museum collection from Colo., N. Mex., Utah, and Oreg. seem to indicate that *victoriae* Heinrich cannot be recognized as a distinct subspecies either.

Ichneumon grandis Brulle, 1846. *In Lepeletier, Hist. Nat. Ins. Hym.*, v. 4, p. 300. ♀.

Ichneumon ambiguus Cresson, 1864. *Ent. Soc. Phila., Proc.* 3: 161. ♂.

Ichneumon regnatrix Cresson, 1864. *Ent. Soc. Phila., Proc.* 3: 178. ♀.

Protichneumon grandis victoriae Heinrich, 1961 (1960). *Canad. Ent. Sup.* 15: 25. ♂, ♀. N. syn.

Taxonomy: Heinrich, 1961. *Canad. Ent. Sup.* 15: 22-26. — Townes, 1961. *Ent. Soc. Wash., Proc.* 63: 108. — Heinrich, 1962. *Canad. Ent. Sup.* 29: 862. — Heinrich, 1971. *Nat. Canad.* 98: 962.

polytropus Heinrich. Southeastern N. C. Ecology: The host pupa from which the holotype was reared was found in a bark crevice on *Taxodium distichum*. Host: Sphingid. The

species is apparently known only from the holotype, which may not be an entirely normal specimen; it emerged in the laboratory on Jan. 12, 1905 (host pupa collected Nov. 1, 1904) and was apparently killed before it had completely hardened and darkened because the pupal skin had not been completely shed from either antenna.

Protichneumon polytropus Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 22, 27. ♂. The variant spelling "*polytropos*" which appeared on page 22 was rejected in favor of *polytropus* by Heinrich (1962).

Taxonomy: Heinrich, 1962. Canad. Ent. Sup. 29: 862.

radtkeorum Heinrich, N. Y., Pa., Md., Va., Fla., Kans.

Protichneumon radtkeorum Heinrich, 1971. Nat. Canad. 98: 962. Nomen nudum.

Protichneumon radtkeorum Heinrich, 1972. Nat. Canad. 99: 174. ♂, ♀.

Genus AMBLYJOPPA Cameron

Amblyjoppa Cameron, 1902 (Apr.). Entomologist 35: 108.

Type-species: *Amblyjoppa rufo-balteata* Cameron. Desig. by Viereck, 1914.

Hadrojoppa Cameron, 1902 (Nov.). Ztschr. System. Hym. Dipt. 2: 396.

Type-species: *Hadrojoppa annulitarsis* Cameron. Monotypic.

Glyptojoppa Cameron, 1906. Entomologist 39: 229.

Type-species: *Glyptojoppa sulcata* Cameron. Monotypic.

Cnemojoppa Cameron, 1907. Tijdschr. v. Ent. 50: 77. Nomen nudum.

Cnemojoppa Heinrich, 1937. Ann. and Mag. Nat. Hist. (10) 20: 261, 277.

Type-species: *Amblyjoppa rufipes* Cameron. Monotypic and orig. desig.

This is a moderate sized genus of Oriental and Holarctic distribution.

Taxonomy: Townes, Momoi, and Townes, 1965. Amer. Ent. Inst., Mem. 5: 533 (syn.).

magna (Cresson). Nebr., Colo.

Ichneumon magnus Cresson, 1865. Amer. Ent. Soc., Trans. 6: 191. ♂.

Genus CATADELPHOPS Heinrich

Catadelphops Heinrich, 1962. Canad. Ent. Sup. 29: 863.

Type-species: *Trogus buccatus* Cresson. Monotypic and orig. desig.

buccatus (Cresson). Idaho, Nev., B. C., Wash., Oreg., Calif.

Trogus buccatus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 199. ♀.

Genus NEAMBLYJOPPA Heinrich

Neamblyjoppa Heinrich, 1962. Canad. Ent. Sup. 29: 865.

Type-species: *Neamblyjoppa nasuta* Heinrich. Monotypic and orig. desig.

nasuta Heinrich. Ariz.

Neamblyjoppa nasuta Heinrich, 1962. Canad. Ent. Sup. 29: 866. ♀.

Genus CATADELPHUS Wesmael

Catadelphus Wesmael, 1854. [Brussels] Acad. Roy. de Belg., Bul. 22, App., p. 134.

Type-species: *Ichneumon arrogator* Fabricius. Monotypic.

This is a small Holarctic genus.

Taxonomy: Heinrich, 1971. Nat. Canad. 98: 967-968.

atrox (Cresson). S. Dak., Kans., Okla., Tex., Wyo., Colo., N. Mex., Alta., Calif. Host:

Proserpinus juanita (Stkr.). Specimens with uniformly infuscated wings have been recorded from all above listed localities except Alta., while specimens with banded wings ("var. *marginipennis*") are known from "Dakota Territory," Kans., Wyo., N. Mex., and Alta.

Trogus marginipennis Cresson, 1868. Amer. Ent. Soc., Trans. 2: 93. ♂. N. syn.

Trogus atrox Cresson, 1868. Amer. Ent. Soc., Trans. 2: 93. ♀.

ochraceus Heinrich. Okla.

Catadelphus ochraceus Heinrich, 1962. Canad. Ent. Sup. 29: 813. ♂.

ruber Heinrich. Miss.

Catadelphus ruber Heinrich, 1971. Nat. Canad. 98: 968. ♂, ♀.

semiruber Hopper. Mich., w. Ont., Wyo., B. C.

Catadelphus semiruber Hopper, 1939. Amer. Ent. Soc., Trans. 65: 342. ♀.

TRIBE TROGUSINI

Revision: Hopper, 1939. Amer. Ent. Soc., Trans. 65: 307-339, 344-345.

SUBTRIBE CALLAJOPPINA

All species are thought to be parasites of Sphingidae.

Taxonomy: Heinrich, 1967. Synopsis and Reclassif. Ichneumoninae Stenopneusticae Africa So. of Sahara, v. 1, p. 230, 233.

Genus GNAMPTOPELTA Hopper

Gnamptopelta Hopper, 1939. Amer. Ent. Soc., Trans. 65: 333.

Type-species: *Trogus obsidianator* Brulle. Orig. desig.

obsidianator austrina (Cresson). N. C., S. C., Ga., Fla.

Trogus austrinus Cresson, 1868. Amer. Ent. Soc., Trans. 2: 92. ♂, ♀.

obsidianator obsidianator (Brulle). Que. w. to Man., s. to Ga., s. La., Tex., and N. Mex.

Trogus obsidianator Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 299. "♀" = ♂.

Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 113 (lectotype selection).

Genus CALLAJOPPA Cameron

Callajoppa Cameron, 1903. Entomologist 36: 236.

Type-species: *Callajoppa bilineata* Cameron. Monotypic. The type-species is regarded as a subspecies of *C. cirrogaster* (Schrank).

cirrogaster cirrogaster (Schrank). Ont.?, Europe. Townes, Momoi, and Townes (1965) seem to have implied that the two specimens in the Canadian National Collection which are labeled as being collected at Toronto, Ont. by A. Gibson are mislabeled. *C. cirrogaster bilineata* Cameron occurs in eastern Asia.

Ichneumon cirrogaster Schrank, 1781. Enum. Ins. Austriae, p. 348. ♂.

Ichneumon nigro-caudatus Retzius, 1783. Genera and Species Insectorum, p. 68. Sex not indicated.

Ichneumon crocatus Geoffroy, 1785. In Fourcroy, Ent. Parisiensis, v. 2, p. 399. ♂, ♀.

Ichneumon lutorius Fabricius, 1787. Mantissa Insectorum, v. 1, p. 262. ♂, ♀.

Ichneumon cirrhogaster (!) Gmelin, 1790. In Linnaeus, Syst. Nat., ed. 13, v. 1, p. 2683.

Ichneumon rubricornutus Christ, 1791. Naturgesch. Class. Nomencl. Ins., p. 347. Sex not indicated.

Ichneumon dessinator Olivier, 1792. Encycl. Meth., Dict. Ins., v. 7, p. 174. Sex not indicated.

Ichneumon scutellaris Olivier, 1792. Encycl. Meth., Dict. Ins., v. 7, p. 198. Sex not indicated.

Ichneumon imperatorius Panzer, 1804. D. J. C. Schaefferi Iconum Ins. ... Syst., p. 201. Sex not indicated.

Ichneumon obscuratorius Gravenhorst, 1807. Vergl. Uebers. Zool. Systeme, p. 255. Sex not indicated. Possibly preocc. by Panzer, 1806-1809.

Trogus Atropos Curtis, 1828. Brit. Ent., v. 5, no. 234. Sex not indicated.

Ichneumon nigricaudatus Stephens, 1829. Nomencl. Brit. Ins., pt. 1, p. 349. Nomen nudum.

Trogus atrocandatus Stephens, 1835. Illus. Brit. Ent., v. 7, p. 271. Sex not indicated.

Trogus excellens Tischbein, 1882. Stettin. Ent. Ztg. 43: 485. ♂.

Callajoppa cirrogastra Perkins, 1953. Brit. Mus. (Nat. Hist.) Ent., Bul. 3: 112. Emend.

Taxonomy: Hopper, 1939. Amer. Ent. Soc., Trans. 65: 331-332. —Heinrich, 1962. Canad. Ent. Sup. 29: 814-815. —Townes, Momoi, and Townes, 1965. Amer. Ent. Inst., Mem. 5: 539-540.

Genus TRICYPHUS Kriechbaumer

Tricyphus Kriechbaumer, 1898. Ent. Nachr. 24: 4, 30.

Type-species: *Tricyphus cuspidiger* Kriechbaumer. Desig. by Viereck, 1914.

This small genus is Nearctic and Neotropic.

apicalis (Cresson). Vt. s. to Fla., w. to Mich. and Ill. Host: *Sphinx kalmiae* J. E. S.

Trogus apicalis Cresson, 1877. Amer. Ent. Soc., Trans. 6: 197. ♀.

ater Hopper. Fla., Ill.

Tricyphus ater Hopper, 1939. Amer. Ent. Soc., Trans. 65: 339. ♂.

elegans (Cresson). P. E. I. s. to Fla., w. to Kans. Host: *Darapsa myron* (Cramer). Specimens with banded wings have been treated as subspecifically distinct under the name *elegans elegans*, but specimens with uniformly infuscated wings have been collected in the following states or provinces where banded winged specimens are also found (in some instances at the same localities): Mass., Conn., N. Y., Pa., D. C., Fla., Ont., and Ill.

Trogus elegans Cresson, 1868. Amer. Ent. Soc., Trans. 2: 94. ♀.

Tricyphus vulpinus Szepilgeti, 1900. Termes. Fuzetek 23: 288. ♀. N. syn.

Tricyphus elegans floridanus Heinrich, 1962. Canad. Ent. Sup. 29: 842. ♂. N. syn.

Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 113.

Genus TMETOGASTER Hopper

Conocalama subg. *Tmetogaster* Hopper, 1939. Amer. Ent. Soc., Trans. 65: 321.

Type-species: *Trogus nubilipennis* Haldeman. Monotypic and orig. desig.

Taxonomy: Heinrich, 1962. Canad. Ent. Sup. 29: 836, 861.

nubilipennis (Haldeman). Maine s. to Ga., w. to Ill. Host: *Darapsa myron* (Cramer), *Sphecodina abbottii* (Swainson).

Trogus nubilipennis Haldeman, 1846. Acad. Nat. Sci. Phila., Proc. 3: 127. Sex not indicated.

Genus CONOCALAMA Hopper

Conocalama Hopper, 1939. Amer. Ent. Soc., Trans. 65: 319.

Type-species: *Trogus brullei* Cresson. Orig. desig.

This genus is Nearctic and Neotropic.

bolteri (Cresson). N. H., N. Y., Ont., Alta., w. N. W. T., B. C.

Trogus Bolteri Cresson, 1868. Amer. Ent. Soc., Trans. 2: 94. ♂.

brullei (Cresson). N. H. s. to Ga., w. to Mich., Colo., and Tex. Host: *Dolba hyloeus* (Drury), *Manduca sexta* (L.), *Paonias astylus* (Drury).

Trogus Brullei Cresson, 1877. Amer. Ent. Soc., Trans. 6: 196. ♂, ♀.

canadensis (Provancher). Que. w. to Alta., s. to Ga. and Ill. Host: *Paonias myops* (J. E. S.). Possibly a color phase of *C. brullei* according to Heinrich (1962).

Trogus Canadensis Provancher, 1877. Nat. Canad. 9: 2. ♀.

Trogus nigrocinctus Hasey, 1925. Ent. News 36: 306. ♂.

Taxonomy: Heinrich, 1959. Ent. News 70: 206, 207. — Heinrich, 1962. Canad. Ent. Sup. 29: 822-823.

catalinarum Heinrich. Ariz.

Conocalama catalinarum Heinrich, 1957. Canad. Ent. 89: 334. ♂.

copei (Cresson). Que., Maine, Pa., W. Va., Ont.

Trogus Copei Cresson, 1868. Amer. Ent. Soc., Trans. 2: 94. ♂.

Conocalama copei heteropteryx Heinrich, 1962. Canad. Ent. Sup. 29: 822. ♂, ♀. N. syn.

fuscalata Hopper. N. Y., Pa., Ont.

Conocalama (Conocalama) fuscalata Hopper, 1939. Amer. Ent. Soc., Trans. 65: 330. ♂, ♀.

galbinata Hopper. N. Mex.

Conocalama (Conocalama) galbinata Hopper, 1939. Amer. Ent. Soc., Trans. 65: 328. ♂.

manitobae Heinrich. Southern Man.

Conocalama manitobae Heinrich, 1962. Canad. Ent. Sup. 29: 834. ♂.

- occidentalis** (Cresson). "Dakota Territory," Mont., Colo., s.e. Alaska, B. C., Oreg., Calif. Host: *Smerinthus cerisyi* Kby.
Trogus occidentalis Cresson, 1868. Amer. Ent. Soc., Trans. 2: 92. ♂.
Conocalama (Conocalama) occidentalis var. *luteata* Hopper, 1939. Amer. Ent. Soc., Trans. 65: 326. ♂, ♀.
Conocalama orientalis (!) Heinrich, 1962. Canad. Ent. Sup. 29: 818 (key). Lapsus for *occidentalis*.
- quebecensis** (Provancher). N. S., Que., Maine, Ont., Minn., Man., Alta., B. C., Oreg. Host: *Eacles imperialis imperialis* (Drury).
Trogus Quebecensis Provancher, 1874. Nat. Canad. 6: 335. ♀.
- rileyi** (Cresson). Ill., S. Dak., Nebr., Kans., Colo., N. Mex. Heinrich (1962) and Walkley (1967) recognized two subspecies, and incorrectly gave species status to the junior synonym *T. mellosus* Cresson.
Trogus Rileyi Cresson, 1868. Amer. Ent. Soc., Trans. 2: 95. ♀. An unlabeled specimen in the U. S. Natl. Museum collection appears to be the holotype.
Trogus mellosus Cresson, 1876 (1875). In Wheeler, Rept. Geog. and Geol. Explor. and Surveys W. of Hundredth Merid., v. 5 (zool.), p. 708. "♂" = ♀. N. syn.
- Taxonomy: Heinrich, 1962. Canad. Ent. Sup. 29: 829-830. —Walkley, 1967. In Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2, sup. 2, p. 169-170.
- violipennis** Hopper. Calif.
Conocalama (Conocalama) violipennis Hopper, 1939. Amer. Ent. Soc., Trans. 65: 327. ♂, ♀.

SUBTRIBE TROGUSINA

Genus MACROJOPPA Kriechbaumer

- Macrojoppa* Kriechbaumer, 1898. Ent. Nachr. 24: 21.
 Type-species: *Trogus blandita* Cresson. Desig. by Ashmead, 1900.
Aglojoppidea Viereck, 1913. U. S. Natl. Mus., Proc. 46: 368.
 Type-species: *Trogus fascipennis* Cresson. Orig. desig.

This genus is mostly Neotropic, with one Nearctic species.

Taxonomy: Heinrich, 1962. Canad. Ent. Sup. 29: 845-846. —Townes and Townes, 1966. Amer. Ent. Inst., Mem. 8: 275 (syn.).

fascipennis (Cresson). Tex.

- Trogus fascipennis* Cresson, 1877. Amer. Ent. Soc., Trans. 6: 196. ♀.
Trogus fascipennis Dalla Torre, 1902. Cat. Hym., v. 3, p. 1033. Emend.

Genus TROGUS Panzer

- Trogus* Panzer, 1806. Krit. Rev. Insektenf. Deutschlands, v. 2, p. 80.
 Type-species: *Ichneumon coarulator* Fabricius. Monotypic.
Dinotomus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 188.
 Type-species: *Ichneumon lapidator* Fabricius. Desig. by Ashmead, 1900 from three species included by Berthoumieu, 1896.

This genus is Neotropic, and Oriental.

edwardsii Cresson. Mont., Idaho, s. B. C., Wash. Host: *Papilio eurymedon* Lucas. A specimen in the U. S. Natl. Museum collection appearing to be intermediate between *edwardsii* and *pennator* (Fabricius) indicates that *edwardsii* is probably a subspecies or possibly only a color phase of the partially sympatric *pennator*.

- Trogus Edwardsii* Cresson, 1877. Amer. Ent. Soc., Trans. 6: 195. ♂.
Trogus Fletcherii Harrington, 1894. Canad. Ent. 26: 245. "♀" = ♂.

flavipennis Cresson. Colo., N. Mex., Utah., Ariz.

- Trogus flavipennis* Cresson, 1864. Ent. Soc. Phila., Proc. 3: 287. ♂.

lapidator brevicaudae Heinrich. Southern Newfoundland (insular). Host: *Papilio brevicauda* Sdrs. Doubtfully distinct from *lapidator panzeri* Carlson.

- Trogus lapidator brevicaudae* Heinrich, 1976 (1975). Nat. Canad. 102: 755. ♂, ♀.

- lapidator panzeri** Carlson. Yukon; n. Eurasia. Host: *Papilio machaon* L. *T. lapidator lapidator* (Fabricius) occurs in southern Europe and North Africa.
- Ichneumon coeruleator* Fabricius, 1804. Systema Piezatorum, p. 68. ♂. Preocc. by Weber, 1795. When I proposed the replacement name *T. lapidator panzeri*, I stated that *I. coeruleator* Fabricius, 1804 was preocc. by Fabricius, 1796, but I have since discovered that Weber (1795) preceded Fabricius (1796) in validating *coeruleator* as an unnecessary replacement name for *I. lapidator* Fabricius, 1787 (instead of 1793).
- Trogus panzeri* Carlson, 1975. Ent. Soc. Wash., Proc. 77: 305. N. name for *I. coeruleator* Fabricius.

Taxonomy: Weber, 1795. Nomencl. Ent. Secundum Ent. System. Fabricii, p. 73. — Fabricius, 1796. Ent. System., Index Alphabeticus, p. 83, 84.

- pennator** (Fabricius). Que. w. to Wash., s. to Fla., Kans., Nev., and Calif. Host: *Papilio breviceuda* Sdrs., *P. eurymedon* Lucas, *P. glaucus* L., *Papilio polyxenes asterius* Stoll, *P. rutulus* Lucas, *P. troilus* L., *P. zelicaon* Lucas, *Graphium marcellus* (Cramer).
- Ichneumon pennator* Fabricius, 1793. Ent. System., v. 2, p. 155. [female].
- Trogus vulpinus* Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 389. [female].
- Trogus exesorius* Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 298. ♂, ♀.
- Ichneumon asteriae* Jaeger, 1859. Life of No. Amer. Insects, p. 240. Sex not indicated.
- Macrojoppa californica* Cameron, 1911. Soc. Ent. 26: 35. Sex not indicated.

Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 109, 110, 113.

- pennator** var. **fulvipes** Cresson, n. status. Newfoundland (insular), Que., Maine, N. H., Vt., Mass., N. Y., Ont., Mich., Man., Sask., Colo., B. C., Oreg. Host: *Papilio breviceuda* Sdrs., *P. glaucus* L., *P. eurymedon* Lucas. Because *fulvipes* appears to be a color phase (sympatric) rather than a subspecies of *pennator*, I have chosen to treat it as a "variety." Heinrich (1962) does not seem to have been objective in arguing that *fulvipes* is a species distinct from *pennator*. In collecting "dozens of specimens" of *pennator* and *fulvipes* in Maine he claimed to have seen only one "looking like an intergrade." He said "I would guess that the specimen is an erythristic *fulvipes* rather than a melanistic *pennator*; both types of variation are to be expected anyway, and would create the impression of intergrades without actually being such." In the U. S. Natl. Museum collection there are only five *fulvipes* specimens, while there are six (from Maine, Vt., Mass., Pa., and Wash.) which impress me as being intergrades between *pennator* and var. *fulvipes*.

Trogus fulvipes Cresson, 1868. Amer. Ent. Soc., Trans. 2: 93. ♂.

Trogus apicatus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 352. ♂.

Taxonomy: Heinrich, 1962. Canad. Ent. Sup. 29: 849-850.

TRIBE JOPPOCRYPTINI

Genus **PLAGIOTRYPES** Ashmead

Plagiotrypes Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 20.

Type-species: *Ichneumon concinnus* Say. Monotypic and orig. design.

Neopyga Heinrich, 1930. Zool. Mus. Berlin, Mitt. 15: 545.

Type-species: *Neopyga ornata* Heinrich. Design. by Townes, 1944.

This small genus is Neotropical and Nearctic.

- concinnus** (Say). Southern N. H. s. to Fla., w. to Ill. and Tex.

Ichneumon concinnus Say, 1829. Contrib. Maclurian Lyceum to Arts and Sci. 1: 68. ♀ (not second female described).

Taxonomy: Cresson, 1877. Amer. Ent. Soc., Trans. 6: 194. — Cushman and Gahan, 1921. Ent. Soc. Wash., Proc. 23: 164.

Genus **NARTHECURA** Townes

Narthecura Townes, 1946. Bol. Ent. Venezolana 5: 50.

Type-species: *Hoplismenus munitus* Cresson. Orig. design.

This is a moderate sized Neotropic and Nearctic genus.

invadens Heinrich. N. Mex., Ariz.

Narthecura invadens Heinrich, 1962. *Canad. Ent. Sup.* 27: 682. ♂, ♀.

Genus LOBAEGIS Townes

Lobaegis Townes, 1946. *Bol. Ent. Venezolana* 5: 54.

Type-species: *Ichneumon maritus* Cresson. Orig. desig.

This is apparently a moderate sized Neotropic and Nearctic genus.

septentrionalis Heinrich. N. Y., Md., W. Va., S. C., Tenn., Ala.

Lobaegis septentrionalis Heinrich, 1962. *Canad. Ent. Sup.* 27: 684. ♂, ♀.

Genus PSEUDOPLATYLABUS Smits van Burgst

Pseudoplatylabus Smits van Burgst, 1920. *Ent. Ber.* 5: 282.

Type-species: *Pseudoplatylabus caudatus* Smits van Burgst. Monotypic.

This is a small Holarctic and Oriental genus.

townesi Heinrich. R. I., N. Y., Md.

Pseudoplatylabus townesi Heinrich, 1962. *Canad. Ent. Sup.* 27: 686. ♂, ♀.

violentus (Gravenhorst). Mich.; Europe.

Ichneumon violentus Gravenhorst, 1829. *Ichn. Europea*, v. 1, p. 613. [male].

Hoplismenus infastus Wesmael, 1845 (1844). [Brussels] *Acad. Roy. de Belg., Nouveaux*

Mem. 18: 110. ♂, ♀.

Pseudoplatylabus caudatus Smits van Burgst, 1920. *Ent. Ber.* 5: 282. ♀.

TRIBE LISTRODROMINI

SUBTRIBE LISTRODROMINA

Species of *Trogomorpha* apparently parasitize Hesperidiidae, but the normal hosts for other genera in this subtribe are Lycaenidae.

Genus TROGOMORPHA Ashmead

Trogomorpha Ashmead, 1900. *U. S. Natl. Mus., Proc.* 23: 15.

Type-species: *Ichneumon trogiformis* Cresson. Monotypic and orig. desig.

This is a small Neotropic and Nearctic genus.

arrogans (Cresson). Southern Texas; Mexico, Honduras, El Salvador, Costa Rica, Panama, Colombia, Peru. Probably only a subspecies of *T. trogiformis* (Cresson).

Ichneumon arrogans Cresson, 1873. *Acad. Nat. Sci. Phila.*, *Proc.* 25: 115. ♂, ♀.

Ichneumon panamensis Cameron, 1885. *Biol. Cent.-Amer., Hym.*, v. 1, p. 158. ♂.

trogiformis (Cresson). Central N. Y., s. Ohio, and Mo. s. to Fla. and Tex.; Puerto Rico. Host:

Ephyriades brunnea floridensis (B. and C.).

Ichneumon ferrugator Fabricius, 1793. *Ent. System.*, v. 2, p. 154. Sex not indicated. Preocc. by Swederus, 1787. Townes (1961) apparently was unable to locate any type specimen and accepted Brulle (1846) as the first revisor of this name.

Ichneumon trogiformis Cresson, 1864. *Ent. Soc. Phila.*, *Proc.* 3: 175. ♂.

Taxonomy: Brulle, 1846. *In* Lepeletier, *Hist. Nat. Ins. Hym.*, v. 4, p. 295. —Townes, 1961. *Ent. Soc. Wash.*, *Proc.* 63: 107.

Genus NEOTYPUS Foerster

Neotypus Foerster, 1868. *Naturh. Ver. Rheinlande, Verh.* 25: 194.

Type-species: *Ichneumon lapidator* Fabricius, 1793 (not 1787). Desig. by Ashmead, 1900 from two species included by Holmgren, 1871. The type-species is regarded as a synonym of *N. coreensis* Uchida.

Cillimus Tosquinet, 1896. *Soc. Ent. de Belg.*, *Mem.* 5: 122.

Type-species: *Cillimus adornatus* Tosquinet. Desig. by Ashmead, 1900.

This is a small Palearctic, Oriental, and Ethiopian genus.

nobiligator nobilitator (Gravenhorst). Conn., N. J., Md., D. C., Va., Ohio, Ill., Mo., Wyo., Alta., Oreg.; Europe. Adventive. Host: *Everes comyntas* (Godt.). *N. nobilitator orientalis* Uchida occurs in eastern Asia.

Ichneumon nobilitator Gravenhorst, 1807. Vergl. Uebers. Zool. Systeme, p. 235. ♀.

Neotypus americanus Cushman, 1926. U. S. Natl. Mus., Proc. 67 (23): 1. ♂.

Taxonomy: Heinrich, 1933. Zool. Mus. Berlin, Mitt. 19: 155, 157.

Genus ANISOBAS Wesmael

Anisobas Wesmael, 1845 (1844). [Brussels] Acad. Roy de Belg., Nouveaux Mem. 18: 145.

Type-species: *Ichneumon cingulatorius* Gravenhorst. Desig. by Ashmead, 1900.
Lycaeniphilos Heinrich, 1933. Zool. Mus. Berlin, Mitt. 19: 158.

Type-species: *Anisobas cephalotes* Kriechbaumer. Monotypic and orig. desig.

This is a small Holarctic and Oriental genus.

angustior Heinrich. Newfoundland (insular), w. Tenn.

Anisobas angustior Heinrich, 1976 (1975). Nat. Canad. 102: 780. ♀.

bicolor Cushman. Idaho, Utah, Nev., Ariz., B. C., Wash., Oreg., Calif. Host: *Strymon adenostomatis* (Hy. Edw.).

Anisobas bicolor bicolor Cushman, 1926. U. S. Natl. Mus., Proc. 67 (23): 2. ♂, ♀.

bicolor boreoaustralis Heinrich. Newfoundland (insular).

Anisobas bicolor boreoaustralis Heinrich, 1976 (1975). Nat. Canad. 102: 780. ♀.

coloradensis (Cresson). S. Dak., Colo., Idaho, Ariz.

Amblyteles coloradensis Cresson, 1877. Amer. Ent. Soc., Trans. 6: 193. ♀.

luzernensis (Bradley). Que., Maine, N. Y., Pa., Ont., Mich. Host: *Limacodid*.

Platylabus luzernensis Bradley, 1903. Canad. Ent. 35: 282. ♀.

Anisobas nearcticus Cushman, 1926. U. S. Natl. Mus., Proc. 67 (23): 2. ♀.

separatus (Davis). Ill., Tex., Ariz.

Eurylabus separatus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 353. "♂" = ♀.

texensis (Ashmead). Conn., Man., Nebr., Tex. Host: *Incisalia nippon* (Hbn.), *Strymon falacer* (Godt.).

Cryptus texensis Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 410. "♂" = ♀.

Taxonomy: Townes and Townes, 1951. In Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 282 (syn.). — Heinrich, 1962. Canad. Ent. Sup. 27: 694-695.

Genus DIACANTHARIUS Schmiedeknecht

Diacantharius Schmiedeknecht, 1902. Opusc. Ichn., v. 1, p. 20.

Type-species: *Diacantharius elegans* Schmiedeknecht. Monotypic.

Lausoba Cameron, 1910 (1909). Amer. Ent. Soc., Trans. 35: 438.

Type-species: *Lausoba forticeps* Cameron. Monotypic.

Oedicephalopsis Heinrich, 1930. Zool. Mus. Berlin, Mitt. 15: 548.

Type-species: *Oedicephalopsis peruensis* Heinrich. Monotypic.

An undescribed species occurs in southern Texas. It has been reared from *Strymon melinus melinus* (Hbn.).

Taxonomy: Townes and Townes, 1966. Amer. Ent. Inst., Mem. 8: 272 (syn.).

Genus DILOPHARIUS Townes

Dilopharius Townes, 1966. In Townes and Townes, Amer. Ent. Inst., Mem. 8: 332.

Type-species: *Hoplismenus otomitus* Cresson. Monotypic and orig. desig.

An undescribed species occurs in southern Texas.

TRIBE PLATYLABINI

The members of this tribe are principally parasites of Geometridae.

Genus **APAELETICUS** Wesmael

Apaeticus Wesmael, 1845 (1844). [Brussels] Acad. Roy. de Belg., Nouveaux Mem. 18: 166.

Type-species: *Apaeticus bellicosus* Wesmael. Desig. by Ashmead, 1900.

americanus Cushman. Maine, Md., D. C., Alta.?, Ariz.

Apaeticus americanus Cushman, 1926. U. S. Natl. Mus., Proc. 67 (23): 4. ♀.

brunnescens Heinrich. Maine, Mich.

Apaeticus brunescens Heinrich, 1962. Canad. Ent. Sup. 27: 793. ♂, ♀.

Genus **CARLSONIA** Heinrich

Carlsonia Heinrich, 1971. Nat. Canad. 100: 461.

Type-species: *Linytus perturbator* Heinrich. Monotypic and orig. desig.

perturbator (Heinrich). Maine, Mich. Known from two males from Maine and one female from Mich.; the latter was collected with a Malaise trap situated at the edge of a rather large area of muskeg which then was rather dry.

Linytus perturbator Heinrich, 1971. Nat. Canad. 98: 1022. ♂.

Genus **LINYCUS** Cameron

Linytus Cameron, 1903. Entomologist 36: 234.

Type-species: *Linytus rufipes* Cameron. Monotypic.

Erythroischnus Cameron, 1904. Amer. Ent. Soc., Trans. 30: 252.

Type-species: *Erythroischnus annulicornis* Cameron. Monotypic.

This small genus is Neotropic, Holarctic, and Oriental.

barbarae Heinrich. Newfoundland (insular). Known from a single specimen. Heinrich made no direct comparison with the male specimens of *Carlsonia perturbator* (Heinrich) in his collection (holotype and paratype); his descriptions of the males of the two species seem to differ with respect to the tyloids. If the species actually differ, it remains to be determined whether the female presumed by Heinrich to be that of *Carlsonia perturbator* may not actually be that of *Linytus barbarae*.

Linytus barbarae Heinrich, 1976 (1975). Nat. Canad. 102: 779. ♂.

exhortator montanus Heinrich. Colo. *L. exhortator exhortator* (Fabricius) is Eurasian.

Linytus exhortator montanus Heinrich, 1962. Canad. Ent. Sup. 27: 781. ♂.

exhortator thoracicus (Cresson). Maine s. to Va., w. to Wis. and Mo.

Hoplismenus thoracicus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 288. "♂" = ♀.

nigriceps Heinrich. Ariz., Alaska, B. C., Wash., Oreg. Males with the thorax extensively or completely black are known from Alpine, Ariz. (types of syn. *arizonensis*), Palmer, Alaska (types of syn. *niger*), and Juneau, Alaska.

Linytus nigriceps nigriceps Heinrich, 1962. Canad. Ent. Sup. 27: 782. ♂, ♀.

Linytus nigriceps arizonensis Heinrich, 1962. Canad. Ent. Sup. 27: 782. ♂. N. syn.

Linytus nigriceps alaskae Heinrich, 1962. Canad. Ent. Sup. 27: 782. ♂, ♀. N. syn.

Linytus nigriceps niger Heinrich, 1962. Canad. Ent. Sup. 27: 783. ♂. N. syn.

temporalis Heinrich. Maine.

Linytus temporalis Heinrich, 1971. Nat. Canad. 98: 1024. ♂.

Genus **NEOLINYCUS** Heinrich

Neolinytus Heinrich, 1971. Nat. Canad. 98: 1025.

Type-species: *Neolinytus michaelis* Heinrich. Monotypic and orig. desig.

michaelis Heinrich. Central Ga., n. Miss., La.

Neolinytus michaelis Heinrich, 1971. Nat. Canad. 98: 1025. ♀.

Neolinytus michaelis georgianus Heinrich, 1972. Nat. Canad. 99: 210. ♀. N. syn.

Genus **CYCLOLABUS** Heinrich

Cyclolabus Heinrich, 1936 (1935). Deut. Ent. Ztschr., p. 198.

Type-species: *Platylabus nigricollis* Wesmael. Orig. desig.

This is a moderate sized genus of Holarctic and Oriental distribution.

- albicinctus** Heinrich. Newfoundland (insular), N. S. Host: *Acasis viridata* (Pack.).
Cyclolabus albicinctus Heinrich, 1962. Canad. Ent. Sup. 27: 771. ♂, ♀.
- arizonae** Heinrich. Ariz.
Cyclolabus arizonae Heinrich, 1962. Canad. Ent. Sup. 27: 765. ♂, ♀.
- carolinensis** Heinrich. Northwestern S. C., Mich.
Cyclolabus carolinensis Heinrich, 1962. Canad. Ent. Sup. 27: 764. ♀.
- dubiosus** Perkins. Newfoundland (insular), N. S., Mich., Man., Colo., Alta., B. C., Wash., Calif.; Europe. Host: *Eupithecia annulata* (Hulst), *E. filmata* Pear., *E. luteata* Pack., *E. palpata* Pack. This species has been confused with *C. pactor* (Wesmael), which is not known to occur in the Nearctic region.
Cyclolabus dubiosus Perkins, 1953. Brit. Mus. (Nat. Hist.) Ent., Bul. 3: 156. ♂, ♀.
- gibsonatae** Heinrich. Ont., B. C. Host: *Eupithecia gibsonata* Taylor.
Cyclolabus gibsonatae Heinrich, 1962. Canad. Ent. Sup. 27: 764. ♀.
- gracilicornis gracilicornis** Provancher. Newfoundland (Labrador and insular), Que., Maine, N. H., N. Y., N. C., Ont., Mich.
Phygadeuon gracilicornis Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 56. ♀.
- gracilicornis subdentatus** (Ashmead). Colo., Idaho, Alaska, B. C., Wash., Oreg., Calif.
Probolus subdentatus Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 160. ♂.
- Taxonomy: Heinrich, 1959. Ent. News 70: 216.
- impressus impressus** (Provancher). Newfoundland (insular), Que., Maine, N. H., Mass., N. Y., Ont., Mich.
Phygadeuon impressus Provancher, 1874. Nat. Canad. 6: 281. ♀.
Ichneumon erythropygus Provancher, 1875. Nat. Canad. 7 (1): 24 (key); 7 (3): 79. "♀" = ♂.
- impressus infuscatus** Heinrich. Southern Alta., s. B. C., Wash.
Cyclolabus impressus infuscatus Heinrich, 1962. Canad. Ent. Sup. 27: 760. ♂, ♀.
- lincyops** Heinrich. Newfoundland (insular).
Cyclolabus lincyops Heinrich, 1976 (1975). Nat. Canad. 102: 778. ♂.
- lobatus** Heinrich. Que., Maine, N. Y., Mich., Alta.
Cyclolabus lobatus lobatus Heinrich, 1962. Canad. Ent. Sup. 27: 761. ♂, ♀.
Cyclolabus lobatus occidentalis Heinrich, 1962. Canad. Ent. Sup. 27: 761. ♀. N. syn.
- signatus** (Provancher). Que., Maine, N. H.
Phygadeuon signatus Provancher, 1874. Nat. Canad. 6: 282. ♀.

Genus PLATYLABUS Wesmael

- Platylabus* Wesmael, 1845 (1844). [Brussels] Acad. Roy. de Belg., Nouveaux Mem. 18: 166.
 Type-species: *Platylabus rufus* Wesmael. Desig. by Ashmead, 1900.
- Lamprojoppa* Cameron, 1901. Ann. and Mag. Nat. Hist. (7) 7: 482.
 Type-species: *Lamprojoppa caerulea* Cameron. Monotypic.
- Pagarenes* Cameron, 1903. Ztschr. System. Hym. Dipt. 3: 183.
 Type-species: *Pagarenes erythropus* Cameron. Monotypic.
- Chlorojoppa* Cameron, 1907. Ztschr. System. Hym. Dipt. 7: 466.
 Type-species: *Chlorojoppa viridis* Cameron. Monotypic.

This large genus is very widely distributed, although only one species is known from the Ethiopian region and none of the described Neotropical species have been recorded from South America.

- abbreviatus** Heinrich. Southern B. C.
Platylabus abbreviatus Heinrich, 1962. Canad. Ent. Sup. 27: 753. ♀.
- alaskae** Heinrich. Southwestern Alaska.
Platylabus alaskae Heinrich, 1962. Canad. Ent. Sup. 27: 721. ♀.
- arizonae** Heinrich. Ariz., Calif.
Platylabus arizonae Heinrich, 1962. Canad. Ent. Sup. 27: 715. ♂, ♀.

berndi Heinrich. Que., Maine, Ont., Mich. Host: Geometrid.

Platylabus berndi Heinrich, 1962. Canad. Ent. Sup. 27: 731. ♂, ♀.

Platylabus albidorsus Heinrich, 1962. Canad. Ent. Sup. 27: 740. ♀.

Taxonomy: Heinrich, 1971. Nat. Canad. 98: 1018-1019 (syn. and variation).

clarus (Cresson). Que. s. to S. C., w. to Colo. and N. Mex. Host: *Abbottana clemataria* (J. E. S.).

Ichneumon clarus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 297. ♀.

Platylabus magnificus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 36. ♀.

columbiae Heinrich. B. C., Calif.

Platylabus columbiae Heinrich, 1962. Canad. Ent. Sup. 27: 716. ♀.

dilleri Heinrich. Maine.

Platylabus dilleri Heinrich, 1971. Nat. Canad. 98: 1021. ♂.

divisatae Heinrich. Newfoundland (insular), Que., B. C., Oreg. Host: *Caripeta divisata* Wlk.

Platylabus divisatae Heinrich, 1962. Canad. Ent. Sup. 27: 709. ♂, ♀.

duplificans Heinrich. Colo. Ecology: In Mountains at elevations between 9500 and 11000 ft.

Platylabus duplificans Heinrich, 1962. Canad. Ent. Sup. 27: 726. ♂, ♀.

erythrocoxa Heinrich. Newfoundland (insular), N. S., Maine, Mich., N. W. T., B. C., Calif.

Platylabus erythrocoxa Heinrich, 1962. Canad. Ent. Sup. 27: 719. ♂, ♀.

foxleei foxleei Heinrich. Southeastern Alaska, s. B. C.

Platylabus foxleei Heinrich, 1962. Canad. Ent. Sup. 27: 723. ♂, ♀.

foxleei orientis Heinrich. Newfoundland (insular), Maine.

Platylabus foxleei(!) orientis Heinrich, 1976 (1975). Nat. Canad. 102: 777. ♂, ♀.

gracilicornis (Viereck). N. Mex., Calif.

Cratichneumon gracilicornis Viereck, 1903. In Skinner, Amer. Ent. Soc., Trans. 29: 79. ♀.

hyperetis Heinrich. Maine, B. C. Host: *Hyperetis amicaria* (H.-S.).

Platylabus hyperetis Heinrich, 1962. Canad. Ent. Sup. 27: 707. ♂, ♀.

imitans Heinrich. Que., Maine, B. C., Wash., Calif. Host: *Eupithecia* sp.

Platylabus imitans Heinrich, 1962. Canad. Ent. Sup. 27: 725. ♂, ♀.

incabus Davis. Ariz., Alaska, B. C., Oreg., Calif.

Platylabus incabus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 352. ♀.

lissosculptus Heinrich. Calif.

Platylabus lissosculptus Heinrich, 1962. Canad. Ent. Sup. 27: 742. ♂.

luteatae Heinrich. Newfoundland (insular), Que., Maine, Pa., Ont., Man., B. C., Oreg. Host:

Eupithecia sp., *E. luteata* Pack.

Platylabus luteatae Heinrich, 1962. Canad. Ent. Sup. 27: 715. ♂, ♀.

Taxonomy: Heinrich, 1971. Nat. Canad. 98: 1018 (variation).

melanocoxa Heinrich. Mont., Colo., B. C., Wash., Calif. Host: *Eupithecia annulata* (Hulst).

This species has been misidentified as *P. pedatorius* (Fabricius), a Eurasian species.

Platylabus melanocoxa Heinrich, 1962. Canad. Ent. Sup. 27: 727. ♂, ♀.

metallicus Bradley. Newfoundland (insular), Que., Maine, N. H., N. Y., Ont., Mich., B. C., Wash.

Platylabus metallicus Bradley, 1903. Canad. Ent. 35: 280. ♂, ♀.

Taxonomy: Heinrich, 1959. Ent. News 70: 215.

micheneri Heinrich. Calif.

Platylabus micheneri Heinrich, 1962. Canad. Ent. Sup. 27: 746. ♀.

monotonops Heinrich. Mass., N. Y.

Platylabus monotonops Heinrich, 1962. Canad. Ent. Sup. 27: 744. ♀.

Taxonomy: Heinrich, 1971. Nat. Canad. 98: 1020.

monotonus Heinrich. N. H., N. Y., Alta., Ariz., Alaska, B. C. Host: *Epirrita autumnata* (Bork.),

Itame anataria (Swett), *I. quadrilinearia* (Pack.).

Platylabus monotonus Heinrich, 1962. Canad. Ent. Sup. 27: 741. ♂, ♀.

montanus Cresson. Newfoundland (insular), N. H., Mass., Mich., Wash.

Ichneumon vaser Cresson, 1877. Amer. Ent. Soc., Trans. 6: 178. "♀" = ♂. Preocc. by Gmelin, 1790.

- Platylabus montanus* Cresson, 1877. Amer. Ent. Soc., Trans. 6: 200. ♀.
Platylabus perkinsi Walkley, 1958. In Krombein et al., U. S. Dept. Agr., Agr. Monog. 2, sup. 1, p. 48. N. name for *I. vafer* Cresson.
- opaculus americanus** Heinrich. Newfoundland (insular), Que., Maine, N. Y., Ont., Mich., Alta., B. C., Wash., Oreg. *P. opaculus opaculus* Thomson occurs in Europe.
Platylabus opaculus americanus Heinrich, 1962. Canad. Ent. Sup. 27: 730. ♂, ♀.
- ornatus** (Provancher). Newfoundland (insular), N. B. Que., Maine, N. Y., N. C., Ont., Mich., Sask., Alta., B. C., Wash., Calif. Host: *Semiothisa "granitata"* auct., *S. oweni* (Swett).
Phygadeuon ornatus Provancher, 1875. Nat. Canad. 7: 181. ♀.
- permodestus** Heinrich. Colo., B. C., Wash., Calif.
Platylabus permodestus Heinrich, 1962. Canad. Ent. Sup. 27: 720. ♂, ♀.
- polymelas** Heinrich. Newfoundland (insular), Colo., Ariz., s. B. C.
Platylabus polymelas Heinrich, 1962. Canad. Ent. Sup. 27: 754. ♂.
- pseudhistrio** Heinrich. Maine.
Platylabus pseudhistrio Heinrich, 1962. Canad. Ent. Sup. 27: 733. ♂.
- pulcher** Cushman. Newfoundland (insular), Que., Maine, Ont., Mich., B. C. Host: *Hydriomena renuncianta columbiata* Taylor.
Ichneumon lineolatus Provancher, 1875. Nat. Canad. 7 (1): 24 (key); 7 (3): 82. ♀. Preocc. by Gmelin, 1790.
Platylabus pulcher Cushman, 1922. U. S. Natl. Mus., Proc. 60 (21): 1. ♀.
- rubricapensis** Provancher. Newfoundland (insular), Que., Ont., Mich., S. Dak., Idaho, Oreg.
Platylabus Rubri Capensis Provancher, 1882. Nat. Canad. 13: 329. ♀. Name invalid; not binomial.
Platylabus Rubricapensis Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 35. Redescription with valid binomen.
- Taxonomy: Heinrich, 1976 (1975). Nat. Canad. 102: 774 (male described).
- rubristernatus** Heinrich. Conn., N. Y., w. N. C., Ohio, Ill.
Platylabus rubristernatus Heinrich, 1962. Canad. Ent. Sup. 27: 713. ♀.
- semiopacus** Heinrich. Colo.
Platylabus semiopacus Heinrich, 1962. Canad. Ent. Sup. 27: 730. ♂, ♀.
- serratae** Heinrich. N. B., Maine, Mich. Host: *Euchlaena serrata* (Drury)
Platylabus serratae Heinrich, 1962. Canad. Ent. Sup. 27: 738. ♂, ♀.
- sexmaculatae** Heinrich. Newfoundland (insular), Maine, Alta. Host: *Semiothisa sexmaculata* (Pack.).
Platylabus sexmaculatae Heinrich, 1962. Canad. Ent. Sup. 27: 749. ♀.
Platylabus sexmaculatae postremus Heinrich, 1976 (1975). Nat. Canad. 102: 776. ♂. N. syn. Described from two males collected at the same place and time in insular Newfoundland.
- Taxonomy: Heinrich, 1971. Nat. Canad. 98: 1019-1020 (male described).
- sphageti** Heinrich. Newfoundland (insular), Maine. Ecology: Occurs in spruce (*Picea mariana*) bogs.
Platylabus sphageti Heinrich, 1971. Nat. Canad. 98: 1020. ♀.
- subrubricus** Heinrich. Maine, Man., Sask., Alta. Host: *Eupithecia ravocostaliata* Pack.
Platylabus subrubricus Heinrich, 1962. Canad. Ent. Sup. 27: 714. ♂, ♀.
- tenuiformis** Heinrich. Ariz.
Platylabus tenuiformis Heinrich, 1962. Canad. Ent. Sup. 27: 743. ♂, ♀.
- tibialis** Ashmead. N. Mex., s.w. B. C., w. Wash.
Platylabus tibialis Ashmead, 1901. Psyche 9: 147. ♀.
Platylabus rainieri Heinrich, 1962. Canad. Ent. Sup. 27: 722. ♂, ♀. N. syn.
- vaferops** Heinrich. B. C., Wash., Calif.
Platylabus vaferops Heinrich, 1962. Canad. Ent. Sup. 27: 751. ♂, ♀.

Genus DENTILABUS Heinrich

Dentilabus Heinrich, 1975 (1974). Ann. Zool. 32: 147.

Type-species: *Platylabus variegatus* Wesmael. Orig. desig.

This is a small Holarctic and Oriental genus. I am not altogether convinced that it is worthy of distinction from *Platylabus*, but include the single Nearctic species treated below on advice received from Mr. Gerd Heinrich.

rufipes consors (Cresson), n. comb. Alta., Ariz., Alaska, B. C., Oreg., Calif. Host: *Hydriomena* sp., *H. renunciata* (Wlk.).

Platylabus consors Cresson, 1877. Amer. Ent. Soc., Trans. 6: 200. ♂.

Platylabus californicus Cresson, 1877. Amer. Ent. Soc., Trans. 6: 201. ♀.

rufipes rufipes (Provancher), n. comb. Newfoundland (insular), Que., Maine.

Phygadeuon rufipes Provancher, 1875. Nat. Canad. 7: 181. ♀.

Taxonomy: Heinrich, 1976 (1975). Nat. Canad. 102: 776-777 (male described).

Genus ASTHENOLABUS Heinrich

Stenolabus Heinrich, 1936 (1935). Deut. Ent. Ztschr., p. 197. Preocc. by Rechberg, 1910.

Type-species: *Platylabus latiscapus* Thomson. Orig. desig.

Asthenolabus Heinrich, 1951. Bonner Zool. Beitr. 2: 240. N. name for *Stenolabus* Heinrich.

This small genus is Holarctic and Oriental.

agilis (Cresson). N. S., P. E. I., Que., and N. W. T., s. to Pa., Mich., Colo., and Oreg.

Eurylabus agilis Cresson, 1877. Amer. Ent. Soc., Trans. 6: 201. ♂, ♀.

Taxonomy: Heinrich, 1959. Ent. News 70: 215.

canadensis (Cresson). Maine, Pa., N. C., Mich., B. C., Wash.

Platylabus canadensis Cresson, 1877. Amer. Ent. Soc., Trans. 6: 200. ♀.

scutellatus (Provancher). Que., N. Y., Ont., Mich.

Ischnus scutellatus Provancher, 1875. Nat. Canad. 7: 111. ♂.

Genus PRISTICEROS Gravenhorst

Pristiceros Gravenhorst, 1829. Ichn. Europaea, v. 1, p. 635.

Type-species: *Pristiceros serrarius* Gravenhorst. Monotypic.

Neopristiceros Heinrich, 1961 (1960). Canad. Ent. Sup. 15: 13.

Type-species: *Ichneumon lascivus* Cresson. Monotypic and orig. desig.

Pristicerops Heinrich, 1962. Canad. Ent. Sup. 27: 786.

Type-species: *Platylabus bakeri* Davis. Orig. desig.

This is a small Holarctic and Oriental genus.

Taxonomy: Townes, Momoi, and Townes, 1965. Amer. Ent. Inst., Mem. 5: 514 (syn.).

—Heinrich, 1975 (1974). Ann. Zool. 32: 165-167 (description of Oriental sp. in *Pristicerops*)

bakeri (Davis). Newfoundland (insular), Que., Maine, N. H., N. Y., Mich., Minn., Alta., B. C., Wash. Host: *Deilinia* sp.

Platylabus bakeri Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 352. ♂.

Pristicerops bakeri townesi Heinrich, 1962. Canad. Ent. Sup. 27: 789. ♂, ♀. N. syn.

lascivus (Cresson). Que., Maine, N. Y., Md., W. Va., Ont. Mich., Ill., Wash.

Ichneumon lascivus Cresson, 1867. Amer. Ent. Soc., Trans. 1: 309. "♂" = ♀.

Genus TROPICOLABUS Heinrich

Tropicalabus Heinrich, 1959. Ent. News 70: 216.

Type-species: *Platylabus foxi* Davis. Monotypic and orig. desig.

This genus is Nearctic and presumably Neotropic.

foxi (Davis). N. J. Only the holotype is known.

Platylabus foxi Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 353. ♂.

Platylabus foxii Dalla Torre, 1902. Cat. Hym., v. 3, p. 783. Emend.

Genus **AMBLOPLISUS** Heinrich

Ambloplisus Heinrich, 1930. Zool. Mus. Berlin, Mitt. 15: 551.

Type-species: *Ambloplisus primus* Heinrich. Monotypic.

Thaumatoletes Hopper, 1938. Amer. Ent. Soc., Trans. 68: 103.

Type-species: *Hoplismenus ornatus* Cresson. Monotypic and orig. desig.

This is a small Nearctic and Neotropical genus.

ornatus (Cresson). N. Y., Md., w. N. C., Iowa. Heinrich (1962) stated that there is a specimen in the U. S. Natl. Museum collection from "Idaho," but that specimen is from Iowa.

Hoplismenus ornatus Cresson, 1869. Amer. Ent. Soc., Trans. 2: 92. ♀.

Hoplismenus ovatus(!) Berthoumieu, 1904. In Wytsman, Gen. Ins., fasc. 18, p. 30.

Taxonomy: Heinrich, 1962. Canad. Ent. Sup. 27: 790-791 (male described).

Genus **HYPOMECUS** Wesmael

Hypomecus Wesmael, 1945 (1844). [Brussels] Acad. Roy. de Belg., Nouveaux Mem. 18: 147.

Type-species: *Hypomecus albitarsis* Wesmael. Monotypic.

This is a small Holarctic and Oriental genus.

quadriannulatus (Gravenhorst). Que., Colo., B. C., Wash., Calif.; Europe, n. Burma.

Mesoleptus quadriannulatus Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 13. ♂.

Hypomecus albitarsis Wesmael, 1845 (1844). [Brussels] Acad. Roy. de Belg., Nouveaux Mem. 18: 147. ♂, ♀.

Hypomecus albitarsis var. *carens* Berthoumieu, 1896. Soc. Ent. de France, Ann. 65: 299. ♀.

SUBFAMILY METOPIINAE

The members of this subfamily are internal parasites of Lepidoptera. Invariably, metopiines oviposit into the host larva and emerge as adults from the host pupa.

Revision: Townes and Townes, 1959. U. S. Natl. Mus. Bul. 216 [pt. 1]: 3-318.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 89-122 (genera of world).

Genus **PSEUDOMETOPIUS** Davis

Pseudometopius Davis, 1897. Amer. Ent. Soc., Trans. 24: 202.

Type-species: *Metopius hagenii* Cresson. Monotypic.

Tylocumnoides Uchida, 1940. Sapporo Nat. Hist. Soc., Trans. 16: 178.

Type-species: *Tylocumnoides egawai* Uchida. Monotypic and orig. desig.

Odontotylocumnus Uchida, 1940. Sapporo Nat. Hist. Soc., Trans. 16: 179.

Type-species: *Tylocumnoides pilosus* Uchida. Monotypic and orig. desig.

The only species known are the one Nearctic and two Japanese species cited in the generic synonymy above.

hagenii (Cresson). Mass., Conn., Mich., Kans., Okla., Tex.

Metopius Hagenii Cresson, 1872. Amer. Ent. Soc., Trans. 4: 168. ♀.

Genus **CHORINAEUS** Holmgren

Chorinaeus Holmgren, 1858 (1856). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 320.

Type-species: *Erochus funebris* Gravenhorst. Desig. by Viereck, 1912.

Polyrhabdus Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 98.

Type-species: *Polyrhabdus cariniger* Walsh. Monotypic.

This is a Holarctic genus of moderate size.

Revision: Aeschlimann, 1976 (1975). Soc. Ent. de France, Ann. (n. s.) 11: 723-744 (Western Palearctic spp.).

aequalis Townes. Que., Ont., and Alta. s. to n. Va., w. N. C., and Mich.

Chorinaeus aequalis Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 21. ♂, ♀.

- californicus** Ashmead. Alaska, B. C., Wash., Calif. Host: *Acleris gloverana* (Wlsm.).
Chorinaeus californicus Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 200. "♂" = ♀.
- constrictus** Davis. N. H., N. Y., Md., Va., w. N. C., e. Tenn., Ga. *C. constrictus* may prove to be a synonym of *C. funebris carinatus* (Cresson); compare Townes and Townes (1959, p. 27).
Chorinaeus constrictus Davis, 1897. Amer. Ent. Soc., Trans. 24: 209. ♀.
- Taxonomy: Townes and Townes, 1959. U. S. Natl. Mus. Bul. 216 [pt. 1]: 26, 27.
- emorsus** Townes. N. S., N. H., Mich.
Chorinaeus emorsus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 33. ♀.
- excessorius** Davis. Maine, Ont., and Minn. s. to Ala. and Kans.; also n. Utah and n. Calif. Host: *Choristoneura fumiferana* (Clem.), *Ancylics comptana* (Froel.).
Chorinaeus excessorius Davis, 1897. Amer. Ent. Soc., Trans. 24: 209. ♀.
- funebris carinatus** (Cresson). N. S., Que., Ont., s. Man., e. Alta., and s. B. C. s. to Md., Ala., and Tex. Host: *Ancylics comptana* (Froel.)?, *Strepsicrates smithiana* (Wlsm.), *Archips semifervans* (Wlk.), *Argyrotaenia velutinana* (Wlk.), *Anacamptis rhoifrutella* (Clem.), *Tetralopha asperatella* (Clem.), *Acrobasis betulella* Hulst.
Tryphon carinatus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 273. ♂.
Polyrhabus cariniger Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 98. ♂, ♀.
- funebris funebris** (Gravenhorst). Colo., Ariz., Idaho, Nev.; Eurasia. Host: *Grapholitha conversana* Wlsm. The neotype designated by Aeschlimann in his 1976 revision of *Chorinaeus* has no validity for a number of reasons, one of which is the fact that it is from Swedish Lappland.
Exochus funebris Gravenhorst, 1829. Ichn. Europaea, v. 1, p. 695. ♂ ?
Chorinaeus funebris a. femoratus Hellen, 1937. Notulae Ent. 17: 56. ♀. N. syn. (uncertain).
Chorinaeus funebris a. nigripes Hellen, 1937. Notulae Ent. 17: 56. ♀. N. syn. (uncertain).
Chorinaeus funebris clarus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 30. ♀. N. syn.
Chorinaeus funebris divisus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 31. ♀. N. syn.
- Taxonomy: Kusigemati, 1967. Insecta Mastsumurana 30: 20-21 (no subspecies recognized).
 Biology: Aeschlimann, 1974. Ent. Exp. Appl. 17: 488-489 (overwintering).
- labiosus** Townes. Western N. C., Mich.?
Chorinaeus labiosus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 32. ♀.
- longicalcar** Thomson. Que. w. to B. C., s. to N. C., s. Wis., and Calif.; Eurasia. Host: *Caripeta angustiorata* Wlk.?, *C. divisata* Wlk., *Hypagrytis piniata* (Pack.), *Protoboarmia porcelaria* (Gn.), *Semiothisa "granitata"* auct., *Choristoneura fumiferana* (Clem.). Specimens with black hind femora (sometimes all femora black) are known from Que., Ont., Mich., Wash. Oreg., and Calif. The correct name for this species may be *subcarinatus* Holmgren. Roman (1925) suppressed *longicalcar* as a synonym of *subcarinatus*; he stated that Holmgren's type was lost, but that it appeared certain from the description that Holmgren's "male" of *subcarinatus* was a *longicalcar* female. It seems quite likely that Roman was correct, and I was prepared to accept Roman as first revisor. However, Dr. J.-P. Aeschlimann pointed out to me (personal commun., August, 1976) that Holmgren (1873) had in fact been first revisor and had suppressed *subcarinatus* as a synonym of *C. cristator* (Gravenhorst). A search is to be made for the *subcarinatus* type in places to which Holmgren is known to have sent material; if it is not found, and if no specimens of *cristator* having a black face are found, *longicalcar* must be suppressed as a synonym of *subcarinatus*.
Chorinaeus subcarinatus Holmgren, 1858 (1856). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 321. ? ? Syn.?
- Chorinaeus longicalcar* Thomson, 1887. Deut. Ent. Ztschr. 31: 201. ♀.
Chorinaeus pleturus Davis, 1897. Amer. Ent. Soc., Trans. 24: 211. ♀. N. syn.
Chorinaeus longicalcar talaris Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 18. ♂, ♀. N. syn.

Chorinaeus longicalcar flavivrus Townes, 1959. In Townes and Townes, U. S. Natl. Mus.

Bul. 216 [pt. 1]: 19. ♂, ♀. N. syn.

Chorinaeus longicalcar suralis Townes, 1959. In Townes and Townes, U. S. Natl. Mus.

Bul. 216 [pt. 1]: 20. ♂, ♀. N. syn.

Taxonomy: Holmgren, 1873. Svenska Vetensk.-Akad., Ofvers. af ... Forhandl. 30 (4): 78.

— Roman, 1925 (1924). Arkiv for Zool. 17A (4): 27 (syn.). — Aeschlimann, 1976 (1975). Soc.

Ent. de France, Ann. (n. s.) 11: 725, 737-738.

opacitus Davis. Ariz., Nev., Calif.

Chorinaeus opacitus Davis, 1897. Amer. Ent. Soc., Trans. 24: 210. ♀.

recurvus Townes. N. H., N. Y.

Chorinaeus recurvus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt.

1]: 31. ♂, ♀.

Genus *TRIECES* Townes

Trieces Townes, 1946. Bol. Ent. Venezolana 5: 60.

Type-species: *Erochus texanus* Cresson. Orig. desig.

According to Townes (1971), "this is a large genus of worldwide distribution." Described species occur in the Neotropic (Mexico), Holarctic, and Ethiopian regions.

Revision: Kusigemati, 1971. Kagoshima Univ., Faculty Agr., Mem. 8: 218-221 (Japanese spp.).

— Aeschlimann, 1973. Soc. Ent. de France, Ann. (n. s.) 9: 975-987 (western Palearctic spp.).

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 97.

aquilus Townes. Western N. C.

Trieces aquilus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 50. ♀.

arcuatus Townes. Md., w. N. C., Ont., Man. Host: *Bomolocha bijugalis* (Wlk.)?, *B. deceptalis* (Wlk.), noctuid on *Cornus*.

Trieces arcuatus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 56. ♀ (male misdet.).

Taxonomy: Walley, 1969. Canad. Ent. 101: 1100-1101.

bradleyi Townes. Maine. N. Y., Md.

Trieces bradleyi Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 52. ♀.

calvatus Townes. Md., N. C., Tex.

Trieces calvatus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 54. ♂, ♀.

ciliolosus Townes. Md., Va.

Trieces ciliolosus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 53. ♂, ♀.

confusus Walley. Que., N. Y., Pa., Md., Va., w. N. C., Ont., Mich., Man. Host: *Agonoptyx argillacea* (Wlsm.).

Trieces confusus Walley, 1969. Canad. Ent. 101: 1098. ♂, ♀.

costatus (Davis). N. B. w. to s. B. C., s. to N. Y., Minn., Colo., and n. Calif.

Chorinaeus costatus Davis, 1897. Amer. Ent. Soc., Trans. 24: 211. ♂, ♀.

Chorinaeus pusillus Davis, 1897. Amer. Ent. Soc., Trans. 24: 211. ♂, ♀.

crassipes Walley. Ont., Sask., s. B. C. Host: *Meroptera pravella* (Grt.), *Anacampsis inocuella* (Zell.), *Compsiolechia niveopulvella* (Chamb.).

Trieces crassipes Walley, 1969. Canad. Ent. 101: 1102. ♂, ♀.

densus Townes. Mich.

Trieces densus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 42. ♂, ♀.

dentatus Townes. R. I., N. Y., Md., Ont. Host: Geometrid.

Trieces dentatus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 55. ♂, ♀.

diffidens Townes. Que., N. Y., Ont., Mich.

Triceus diffidens Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 57. ♂, ♀.

Taxonomy: Walley, 1969. Canad. Ent. 101: 1105-1106.

ejectus Townes. Northern Utah.

Triceus ejectus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 46. ♂.

epinotiae Walley. Ont., Man., Colo., n. B. C. Host: *Epinotia solandriana* (L.), *Pseudeuxentera oregonana* (Wlsm.).

Triceus epinotiae Walley, 1969. Canad. Ent. 101: 1104. ♂, ♀.

flavifrons (Ashmead). Conn., Mich., Wis., Minn., S. Dak., Kans., Colo.

Chorinaeus flavifrons Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 444. ♀.

flexus Walley. N. C.-Tenn. Ecology: The unique holotype was collected at an elevation of 5200 ft. in Great Smoky Mts. Nat. Park.

Triceus flexus Walley, 1969. Canad. Ent. 101: 1102. ♀.

fusus Townes. Mass., N. Y., Pa., N. J., Ont., Minn.

Triceus fusus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 49. ♂, ♀.

integer Townes. Mass., R. I., N. Y., Va., w. N. C., Mich., Sask.

Triceus integer Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 48. ♂, ♀.

marlatti (Ashmead). R. I., e. N. C., Kans.

Chorinaeus marlatti Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 200. ♀.

Chorinaeus marlattii Dalla Torre, 1901. Cat. Hym., v. 3, p. 221. Emend.

masoni Townes. Interior Alaska.

Triceus masoni Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 37. ♂, ♀.

onitis (Davis). N. S., Que., Maine, N. H., Ont., Man. Host: *Nites betulella* (Bsk.), *Psilocorsis quercicella* Clem., *P. reflexella* Clem., *Tetralopha* sp. on *Fagus*, *Pseudeuxentera* sp. on *Quercus rubra*, *Acleris* sp. on *Quercus rubra*.

Chorinaeus onitis Davis, 1897. Amer. Ent. Soc., Trans. 24: 210. ♂, ♀.

Taxonomy: Walley, 1969. Canad. Ent. 101: 1095-1098.

ruficoxa Walley. Southern Mich.

Triceus ruficoxa Walley, 1969. Canad. Ent. 101: 1101. ♂, ♀.

sapineus litus Townes. Colo., Alta., B. C., Wash., Calif.

Triceus sapineus litus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 44. ♀.

sapineus sapineus Townes. Que., N. H., w. N. C., Mich., Minn.

Triceus sapineus sapineus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 43. ♀.

sparsus Townes. Vt. s. to e. S. C., w. to Minn.

Triceus sparsus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 50. ♂, ♀.

tegaris Townes. Eastern Calif. Ecology: Known only from the holotype, which was collected in an area of desert scrub at Lee Vining, Calif.

Triceus tegaris Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 40. ♀.

teres Townes. Southern Man., Colo., n.e. Calif.

Triceus teres Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 41. ♂, ♀.

texanus (Cresson). N. J., Md., Fla., Kans., Tex.

Erochus texanus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 168. "♂" = ♀.

truncatus Walley. Tenn.

Triceus truncatus Walley, 1969. Canad. Ent. 101: 1101. ♀.

walleyi Townes. Que., Ont. Host: *Herculia thymetusalis* (Wlk.).

Tricless walleyi Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 47. ♂, ♀.

Genus METOPIUS Panzer

Genus METOPIUS Subgenus METOPIUS Panzer

Metopius Panzer, 1806. Krit. Rev. Insektenf. Deutschlands, v. 2, p. 78

Type-species: *Sphex vespoides* Scopoli. Desig. by Viereck, 1912.

Peltastes Illiger, 1807. In Rossi, Fauna Etrusca, ed. 2, v. 2, p. 55.

Type-species: *Ichneumon necatorius* Fabricius. Desig. by Curtis, 1824. The type-species is regarded as a synonym of *M. vespoides* (Scopoli).

Metopius subg. *Peltopius* Clement, 1927. In Schmiedeknecht, Opusc. Ichn., v. 5, p. 3461, 3465.

Type-species: *Sphex vespoides* Scopoli. Desig. by Clement, 1930.

This is a large subgenus of Neotropic (Mexico), Holarctic, Oriental, Australian, and Ethiopian distribution.

galbaneus Townes. Southern Oreg. s. to s. Calif.

Metopius (Metopius) galbaneus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 74. ♂, ♀.

krombeini epixanthus Townes. Tex., Colo., Ariz.

Metopius (Metopius) krombeini epixanthus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 71. ♂, ♀.

krombeini krombeini Townes. Southern N. Y., N. J., Md., Va., n. Ga., n. Mich., Wis., Ark., Okla. Ecology: Occurs in open stands of scrubby oaks.

Metopius (Metopius) krombeini krombeini Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 70. ♂, ♀.

mimicus Townes. Central Ariz.

Metopius (Metopius) mimicus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 68. ♂, ♀.

pulchellus Cresson. Southeastern Wyo., Colo., N. Mex., n. Utah, Ariz.

Metopius pulchellus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 271. ♀.

Metopius montanus Cresson, 1879. Amer. Ent. Soc., Trans. 7: xxviii in Proc. ♂. N. syn.

Metopius (Metopius) pulchellus sonora Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 73. ♂, ♀. N. syn.

robustus concinnus Cresson. Nev., n.w. Calif.

Metopius concinnus Cresson, 1879. Amer. Ent. Soc., Trans. 7: xxviii in Proc. ♂.

robustus mirandus Cresson. Western Kans., Colo.

Metopius mirandus Cresson, 1879. Amer. Ent. Soc., Trans. 7: xxviii in Proc. ♀.

Metopius grandior Viereck, 1905. Kans. Acad. Sci., Trans. 19: 314. ♀.

robustus robustus Cresson. Southern N. Y. s. to Ga., w. to e. Kans.

Metopius robustus Cresson, 1879. Amer. Ent. Soc., Trans. 7: xxvii in Proc. ♀.

Metopius harbecki Skinner, 1906. Ent. News 17: 150. ♂.

vittatus Townes. Utah, n. Ariz., s. B. C., Oreg., Calif.

Metopius (Metopius) vittatus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 76. ♂, ♀.

Genus METOPIUS Subgenus CULTRARIUS Davis

Cultrarius Davis, 1897. Amer. Ent. Soc., Trans. 24: 197.

Type-species: *Metopius rileyi* Marlatt. Monotypic.

This subgenus is not known to occur outside the Nearctic region.

birkmani Brues. Tex., s. Ariz., s. Calif.

Metopius birkmani Brues, 1907. Wis. Nat. Hist. Soc., Bul. 5: 56. ♂ (♀ misdet.).

comptus Cresson. Ga., S. Dak., Colo.

Metopius comptus Cresson, 1879. Amer. Ent. Soc., Trans. 7: xxviii in Proc. ♀.

Metopius laticinctus Cresson, 1879. Amer. Ent. Soc., Trans. 7: xxix in Proc. ♀.

consector Townes. Va., s. Minn., Mo., s. S. Dak., Nebr., Kans., Colo.

Metopius (Cultrarius) consector Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 83. ♂, ♀.

pectoralis Townes. Mo., Tex.?

Metopius (Cultrarius) pectoralis Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 85. ♂, ♀ ?

rileyi Marlatt. S. Dak., e. Nebr., n.e. Kans.

Metopius rileyi Marlatt, 1891. Ent. Soc. Wash., Proc. 2: 103. ♀.

rufipes Cresson. Eastern Nebr., Colo.

Metopius rufipes Cresson, 1865. Ent. Soc. Phila., Proc. 4: 270. ♀.

scapulatus Townes. Tex.

Metopius (Cultrarius) scapulatus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 81. ♂.

scitulus Cresson. Nev.

Metopius scitulus Cresson, 1879. Amer. Ent. Soc., Trans. 7: xxix in Proc. ♂.

secundus Townes. N. Mex. The type locality is San Ignacio, not "San Janacia" as misquoted from the label of the unique holotype by Townes and Townes.

Metopius (Cultrarius) secundus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 89. ♀.

ultimatus Davis. N. J. w. to e. Nebr., s. to Miss. and e. Tex.

Metopius ultimatus Davis, 1897. Amer. Ent. Soc., Trans. 24: 199. ♂.

xanthostigma Ashmead. Md., Va., N. C., S. C., s.w. Minn., N. Dak.

Metopius xanthostigma Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 438. ♂.

Genus **METOPHIUS** Subgenus **PELTALES** Townes

Metopius subg. *Peltales* Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 91.

Type-species: *Metopius errantia* Davis. Orig. desig.

This is a moderate sized subgenus of Neotropic and Nearctic distribution.

errantia arizonicus Townes. Southern Ariz.

Metopius (Peltales) errantius arizonicus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 94. ♀.

errantia californicus Townes. Oreg., Calif.

Metopius (Peltales) errantius californicus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 95. ♂, ♀.

errantia errantia Davis. N. J., n. Va., Ont., n. Mich., n. Minn. Host: Geometrid.

Metopius errantia Davis, 1897. Amer. Ent. Soc., Trans. 24: 199. ♀.

Metopius (Peltales) errantius errantius Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 93. Unjustified emend.

errantia floridanus Townes. Northern Fla.

Metopius (Peltales) errantius floridanus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 94. ♀.

notatus Townes. Ala.

Metopius (Peltales) notatus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 96. ♀.

Genus **METOPHIUS** Subgenus **TYLOPIUS** Townes

Metopius subg. *Tylopius* Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 97.

Type-species: *Metopius pinatorius* Brulle. Orig. desig.

Tylopius is a Holarctic subgenus of moderate size.

basalis basalis Cresson. Ga.?, Fla.

Metopius basalis Cresson, 1879. Amer. Ent. Soc., Trans. 7: xxvii in Proc. ♀.

Metopius medianus Morley, 1912. Rev. Ichn. Brit. Mus., v. 1, p. 78. ♂. Syn.?

basalis heinrichi Townes. N. B., Maine, w. Ont., Wis. s.w. B. C. Host: Saturniid.

Metopius (Tylopius) basalis heinrichi Townes, 1959. In Townes and Townes, U. S. Natl.

Mus. Bul. 216 [pt. 1]: 104. ♂, ♀.

bellus Cresson. Nev., s.w. Oreg., n.e. Calif.

Metopius bellus Cresson, 1879. Amer. Ent. Soc., Trans. 7: xxviii in Proc. ♂.

edwardsii Cresson. Alta., Wash.

Metopius edwardsii Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 376. ♂.

pollinatorius nevadensis Cresson. Nev., w. Wash., n.e. Calif. Host: *Acrionicta* sp.

Metopius nevadensis Cresson, 1879. Amer. Ent. Soc., Trans. 7: xxviii in Proc. ♂, ♀.

pollinatorius pollinatorius (Say). N. S. w. to s. B. C., s. to n. Fla. and Ill. Host: *Gluphisia*

septentrionalis Wlk., *Actias luna* (L.)?, *Acrionicta oblongata* (J. E. S.).

Peltastes pollinatorius Say, 1836. Boston Jour. Nat. Hist. 1: 245. ♂, ♀.

Metopius cordiger Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 120. ♂.

Genus TRICLISTUS Foerster

Triclistus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 161.

Type-species: *Erochus podagricus* Gravenhorst. Desig. by Morley, 1913 from five species included by Holmgren, 1873.

This is a large genus of worldwide distribution. Some species are often abundant. The interspecific differences are often somewhat obscure, and the males of some species cannot be distinguished.

Revision: Kusigemati, 1971. Kagoshima Univ., Faculty Agr., Mem. 8: 228-240 (Japanese spp.).

—Aeschlimann, 1973. Schweiz. Ent. Gesell., Mitt. 46: 219-252 (western Palearctic spp.).

adustus Townes. Colo., Wash., Oreg., Calif.

Triclistus adustus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 119. ♀.

brunnipes (Cresson). Northern Man. w. to Yukon, s. to w. Iowa, N. Mex., Ariz., and Calif.

Erochus brunnipes Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 374. ♀.

Triclistus bruneipes Dalla Torre, 1901. Cat. Hym., v. 3, p. 218. Emend.

chosis Townes. Mass., N. Y., N. J., Pa., Md., D. C., Va., Ont.

Triclistus chosis Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 121. ♀.

crassus Townes. P. E. I. w. to Yukon and Alaska, s. to N. Y., Wis., Colo., Ariz., and Calif.; e. U. S. S. R., n. Japan.

Triclistus crassus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 110. ♂, ♀.

Taxonomy: Kusigemati 1971. Kagoshima Univ., Faculty Agr., Mem. 8: 234-235.

emarginalus (Say). P. E. I. w. to s. B. C., s. to Fla., e. Kans., N. Mex., and n. Calif. Host:

Phlyctaenia extricalis (Gn.), *Tetralopha robustella* Zell., *Tholeria reversalis* (Gn.),

pyralid on *Alnus incana*, *Archips argyrospilus* (Wlk.), *Argyrotaenia velutinana* (Wlk.),

Croesia albicomana (Clem.), *Platynota idaensalis* (Wlk.), *Bucculatrix* sp., *Anthophila*

pariana (Clerck).

Ophion emarginalus Say, 1829. Contrib. Maclurian Lyceum to Arts and Sci. 1: 76. Sex not indicated.

Anomalon emarginatus (!) Say, 1835. Boston Jour. Nat. Hist. 1: 245.

Erochus fulvipes Cresson, 1864. Ent. Soc. Phila., Proc. 3: 285. ♂, ♀.

Taxonomy: Davis, 1897. Amer. Ent. Soc., Trans. 24: 222. —Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 230. —Cushman and Gahan, 1921. Ent. Soc. Wash., Proc. 23: 169. —Townes and Townes, 1959. U. S. Natl. Mus. Bul. 216 [pt. 1]: 113-116.

- evexus** Townes. N. H. s. to Md., w. to s. Sask. and Colo. Host: *Archips cerasivoranus* (Fitch), *Acrobasis comptoniella* Hulst.
Triclistus evexus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 118. ♂, ♀.
- melanocephalus** (Cameron). Que. w. to w. S. Dak., s. to e. N. C. and Ariz.; n. Mexico.
Exochus melanocephalus Cameron, 1886. In Wytsman, Biol. Cent.-Amer., Hym., v. 1, p. 280. "♂" = ♀.
Triclistus thoracicus Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 210. ♀.
- minutus** Carlson. Northwestern Va., s. Mich. Ecology: In Mich. seven specimens were collected with sweep nets on an upland field (abandoned farm site) with gravelly soil and a grass-herb plant cover; the field is surrounded by oak-hickory woodlands which are encroaching upon it at its edges.
Triclistus minutus Carlson, 1966. Mich. Ent. 1: 20. ♂, ♀.
- occidentis** Townes. Western Alta., w. Wash., e. Calif.
Triclistus occidentis Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 116. ♀.
- podagricus** (Gravenhorst). N. S., Que., Ont., Sask., Alta., Idaho, s.e. Alaska; Eurasia. Host: *Zeiraphera fortunana* (Kft.).
Exochus podagricus Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 336. ♂, ♀.
Triclistus nigrifellus Holmgren, 1873. Svenska Vetensk.-Akad., Ofvers. af ... Forhandl. 30 (4): 60. ♀.
- Taxonomy: Aeschlimann, 1973. Schweiz. Ent. Gesell., Mitt. 46: 233-235.
 Biology: Baltensweiler, 1958. Schweiz. Anst. f. d. Forstl. Versuchsw., Mitt. 34: 121.
 — Aeschlimann, 1974. Ent. Exp. Appl. 17: 488, 489-490 (overwintering).
- propinquus** (Cresson). Conn. s. to n. Ga., w. to Mich. and Ala.
Exochus propinquus Cresson, 1868. Amer. Ent. Soc., Trans. 2: 114. ♀, (♂ misdet.?).
- pygmaeus** (Cresson). N. S. w. to s. Alaska, s. to S. C., Ala., n.e. Kans., Colo., and Calif.; Eurasia.
 Host: *Paralobesia viteana* (Clem.), *Acleris variana* (Fern.). This is *T. pallipes* Holmgren (1873) in the sense of 20th Century European authors preceding Aeschlimann (1973).
 Overlooking the priority of *pygmaeus*, Townes and Townes (1959) erroneously suppressed it as a synonym of *pallipes*. Aeschlimann (1973) has shown that the *pallipes* "lectotype" selected by Aubert (1968) (= *pygmaeus*) is invalid, and selected a valid lectotype which is not conspecific with *pygmaeus*.
Exochus pygmaeus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 285. "♂" = ♀.
Triclistus taiwanensis Uchida, 1932. Hokkaido Imp. Univ., Faculty Agr., Jour. 25: 267. ♂.
 N. syn. Placed as a syn. of *T. pallipes* Holmgren by Townes, Townes, and Gupta (1961).
- Taxonomy: Townes and Townes, 1959. U. S. Natl. Mus. Bul. 216 [pt. 1]: 124-125. — Townes, Townes, and Gupta, 1961. Amer. Ent. Inst., Mem. 1: 303 (syn.). — Aubert, 1968. Schweiz. Ent. Gesell., Mitt. 41: 188 (invalid lectotype selected for *pallipes*). — Aeschlimann, 1973. Schweiz. Ent. Gesell., Mitt. 46: 236-239.
- Biology: Aeschlimann, 1974. Ent. Exp. Appl. 17: 488, 490-491 (overwintering). — Aeschlimann, 1975. Schweiz. Ent. Gesell., Mitt. 48: 165-171.
- rectus** Townes. Ariz., Calif.
Triclistus rectus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 117. ♀.

Genus COLPOTROCHIA Holmgren

There are two subgenera, one of which has no Nearctic species.

Genus COLPOTROCHIA Subgenus COLPOTROCHIA Holmgren

Colpotrochia Holmgren, 1856 (1854). Svenska Vetensk.-Akad. Handl. 75: 80.

Type-species: *Ichneumon elegantulus* Schrank. Monotypic. The type-species is regarded as a synonym of *C. cincta* (Scopoli).

Alcocerus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 161.

Type-species: *Tryphon trifasciatus* Cresson. By subsequent monotypy from inclusion by Davis, 1897.

Erochoides Cresson, 1868. Amer. Ent. Soc., Trans. 2: 37.

Type-species: *Erochoides mexicana* Cresson. Desig. by Viereck, 1914.

Ischyrocnemopsis Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 81.

Type-species: *Erochoides texana* Cresson. Monotypic and orig. desig.

Aithris Cameron, 1900. Manchester Lit. and Phil. Soc., Mem. and Proc. 44 (15): 106.

Type-species: *Aithris coenutus* Cameron. Monotypic.

Inoresa Cameron, 1909. Bombay Nat. Hist. Soc., Jour. 19: 724.

Type-species: *Inoresa pilosa* Cameron. Monotypic.

Sychnoleteroides Brethes, 1909. Buenos Aires Mus. Nac. de Hist. Nat., An. 19: 229.

Type-species: *Sychnoleteroides flavus* Brethes. Monotypic.

This is a large subgenus of Neotropic, Holarctic, and Oriental distribution.

crassipes (Provancher). Maine s. to S. C., w. to Wis.

Cteniscus crassipes Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 109. ♀.

Barron (1975) was unable to locate any syntype.

Taxonomy: Barron, 1975. Nat. Canad. 102: 456.

fultoni Townes. Eastern Va., e. N. C., e. S. C.

Colpotrochia (*Colpotrochia*) *fultoni* Townes, 1959. In Townes and Townes, U. S. Natl. Mus.

Bul. 216 [pt. 1]: 132. ♀.

texana (Cresson). N. C., S. C., Ga., Fla.

Erochodes (!) *texana* Cresson, 1872. Amer. Ent. Soc., Trans. 4: 167. ♂.

Ischyrocnemis carolina Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 443. ♂.

trifasciata (Cresson). N. S. s. to Ga., w. to Minn. and e. Kans.

Tryphon? *trifasciatus* Cresson, 1864. Ent. Soc. Phila., Proc. 3: 276. ♂.

Genus PERIOPE Haliday

Periope Haliday, 1838. Ann. Nat. Hist. 2: 114.

Type-species: *Periope auscultator* Haliday. Monotypic.

Monoplectron Holmgren, 1856 (1854). Svenska Vetensk.-Akad. Handl. 75: 81.

Type-species: *Monoplectron zygaenator* Holmgren. Monotypic. The type-species is regarded as a synonym of *P. auscultator* Haliday.

Oligoplectron Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 161, 218, 219.

Unnecessary n. name for *Periope* Haliday. The variant spelling *Oligoplectrum* appeared on p. 218.

Monoplectrochus Heinrich, 1949. Muenchen. Ent. Gesell., Mitt. 35-39: 109.

Type-species: *Monoplectrochus hoerhammeri* Heinrich. Monotypic and orig. desig.

This is a small Holarctic genus.

aethiops (Cresson). Que. w. to e. Alta., s. to n.w. S. C. and e. Nebr. Ecology: Occurs in late summer and early fall and is often found on flowers of *Aster*.

Tryphon aethiops Cresson, 1868. Amer. Ent. Soc., Trans. 2: 106. ♀.

Chorinaeus pulchripes Provancher, 1883. Nat. Canad. 14: 12. ♀.

Genus SPUDAEUS Gistel

Trachyderma Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 283. Preocc. by Latreille, 1829 (April).

Type-species: *Trachyderma scabra* Gravenhorst. Monotypic.

Spudaeus Gistel, 1848. Naturgesch. Thierr. f. Hoeh. Schul., p. xi. N. name for *Trachyderma* Gravenhorst.

Tylocomnus Holmgren, 1873. Svenska Vetensk.-Akad., Ofvers. af ... Forh. 30 (4): 76 N. name for *Trachyderma* Gravenhorst.

This is a small Holarctic genus.

indigus (Davis). N. S. w. to B. C., s. to N. H., Mich., and Colo.

Tylecomnus (!) *indigus* Davis, 1897. Amer. Ent. Soc., Trans. 24: 204. ♂, ♀.

scaber umbrosus (Davis). Southern Alta. s. to Ariz., w. to s. B. C. and Calif. *S. scaber scaber* (Gravenhorst) is European.

Tylecomnys (!) *umbrosus* Davis, 1897. Amer. Ent. Soc., Trans. 24: 203. ♀.

Genus BOTHROMUS Townes

Bothromus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 142.

Type-species: *Tylecomnys* (!) *minoris* Davis. Orig. desig.

This is a small Nearctic genus.

Revision: Walley, 1966. Canad. Ent. 98: 1272-1275.

bicolor Walley. Que., S. Dak., Alta., B. C., Wash.

Bothromus bicolor Walley, 1966. Canad. Ent. 98: 1273. ♀.

cruralis Townes. Northeastern Calif.

Bothromus minoris cruralis Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 144. ♀.

gibbus Townes. Ont., w. Colo., Alta., B. C. Host: *Eupithecia ravocostaliata* Pack. on willow, geometrid on willow.

Bothromus gibbus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 145. ♂, ♀.

minoris (Davis). Que., Maine, N. H., N. Y., Ont., Mich., Sask., s. B. C. Host: *Eupithecia* sp. on *Ceanothus sanguineus*, *E. castigata* Hbn.? on *Betula papyrifera*, geometrid on *Alnus*.

Tylecomnys (!) *minoris* Davis, 1897. Amer. Ent. Soc., Trans. 24: 204. ♀.

Genus APOLOPHUS Townes

Apolophus Townes, 1971. Amer. Ent. Inst., Mem. 17: 111.

Type-species: *Apolophus borealis* Townes. Monotypic and orig. desig.

This is a small Neotropical and Holarctic genus.

borealis Townes. Northern Mich., w. Oreg., n.w. Calif.; Germany.

Apolophus borealis Townes, 1971. Amer. Ent. Inst., Mem. 17: 112. ♀.

Genus LEURUS Townes

Leurus Townes, 1946. Bol. Ent. Venezolana 5: 59.

Type-species: *Eroxchus caeruliventris* Cresson. Monotypic and orig. desig.

This is a small Neotropical and Nearctic genus. I have seen an undescribed species from eastern N. C.; hopefully, it will soon be described by Mr. T. P. Nuhn.

caeruliventris borealis Townes. Southeastern Mass. s. to Fla., w. to s. Mich., e. Kans. and La.

Host: *Desmia funeralis* (Hbn.). *L. caeruliventris caeruliventris* is Neotropical.

Leurus caeruliventris borealis Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 149. ♂, ♀.

Genus SETICORNUTA Morley

Megatrema Cameron, 1907. Ztschr. System. Hym. Dipt. 7: 468. Preocc. by Leach, 1825 and Mayr, 1865.

Type-species: *Megatrema albopilosa* Cameron. Monotypic.

Seticornuta Morley, 1913. Fauna Brit. India, Hym., v. 3, pt. 1, p. 310.

Type-species: *Seticornuta albicalcar* Morley. Monotypic and orig. desig. The type-species is regarded as a synonym of *S. albopilosa* (Cameron).

This is a small Oriental and Holarctic genus.

apicalis (Cresson). R. I. s. to n. Fla., w. to Wis., Nebr., and Ala. Host: *Acrobasis betulella*

Hulst, *A. caryivorella* Rag., *A. indigenella* (Zell.), *A. juglandis* (LeB.), *A. sylviella* Ely.

Eroxchus apicalis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 285. "♂" = ♀.

terminalis (Ashmead). Que. s. to w. N. C., w. to e. Kans. Host: Tortricid, *Nephopteryx virgatella* (Clem.) on *Robinia pseudoacacia*, *N. subcaesiella* (Clem.).
Triclistus terminalis Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 201. ♂.

Genus CARRIA Schmiedeknecht

Carria Schmiedeknecht, 1924. Ent. Monthly Mag. 60: 112.
 Type-species: *Carria paradoxa* Schmiedeknecht. Monotypic.

This is a small Holarctic and Australian genus.

dreisbachi californica Townes. Northeastern Calif.

Carria dreisbachi californica Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 157. ♂, ♀.

dreisbachi dreisbachi Townes. Que. w. to Sask., s. to w. N. C. and Ill.

Carria dreisbachi dreisbachi Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 155. ♂, ♀.

dreisbachi montana Townes. Colo., N. Mex., Ariz., w. Wash.

Carria dreisbachi montana Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 156. ♂, ♀.

inculcata Townes. N. J., Md., s.e. N. C., e. S. C.

Carria inculcata Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 158. ♂, ♀.

Genus MACROMALON Townes

Macromalon Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 118.
 Type-species: *Macromalon montanum* Townes. Monotypic and orig. desig.

Only two species are known; one from India has been reared from *Plutella xylostella* (L.).

montanum Townes. Colo. Ecology: The type specimens were collected at elevations of 9400, 9500, and 11000 ft. in the Rocky Mountains.

Macromalon montanum Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 159. ♂, ♀.

Genus HYPsicERA Latreille

Hypsicera Latreille, 1829. In Cuvier, Le Regne Anim., ed. 2, v. 5, p. 288.

Type-species: *Ichneumon femoralis* Gravenhorst. Monotypically included and desig. by Viereck, 1914. The type-species designation is Gravenhorst's 1820 identification of *Ichneumon femoralis* Geoffroy.

Metacoelus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 161.

Type-species: *Erochus femoralis* Gravenhorst. Desig. by Viereck, 1914 from four species included by Holmgren, 1873. The type-species designation is Gravenhorst's 1829 identification of *Ichneumon femoralis* Geoffroy.

Polyclistus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 161.

Type-species: *Ichneumon femoralis* Geoffroy. Desig. by Viereck, 1912 from three species included by Thomson, 1887.

Plesioerochus Cameron, 1905. So. African Phil. Soc., Trans. 15: 202.

Type-species: *Plesioerochus rufipes* Cameron. Monotypic.

This large genus is Ethiopian, Oriental, and Holarctic. The largest number of species occur in the tropics of the Old World.

Revision: Kusigemati, 1971. Kagoshima Univ., Faculty Agr., Mem. 8: 253-261 (Japanese spp.).

cuneata Townes. Maine, R. I., N. Y., Ont., Ohio, Alta., Ariz., Alaska, Calif.

Hypsicera cuneata cuneata Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 165. ♂, ♀.

Hypsicera cuneata opaca Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 166. ♂, ♀. N. syn.

curvator (Fabricius). N. S. w. to s. B. C., s. to Pa., Colo., and Wash.; Europe. Adventive. Host: *Tinea pellionella* (L.). Also occurs adventively in the Neotropic region according to Townes and Townes (1959). Only females are known.

Ichneumon curvator Fabricius, 1793. Ent. System., v. 2, p. 177. [female].

Ichneumon mansuetor Gravenhorst, 1807. Vergl. Uebers. Zool. Systeme, p. 254. [female].

Hyperacmus tineae Riley, 1890. U. S. Dept. Agr., Insect Life 2: 213. ♀.

Hyperacmus ovatus Davis, 1897. Amer. Ent. Soc., Trans. 24: 218. ♀.

Taxonomy: Townes and Townes, 1959. U. S. Natl. Mus. Bul. 216 [pt. 1]: 161, 163-164 (syn. distribution).

femoralis (Geoffroy). Que. w. to Wash., s. to e. N. C., Ark., Kans., and Calif.; Eurasia; S. Africa, Madagascar; Australia; Hawaii; Brazil, Argentina, Chile. Ecology: Often collected on windows in buildings. Adventive. Presumably a parasite of Lepidoptera which feed upon stored products.

Ichneumon femoralis Geoffroy, 1785. In Fourcroy, Ent. Parisiensis, v. 2, p. 396. [female?]

Erochus laevis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 286. ♂, ♀.

Metacoelus levis Dalla Torre, 1901. Cat. Hym., v. 3, p. 217. Emend.

Crypturus bonaerensis Schrottky, 1902. Buenos Aires Mus. Nac. de Hist. Nat., An. 8: 100.

"♂" = ♀.

Plesioerochus rufipes Cameron, 1905. So. African Phil. Soc., Trans. 15: 203. "♂" = ♀.

Erochus platensis Brethes, 1924. Nunquam Otiosus-II (Buenos Aires), p. 10. [female].

Taxonomy: Townes and Townes, 1966. Amer. Ent. Inst., Mem. 8: 195-196 (syn.).

fulviceps Townes. Southwestern Va.

Hypsicera fulviceps Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 164. ♀.

Genus STETHONCUS Townes

Stethoncus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 167.

Type-species: *Stethoncus arcticus* Townes. Monotypic and orig. desig.

This is a small Holarctic genus.

arcticus Townes. Newfoundland (Labrador), n. Que., N. H., n. Man., interior Alaska. This is a subarctic species with a relict population on Mt. Washington, N. H.; the holotype is labeled as being from Fort Chimo, Labrador, which is now in Quebec.

Stethoncus arcticus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 168. ♂, ♀.

Genus SYNOPSIS Townes

Synopsis Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 168.

Type-species: *Synopsis clepsydra* Townes. Monotypic and orig. desig.

This is a small Holarctic and Neotropic genus.

Revision: Kusigemati, 1971. Kagoshima Univ., Faculty Agr., Mem. 8: 262-263 (Japanese spp.).

clepsydra Townes. Que., Vt., Mass., N. Y., Mich., s. Ind., Wis., s. B. C., n.e. Calif.

Synopsis clepsydra Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 169. ♂, ♀.

Genus EXOCHUS Gravenhorst

Erochus Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 328.

Type-species: *Ichneumon gravipes* Gravenhorst. Desig. by Viereck, 1912.

Amesolytus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 161.

Type-species: *Amesolytus ferrugineus* Ashmead. By subsequent monotypy from inclusion by Ashmead, 1896.

Mima Davis, 1895. In Slosson, Ent. News 6: 317. Nomen nudum.

Mima Davis, 1897. Amer. Ent. Soc., Trans. 24: 206, 219. Preocc. by Meigen, 1820 and Westerlund, 1886.

Type-species: *Mima washingtonensis* Davis. Monotypic.

Xantherochus Morley, 1913. Fauna Brit. India, Hym., v. 3, pt. 1, p. 292.

Type-species: *Xantherochus scutellatus* Morley. Monotypic and orig. desig.

This is a very large genus, apparently of worldwide distribution, although no species have been described from the Australian region.

Revision: Kusigemati, 1971. Kagoshima Univ., Faculty Agr., Mem. 8: 263-285 (Japanese spp.).

albiceps Walsh, N. J., S. C., Ill., La.; Venezuela?

Erochus albiceps Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 96. "♂" = ♀.

Erochus sulcatus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 211. ♂.

Taxonomy: Townes, 1972. Ent. Soc. Wash., Proc. 74: 259 (syn.).

albifrons Cresson. P. E. I. w. to Alta. and Wash., s. to Ala., N. Mex., and Calif. Host: *Archips cerasivoranus* (Fitch), *A. fervidanus* (Clem.), *A. rileyanus* (Grt.), *Argyrotaenia velutinana* (Wlk.), *Choristoneura rosaceana* (Harris), *Platynota idaeusalis* (Wlk.).

Erochus albifrons Cresson, 1868. Amer. Ent. Soc., Trans. 2: 114. ♀.

annulicrus Walsh, N. B. w. to B. C., s. to w. N. C., Ill., Colo., and Ariz.

Erochus annulicrus Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 95. ♂.

arillosus Townes. P. E. I., Mass., N. Y., N. J., Wis., Alta.

Erochus arillosus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 226. ♂, ♀.

atriceps Walsh, N. B. w. to Man., s. to Fla. and Tex.

Erochus atriceps Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 95. ♂.

Erochus rufomaculatus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 113. ♀.

Erochus atriceps atricarpus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 208. ♂, ♀. N. syn.

brutus Townes. Que., Ont., N. Y., Pa., Md., w. N. C., Sask., Alta. Host: Phycitine pyralid on *Tilia*.

Erochus brutus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 228. ♂, ♀.

bryanti Townes. N. S., Ont., Alta.

Erochus bryanti Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 191. ♂, ♀.

canidens Townes. N. Y., Pa., Mich., Alta.

Erochus canidens Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 250. ♀.

capnodes Townes. Northwestern Calif.

Erochus capnodes Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 239. ♂.

cnemidotus Townes. Que., Mass., R. I., N. Y., Ont., Sask., Alta., Yukon, B. C.

Erochus cnemidotus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 237. ♂, ♀.

cuneatus Townes. Maine. The holotype is labeled as being reared from *Heterarthrus nemoratus* (Fall.), but this host record is almost certainly incorrect.

Erochus cuneatus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 255. ♂.

decoratus hebes Townes. Colo., Ariz., s.e. Alaska, B. C. Host: *Acleris variana* (Fern.). *E.*

decoratus decoratus Holmgren is Eurasian.

Erochus decoratus hebes Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 264. ♀.

decoratus scitulus Provancher. N. S. s. to Fla., w. to Minn. and Kans. Host: *Acleris variana* (Fern.), *Argyrotaenia* sp. on *Abies*, Tortricid on *Abies*, *Epinotia aceriella* (Clem.).

Erochus scitulus Provancher, 1877. Nat. Canad. 9: 15. ♀.

- denotatus** Townes. Que. s. to s.e. N. C., w. to Minn. Host: *Zomaria* sp., *Z. interruptolineana* (Fern.).
Erochus denotatus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 206. ♂, ♀.
- dentifrons** Townes. Que., Colo., N. Mex., Ariz., Oreg., Calif.
Erochus dentifrons Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 206. ♂, ♀.
- dorsalis** Cresson. Que. w. to s.e. Wash., s. to S. C. and Ala. Host: *Meroptera praveilla* (Grt.) on sumac.
Erochus dorsalis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 286. "♂" = ♀.
Amesolytus pictus Fyles, 1904. Canad. Ent. 36: 207. ♀. N. syn.; preocc. in *Erochus* by Holmgren, 1858.
Erochus pictilis Walkley, 1958. In Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2, sup. 1, p. 59. N. name for *Amesolytus pictus* Fyles.
Erochus dorsalis fylesi (!) Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 247. Lapsus for *E. dorsalis pictilis* Walkley.
- elimatus** Townes. Colo. Ecology: The type series was collected at an elevation of 9400 ft. in the Rocky Mts.
Erochus elimatus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 194. ♂, ♀.
- enodis** Townes. S. Dak., Colo., Ariz.
Erochus enodis Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 189. ♂, ♀.
- evetrieae** Rohwer. Northern Idaho, w. Wash., w. Oreg., n.w. Calif. Host: *Barbara colfaxiana siskiyouana* (Kft.), *B. colfaxiana taxifoliella* (Bsk.).
Erochus (Triclistus) evetrieae Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 223. ♀.
- externus** Townes. Oreg.
Erochus externus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 238. ♀.
- fastigatus** Townes. Maine, Mass., R. I. Host: *Ancyliis comptana* (Froel.) on *Arctostaphylos*.
Erochus fastigatus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 249. ♂, ♀.
- ferrugineus** (Ashmead). Mass., Pa., Md., Fla., Iowa, S. Dak., Tex. Ecology: Possibly nocturnal.
Amesolytus ferrugineus Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 201. ♂, ♀.
- flavifrontalis** Davis. N. B., N. W. T., and Yukon s. to N. Y., Mich., Ariz., and Calif. Host: Tortricid.
Erochus flavifrontalis Davis, 1897. Amer. Ent. Soc., Trans. 24: 217. ♂, ♀.
Amerolytus (!) *flavifrons* Ashmead, 1906. In Slosson, Ent. News 17: 324. Nomen nudum.
Erochus alpinus Cushman, 1922. U. S. Natl. Mus., Proc. 61 (8): 13. ♂. Formerly preocc. in *Erochus* by Tryphon *alpinus* Zetterstedt, 1838.
Erochus montanus Walkley, 1958. In Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2, sup. 1, p. 59. N. name for *E. alpinus* Cushman.
- genualis** Townes. N. J., Md., W. Va., Va., n. Ga., Ohio.
Erochus genualis Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 233. ♂.
- gravipes** (Gravenhorst). N. S., Ont., Mich.; Eurasia. The "subspecies" *E. gravipes rufiantennalis* Uchida (1942) was described from a single male specimen from northeastern China; as it has not been included in any revision, its status as a subspecies of *gravipes* remains dubious.
Ichneumon gravipes Gravenhorst, 1820. R. Accad. delle Sci. Torino, Mem. 24: 384. ♂, ♀.
- Taxonomy: Uchida, 1942. Insecta Matsumurana 16: 126-127.
- hiulcus** Townes. Southeastern B. C.
Erochus hiulcus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 216. ♀.

- litus** Townes. N. S., s.w. Alaska, w. Wash., w. Oreg., Nev., Calif.
Erochus litus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 196.
 ♂, ♀.
- mandibularis** Cushman. N. H., Mich.
Polyclistus frontalis Ashmead, 1902. In Slosson, Ent. News 13: 321. Nomen nudum.
Erochus mandibularis Cushman, 1922. U. S. Natl. Mus., Proc. 61 (8): 13. "♂" = ♀.
- megadon** Townes. R. I., N. Y., N. J., Mich., Colo.
Erochus megadon Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 259. ♀.
- mesodon** Townes. R. I., Conn., N. Y.
Erochus mesodon Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 258. ♀.
- mesorufus** Townes. N. B., N. Y., Del., Ala.
Erochus mesorufus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 232. ♂, ♀.
- mitratus atrocaxalis** Cresson. N. B. w. to s. Man., s. to W. Va. and Tex. Host: Tortricid on *Kalmia*. According to Townes and Townes (1959) *E. mitratus mitratus* Gravenhorst and two other "subspecies" occur in Europe; they regarded a specimen from Japan as belonging to an undescribed subspecies.
Erochus atrocaxalis Cresson, 1868. Amer. Ent. Soc., Trans. 2: 114. ♀.
- Taxonomy: Townes and Townes, 1959. U. S. Natl. Mus. Bul. 216 [pt. 1]: 181.
- mitratus orias** Townes. Wyo., Alta., Utah, B. C., Wash., Oreg., Nev., Calif.
Erochus mitratus orias Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 182. ♂, ♀.
- montivagus** Townes. Colo. Ecology: Known only from the holotype, which was collected at an elevation of 9400 ft. in the Rocky Mts.
Erochus montivagus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 201. ♀.
- nigripalpis subobscurus** Townes. Calif. Host: *Argyrotaenia citrana* (Fern.), *A. franciscana* (Wlsh.), *Platynota stultana* (Wlsh.), rose leaf tier. *E. nigripalpis nigripalpis* Thomson is European.
Erochus nigripalpis subobscurus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 219. ♂, ♀.
- nigripalpis tectulum** Townes. N. S. w. to B. C., s. to w. N. C., s. Wis., Colo., and n. Oreg. Host: *Archips argyropilus* (Wlk.), *A. rosanus* (L.), *Choristoneura fumiferana* (Clem.), *C. lambertiana ponderosana* O'Farrell, *C. occidentalis* Free.
Erochus nigripalpis tectulum Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 218. ♂, ♀.
- ochreateus** Townes. Ariz.
Erochus ochreateus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 202. ♂.
- ostentatus** Davis. N. Y., N. J., Pa., Md., D. C., Ont., Ala., Minn., e. Alta.
Erochus ostentatus Davis, 1897. Amer. Ent. Soc., Trans. 24: 217. ♂.
- peroniae** Townes. N. S., N. B., Que., Maine, N. H., Vt., N. Y., s.w. Va., Ont., Mich., Colo., s. B. C., Wash., Oreg. Host: *Acleris variana* (Fern.), *Archippus packardianus* (Fern.) on *Abies*, *Argyrotaenia* sp.? on *Abies*, *Clepsis melaleucana* (Wlk.), *Croesia albicomana* (Clem.) on scarlet oak.
Erochus peroniae Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 235. ♂, ♀.
- pictus xanthopsis** Ashmead. N. S., Que., Maine, N. H., N. Y., w. N. C., e. Tenn. Ont., Colo., s. B. C., Wash., Oreg., n. Calif., *E. pictus pictus* Holmgren is European. One specimen in the U. S. Natl. Museum collection is labeled as being reared from *Heterarthrus nemoratus* (Fall.), but this host record is almost certainly incorrect (see *E. cuneatus* Townes).
Erochus xanthopsis Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 201. ♂.

- pleuralis** Cresson. Mass., N. Y., Man., and Yukon s. to Md., Ill., Tex., and Ariz. Host: *Ancylis comptana* (Froel.), *Anacamptis agrimoniella* (Clem.), *Acleris* sp. on *Viburnum*.
Erochus pleuralis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 286. ♂.
Erochus pallipes Cresson, 1864. Ent. Soc. Phila., Proc. 3: 287. ♂. Preocc. by *Erochus pallipes* (Motschulsky), 1863.
Erochus evectus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 168. ♀.
Erochus pallidipes Dalla Torre, 1901. Hym. Cat., v. 3, p. 213. Emend.; Preocc. in *Erochus* by Dalla Torre, 1901, p. 48.
- postfurcalis** Townes. N. S. w. to Man., s. to N. C., Kans., and Colo. Host: *Episimus argutatus* (Clem.), *Acleris oryccocana* (Pack).
Erochus postfurcalis Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 242. ♂, ♀.
- pullatus** Townes. Northern Man., interior Alaska.
Erochus pullatus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 197. ♂, ♀.
- quadrads** Townes. Md.
Erochus quadrads Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 254. ♀.
- russeus** Townes. Pa.?, N. Mex., Ariz.
Erochus russeus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 188. ♂, ♀.
- rutilatus** Townes. N. S., P. E. I., Que., Mass., N. Y., Pa., Md., e. N. C., Ont., Wis., s. B. C.
Erochus rutilatus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 225. ♂, ♀.
- semirufus** Cresson. N. S. s. to S. C., w. to Sask., e. Kans., and Tex.
Erochus semirufus Cresson, 1868. Amer. Ent. Soc., Trans. 2: 114. ♂, ♀.
Mesoleius inflatifrons Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 107. ♀.
Erochus rufigaster Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 443. ♀.
Erochus solitarius Davis, 1897. Amer. Ent. Soc., Trans. 24: 216. ♂. Davis described *solitarius* from a composite specimen; this synonymy is based upon the abdomen, which was selected as lectotype by Townes (1945); the head and thorax are those of another *Erochus* sp. which Townes did not identify.
- Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 587.
- signifer** Townes. Maine, N. Y., n. Ohio, Mich., Wis., Minn., Utah, Alaska, B. C.
Erochus signifer Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 240. ♀.
- silus** Townes. Northern Idaho, n. Utah, e. Calif. The type locality is River Heights (Cache Co.), Utah.
Erochus silus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 261. ♂, ♀.
- spilotus** Townes. Coastal Maine, w. Ont., w. Wash. Host: Tortricid.
Erochus spilotus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 245. ♀.
- spinalis** Townes. Central and s.w. Calif.; Honduras? Host: *Clepsis peritana* (Clem.).
Erochus spinalis Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 202. ♀.
- stenostoma** Townes. Ariz., s. B. C., Wash., Oreg., Calif. Host: *Cadra figulilella* (Greg.).
Erochus stenostoma Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 179. ♂, ♀.
- tenebrosus** Townes. Northwestern Wyo., Colo., w. Wasn. Ecology: This species has been collected at elevations between 8850 ft. and 11600 ft. in the Rocky Mts. and at 4700 ft. in the Cascade Range.
Erochus tenebrosus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 220. ♂, ♀.

transversus Townes. Ont., Sask.

Erochus transversus Townes, 1959. In Townes and Townes, U. S. Natl. Mus. Bul. 216 [pt. 1]: 241. ♀.

turgidus Holmgren. Ont., Sask., and Mont. s. to n. Fla., La., N. Mex., and s. Calif.; Eurasia.

Host: *Petrova albicapitana* (Bsk.), *Dioryctria amatella* (Hulst), *D. auranticella* (Grt.), *D. discula* Hein., *D. reniculella* (Grt.).

Erochus turgidus Holmgren, 1858 (1856). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 312. ♀.

SUBFAMILY BANCHINAE

The distribution of this large subfamily is worldwide. The species are all thought to be internal larval parasites of Lepidoptera.

TRIBE STILBOPINI

This small tribe includes three genera, only one of which is known from the Nearctic region.

Genus STILBOPS Foerster

Stilbops Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 163.

Type-species: *Pimpla vetula* Gravenhorst. Desig. by Ashmead, 1900 from two species included by Schmiedeknecht, 1888.

Aphanoroptrum Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 168.

Type-species: *Lissonota ruficornis* Gravenhorst. By subsequent monotypy from inclusion by Thomson, 1877. The type-species is regarded as a synonym of *S. abdominalis* (Gravenhorst).

Aphanoroptra Thomson, 1877. Opusc. ent. 8: 736. Emend.

Aphanorhoptrum Dalla Torre, 1901. Cat. Hym., v. 3, p. 528. Emend.

Eritrachynus Schmiedeknecht, 1913. Opusc. Ichn. v. 5, fasc. 24, p. 2709.

Type-species: *Eritrachynus asper* Schmiedeknecht. By subsequent monotypy from inclusion by Schmiedeknecht, 1913 (fasc. 25, p. 2724).

According to Townes (1970) this is a moderate sized genus of Holarctic and Oriental distribution. An undescribed species is known from Maryland. The European *S. abdominalis* (Gravenhorst) has been reared from the incurvarioid lepidopteran *Adela reamurella* (L.); its life cycle is apparently analogous to that of pionine Ctenopelmatinae, the egg being deposited inside that of the host and the adult emerging from the host after the latter has spun its cocoon.

Taxonomy: Short, 1957. Roy. Ent. Soc. London, Proc., Ser. B: Taxonomy 26: 175-176

(final-instar larva). —Perkins, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 11: 405-406, 453.

—Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 7.

TRIBE GLYPTINI

Ten genera are known. Three occur in the Nearctic region.

Revision: Momoi, 1963. Insecta Matsumurana 25: 98-117 (Japanese spp.).

Genus SPHELODON Townes

Sphelodon Townes, 1966. Amer. Ent. Inst., Mem. 8: 328.

Type-species: *Glypta phoxopteridis* Weed. Orig. desig.

Only three species have been described, but according to Townes this is a moderately large genus. It is principally Neotropical, but two species are Nearctic.

nomene (Davis). N. Y., Colo.

Glypta nomene Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 370. ♀.

phoxopteridis (Weed). N. H. w. to B. C., s. to s.e. Ga., Ala., and n. Tex. Host: *Ancyliis comptana* (Froel.), *Grapholitha interstinctana* (Clem.), *G. molesta* (Bsk.), *Amorbia humerosana* Clem., *Choristoneura rosaceana* (Harris), *Platynota flavedana* Clem.? on *Solanum*, *P. rostrana* (Wlk.), tortricid on *Gleditsia*, *Psilocorsis quercicella* Clem., pyralid on ragweed.

Glypta phoxopteridis Weed, 1888. Ent. Amer. 4: 151. ♀.

Glypta leucozonata Ashmead, 1890 (1888). U. S. Natl. Mus., Proc. 12: 449. ♂.

Genus APOPHUA Morley

Apophua Morley, 1913. Fauna Brit. India, Hym., v. 3, pt. 1, p. 213.

Type-species: *Apophua carinata* Morley. Orig. desig.

Although only one Nearctic species is known, this is a fairly large Holarctic, Oriental, and Ethiopian genus.

Taxonomy: Cushman, 1933. Insecta Matsumurana 8: 20-23. — Momoi, 1965. Insecta Matsumurana 28: 80-81.

simplicipes (Cresson). Maine w. to s. B. C., s. to D. C., Tex., Utah, and Wash. Host: *Acleris minuta* (Rob.), *Archips argyrosipilus* (Wlk.), *Choristoneura rosaceana* (Harris), *Sparganothis putmanana* Free., tortricid on *Gleditsia*, *Ancylics comptana* (Froel.), *Exartema footianum* Clem., *E. inornatum* Clem., *Ennomos subsignarius* (Hbn.), *Malacosoma americanum* (F.), *Heterocampa bilineata* (Pack.), *Symmerista albifrons* (J. E. S.), *Zotheca tranquila* (Grt.), *Hemileuca* sp.

Glypta simplicipes Cresson, 1870. Amer. Ent. Soc., Trans. 3: 156. ♂, ♀.

Glypta aldrichii Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 370. ♂, ♀.

Glypta (*Glypta*) *rosaceanae* Viereck, 1926. Canad. Ent. 58: 55. ♂, ♀.

Genus GLYPTA Gravenhorst

Glypta Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 3.

Type-species: *Glypta sculpturata* Gravenhorst. Desig. by Westwood, 1840.

Conoblasta Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 165.

Type-species: *Glypta ceratites* Gravenhorst. Desig. by Viereck, 1914 from two species included by Woldstedt, 1877.

Diblastomorpha Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 165.

Type-species: *Glypta bicornis* Desvignes. By subsequent monotypy from inclusion by Woldstedt, 1877. The type-species is homonymous with *Glypta bicornis* Boie, which is regarded as a senior synonym.

Hemiephialtes Ashmead, 1906. U. S. Natl. Mus., Proc. 30: 177.

Type-species: *Hemiephialtes glyptus* Ashmead. Monotypic.

Glypta subg. *Foveoglypta* Hellen, 1915. Soc. pro Fauna et Flora Fenn., Acta 40 (6): 57.

Type-species: *Glypta* (*Foveoglypta*) *monstrosa* Hellen. Monotypic.

This is a very large genus. The greatest number of species is found in the Holarctic region and a few species occur in the Neotropical and Oriental regions. The hosts are larvae of Lepidoptera which conceal themselves when feeding, such as in leaf rolls, buds, cones, stems, etc.

Taxonomy: Momoi, 1965. Insecta Matsumurana 28: 81-82.

albiscutellaris Walsh. Ill.? The holotype was destroyed in the 1871 Chicago fire, and apparently no concerted effort has been made to identify the species since it was described.

Glypta albiscutellaris Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 127. ♂.

animosa Cresson. Conn. s. to N. C., w. to Mich.

Glypta animosa Cresson, 1870. Amer. Ent. Soc., Trans. 3: 154. ♀.

aprilis Viereck. Northeastern Kans.

Glypta aprilis Viereck, 1905. Kans. Acad. Sci., Trans. 19: 316. ♀.

areolata Viereck. Northern N. Mex.

Glypta areolata Viereck, 1903. In Skinner, Amer. Ent. Soc., Trans. 29: 89. ♀.

borealis Cresson. "Canada," Colo.

Glypta borealis Cresson, 1870. Amer. Ent. Soc., Trans. 3: 158. ♂.

brunneisigna Viereck. Northeastern Kans.

Glypta brunneisigna Viereck, 1905. Kans. Acad. Sci., Trans. 19: 316. ♀.

californica Provancher. Calif.

Glypta californica Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 117. ♀.

- canadensis* Cresson. Que., Maine, N. H., Vt., N. Y., Pa., Mich.
Glypta canadensis Cresson, 1870. Amer. Ent. Soc., Trans. 3: 157. ♀.
- caulicola* Cushman. N. J., s. Ont., and s.e. S. Dak. s. to Ga. and Kans. Host: *Gnorimoschema gallaesolidaginis* (Riley), *Epiblema scudderianum* (Clem.), *E. strenuanum* (Wlk.).
Glypta caulicola Cushman, 1933. U. S. Natl. Mus., Proc. 82 (14): 9. ♂, ♀.
- dakota* Cresson. "Dakota [Territory]."
Glypta Dakota Cresson, 1870. Amer. Ent. Soc., Trans. 3: 158. ♂, ♀.
- davisii* Dalla Torre. Northern Idaho.
Glypta longicauda Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 370. ♀. Preocc. by Hartig, 1838.
Glypta Davisii Dalla Torre, 1901. Cat. Hym., v. 3, p. 410. N. name for *longicauda* Davis.
- divaricata* (Say). Fla. The holotype was destroyed, and apparently no concerted effort has been made to identify the species from the original description.
Anomalon divaricatus Say, 1836. Boston Jour. Nat. Hist. 1: 244. Sex not indicated.
 Taxonomy: Cushman and Gahan, 1921. Ent. Soc. Wash., Proc. 23: 155.
- diversipes* Walsh. Ill.? The holotype was destroyed in the 1871 Chicago fire, and apparently no concerted effort has been made to identify the species since it was described.
Glypta diversipes Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 125. ♀.
- egregiafovea* Viereck. Ariz.
Glypta egregiafovea Viereck, 1905. Kans. Acad. Sci., Trans. 19: 292. ♀.
- erratica* Cresson. Vt. s. to n. Ga., w. to e. S. Dak.
Glypta erratica Cresson, 1870. Amer. Ent. Soc., Trans. 3: 152. ♂, ♀.
- evetrieae* Cushman. Western Mont., Wash., Oreg., w. Calif. Host: *Barbara colfaxiana taxifoliella* (Bsk.).
Glypta evetrieae Cushman, 1917. U. S. Natl. Mus., Proc. 53: 469. ♂, ♀.
- exartemae* Walley. N. Y., Ont. Host: *Exartema viburnana* McD.
Glypta exartemae Walley, 1934. Canad. Ent. 66: 235. ♂, ♀.
- fumiferanae* (Viereck). N. B. w. to B. C., s. to Pa., Wis., N. mex., Ariz., and n.w. Calif. Host: *Sciaphila duplex* (Wlsm.), *Dioryetria reniculella* (Grt.)?, *Acleris variana* (Fern.)?, *Choristoneura fumiferana* (Clem.), *C. lambertiana* (Bsk.), *C. occidentalis* Free., *C. pinus* Free., *C. retiniana* (Wlsm.), *Orygia pseudotsugata* McD.? *Melanolophia imitata* (Wlk.)? The few published records for this species as a parasite of *Choristoneura conflictana* (Wlk.) appear to be erroneous; all *Glypta* specimens I have seen which were reared from *C. conflictana* are *G. inversa* (Cresson), a few of which were misidentified as *G. fumiferanae*.
Conoblasta fumiferanae Viereck, 1912. U. S. Natl. Mus., Proc. 42: 148. ♂, ♀.
- Biology: Brown, 1947 (1946). Canad. Ent. 78: 138. —Jaynes, 1954. Jour. Econ. Ent. 47: 355. —Dodge, 1961. Canad. Ent. 93: 224.
- Morphology: Peck, 1937. Canad. Jour. Res., Sect. D (Zool. Sci.) 15: 245, 246, 248, 249, 251.
- haesitator* Gravenhorst. Southern B. C.; Eurasia. Introduced between 1937 and 1944 in N. S., P. E. I., Que., B. C. and Wash.; established according to McLeod (1962), but apparently only in B. C. Host: *Laspeyresia nigricana* (Steph.). The host listed was the target species for releases in North America.
Glypta haesitator Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 12. ♂, ♀.
Glypta haesitatrix Schulz, 1906. Spolia Hym., p. 103. Emend.
- Biology: Cameron, 1938. Bul. Ent. Res. 29: 282-296. —Wishart, 1939. Ent. Soc. Ontario, Ann. Rpt. 70: 69-71. —Fulton, 1947. Ent. Soc. Brit. Columbia, Proc. 43: 25.
- idahoensis* Davis. Northern Idaho, s.e. Wash., w. Oreg.
Glypta idahoensis Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 370. ♀.
- impressa* Davis. Northeastern Ill.
Glypta impressa Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 371. ♂, ♀.
- infumata* Walley. Que., Alta.
Glypta infumata Walley, 1934. Canad. Ent. 66: 236. ♀.

- inversa* Cresson. Vt. w. to interior Alaska, s. to Conn., Mich., N. Mex., and n.e. Calif. Host: *Archips argyrosipilus* (Wlk.), *Choristoneura conflictana* (Wlk.), *Sparganothis putmanana* Free., *Malacosoma dissitia* (Hbn.), *M. californicum fragile* (Str.).
Glypta inversa Cresson, 1870. Amer. Ent. Soc., Trans. 3: 153. ♀.
- kukakensis* Ashmead. Southwestern Alaska.
Glypta kukakensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 201. ♀.
- longiventris* Cresson. Que., N. Y., Ill.
Glypta longiventris Cresson, 1870. Amer. Ent. Soc., Trans. 3: 154. ♂.
- macra* Cresson. Que., Maine, N. Y., Ont., Colo., Alta.
Glypta macra Cresson, 1870. Amer. Ent. Soc., Trans. 3: 158. ♀.
Glypta coloradensis Cresson, 1870. Amer. Ent. Soc., Trans. 3: 158. ♂.
Glypta ruficornis Provancher, 1873 (Dec.). Nat. Canad. 5: 473. ♂. Preocc. by Walsh, 1873 (June?).
- militaris* Cresson. Ill.
Glypta militaris Cresson, 1870. Amer. Ent. Soc., Trans. 3: 154. ♀.
- monita* Cresson. W. Va.
Glypta monita Cresson, 1870. Amer. Ent. Soc., Trans. 3: 155. ♀.
- mutica* Cushman. Conn. s. to N. C., w. to Iowa. Host: *Paralobesia viteana* (Clem.), *Janus integer* (Nort.)?
Glypta mutica Cushman, 1919. U. S. Natl. Mus., Proc. 55: 540. ♂, ♀.
- popofensis* Ashmead. Southwestern Alaska. The male syntype represents a different species than the female syntype.
Glypta popofensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 201. ♂, ♀.
- pulchripes* Cresson. W. Va.
Glypta pulchripes Cresson, 1870. Amer. Ent. Soc., Trans. 3: 153. ♀.
- rubripes* Cresson. N. Y., N. J., w. N. C., "Canada," Mo.
Glypta rubripes Cresson, 1870. Amer. Ent. Soc., Trans. 3: 156. ♂, ♀.
- ruficornis* Walsh. Ill.? The holotype was destroyed in the 1871 Chicago fire, and apparently no concerted effort has been made to identify the species since it was described.
Glypta ruficornis Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 129. ♂.
- rufipleuralis* Walsh. Ill.? The holotype was destroyed in the 1871 Chicago fire, and apparently no concerted effort has been made to identify the species since it was described.
Glypta rufipleuralis Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 125. ♂.
- rufiscutellaris* Cresson. Mass., Ont., Alta., and Wash. s. to Ga., Tex., Utah., and s.w. Calif.; Brazil?, Uruguay?, Australia? Host: *Epiblema strenuatum* (Wlk.), *Grapholitha molesta* (Bsk.), *G. packardi* (Zell.), *G. prunivora* (Walsh), *Laspeyresia caryana* (Fitch), *L. pomonella* (L.), *Melissopus latiferreanus* (Wlsm.), *Croesia semipurpurana* (Kft.).
Glypta rufiscutellaris Cresson, 1870. Amer. Ent. Soc., Trans. 3: 153. ♂, ♀.
Glypta brevis Cushman, 1915. U. S. Natl. Mus., Proc. 48: 510. ♀.
- Biology: Allen and Lott, 1930. Ent. Soc. Wash., Proc. 32: 135-136. — Driggers, 1930. N. J. Agr. Expt. Sta. Bul. 510: 4-19. — Crawford, 1933. N. Y. Agr. Expt. Sta. Bul. 217: 1-29. — Merritt, 1933. Jour. Econ. Ent. 26: 788-792. — Pepper and Driggers, 1934. Ent. Soc. Amer., Ann. 27: 594-596. — Putman, 1935. Canad. Ent. 67: 46-48. Individual larvae consume two to five host larvae. — Van Steenburgh, 1935. Ent. Soc. Ontario, Ann. Rpt. 65: 69-72. — Haden, 1935. Del. Univ. Agr. Expt. Sta. Bul. 194: 11-42. — Montgomery, 1935. Jour. Econ. Ent. 28: 371-376.
- Morphology: Peck, 1937. Canad. Jour. Res., Sect. D (Zool. Sci.) 15: 245, 246, 248, 249, 251.
- rufofasciata* Cresson. Que., Maine, R. I., Conn., N. Y., Ont., Ill.
Glypta rufofasciata Cresson, 1870. Amer. Ent. Soc., Trans. 3: 158. ♂.
- succineipennis* Viereck. Western Kans.
Glypta succineipennis Viereck, 1905. Kans. Acad. Sci., Trans. 19: 315. ♀.
- tricincta* Provancher. Eastern Que.
Glypta tricincta Provancher, 1890. Nat. Canad. 19: 248. ♂, ♀.
- truncata* (Provancher). Que., N. Y.
Clitostyga truncata Provancher, 1883. Nat. Canad. 14: 13. ♀.

tuberculifrons Cresson. Ill.*Glypta tuberculifrons* Cresson, 1870. Amer. Ent. Soc., Trans. 3: 152. ♂, ♀.**varipes** Cresson. Wyo., Colo., B. C., Wash.*Glypta varipes* Cresson, 1865. Ent. Soc. Phila., Proc. 4: 267. ♀.*Glypta variipes* Dalla Torre, 1901. Cat. Hym., v. 3, p. 417. Emend.**virginiensis** Cresson. N. Y., N. J., Pa., W. Va.*Glypta virginiensis* Cresson, 1870. Amer. Ent. Soc., Trans. 3: 157. ♀.**vulgaris** Cresson. Mass.*Glypta vulgaris* Cresson, 1870. Amer. Ent. Soc., Trans. 3: 154. ♂, ♀.**xanthogastra** Cameron. Colo., N. Mex., Ariz.*Glypta xanthogastra* Cameron, 1905. Invertebrata Pacifica 1: 128. ♀.**Genus CEPHALOGLYPTA** Obertel*Cephaloglypta* Obertel, 1956. Zool. Listy 5: 139.Type-species: *Cephaloglypta excavata* Obertel. Monotypic and orig. desig.

This genus is Palearctic; only two species are known.

laricis Momoi. Northern Japan. Introduced in N. B. in 1973; the fact that only 29 adults were released would seem to have precluded establishment. Host: *Choristoneura diversana* (Hbn.), *Ptycholomoides aeriferanus* (H.-S.). The target species for the release in N. B. was *Choristoneura fumiferana* (Clem.).*Cephaloglypta laricis* Momoi, 1963. Insecta Matsumurana 25: 104. ♂, ♀.**murinanae** (Franz). Europe. Introduced in Ont. in 1950, 1955, and 1956, apparently without becoming established. Host: *Choristoneura murinana* (Hbn.). The target species for releases in Ont. was *Choristoneura fumiferana* (Clem.).*Glypta murinanae* Franz, 1941. Ztschr. f. Angew. Ent. 27: 594. ♂, ♀.*Glypta murinanae* Bauer, 1942. Mitt. aus der Ent. Gesell. zu Halle 19: 11. ♂, ♀. Preocc. by Franz, 1941; n. syn.*Cephaloglypta excavata* Obertel, 1956. Zool. Listy 5: 140. ♂, ♀. N. syn.

Biology: Bucher, 1953. Canad. Jour. Agr. Sci. 33: 463. —Franz and Wellenstein, 1958. Ztschr.

f. Pflanzenkrank. 65: 21. —Capek, 1961. Ztschr. f. Angew. Ent. 48: 88. —Capek, 1963.

Ztschr. f. Angew. Ent. 51: 138. —Zwoelfer, 1963. Ztschr. f. Angew. Ent. 51: 348.

TRIBE LISSONOTANINI

This is a very large tribe. Twenty-six genera were recognized by Townes (1970); ten of them are represented by Nearctic species. The majority of the Nearctic species parasitize larvae of Lepidoptera which conceal themselves when feeding, such as in cones, buds, stems, leaf rolls, etc. Drs. H. K. and M. C. Townes expect to publish a revision of the Nearctic species in 1978.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 17-45 (genera of world).

Genus MNIOES Townes*Mnioes* Townes, 1946. Bol. Ent. Venezolana 5: 58.Type-species: *Lampronota jucunda* Cresson. Monotypic and orig. desig.

This is a large genus which is restricted to the New World; all but one of the species are Neotropical.

lunatus Kennedy. Md., D. C., Va., e. N. C., S. C., s. Ind., Ky., Tenn., s.e. Okla., Colo.*Mnioes lunatus* Kennedy, 1966. Mich. Ent. 1: 17. ♂, ♀.**Genus LISSONOTA** Gravenhorst*Lissonota* Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 30.

Type-species: *Ichneumon setosus* Geoffroy. Desig. by Curtis, 1932. Curtis designated *I. setosus* as the type-species of *Lampronota*, his replacement name for *Lissonota*.

Lampronota Curtis, 1832. Brit. Ent., v. 9, pl. 407. Unnecessary n. name for *Lissonota* Gravenhorst, which is not preocc. by *Lissonotus* Dalman, 1817.

Stilbonota Stephens, 1835. Illus. Brit. Ent., v. 7, p. 126.

Type-species: *Lissonota sulphurifera* Gravenhorst. Desig. by Viereck, 1914.

Meniscus Schiodte, 1839. Mag. Zool., Ins. 9: 10

Type-species: *Ichneumon catenator* Panzer. Desig. by Viereck, 1914.

Asynoda Gistel, 1848. Naturgesch. Thierr. f. hoeh. Schul., p. ix. N. name for "*Lissonotus* Grav[enhorst]."

Bothynophrys Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 166.

Type-species: *Ichneumon catenator* Panzer. By subsequent monotypy from inclusion by Woldstedt, 1877.

Ensinnus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 167. Preocc. by Thomson, 1859.

Type-species: *Lissonota dubia* Holmgren. Desig. by Viereck, 1914 from four species included by Schmiedeknecht, 1888.

Amersibia Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 167, 214, 218. N. name for *Meniscus* Schiodte.

Bathycetes Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 167.

Type-species: *Ichneumon catenator* Panzer. Monotypically included and desig. by Schmiedeknecht, 1888.

Opisorhyssa Kriechbaumer, 1890. Wien. Mus. der Naturgesch., Ann. 5: 488.

Type-species: *Opisorhyssa flavopicta* Kriechbaumer. Monotypic. The type-species was described from "Amer. Sept. (?)", but is actually not a Nearctic species (personal commun., Dr. H. K. Townes, 1977).

Ctenopimpla Cameron, 1899. Manchester Lit. and Phil. Soc., Mem. and Proc. 43 (3): 189. Preocc. by Kriechbaumer, 1898.

Type-species: *Ctenopimpla albomaculata* Cameron. Monotypic.

Pimplopterus Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 52.

Type-species: *Pimplopterus alaskensis* Ashmead. Monotypic and orig. desig.

Harrimaniella Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 52. Transfer from synonymy with *Cryptopimpla* was advised by H. K. Townes (1976, personal communication).

Type-species: *Harrimaniella yukakensis* Ashmead. Monotypic and orig. desig.

Echthrodoxa Schmiedeknecht, 1900. Zool. Jahrb., Abt. f. System., Geog., u. Biol. Tiere 13: 328.

Type-species: *Lissonota conflagrata* Gravenhorst. Desig. by Viereck, 1914.

Anarthronota Schmiedeknecht, 1900. Zool. Jahrb., Abt. f. System., Geog., u. Biol. Tiere 13: 330.

Type-species: *Lissonota manca* Brauns. Desig. by Viereck, 1914.

Campocinetia Schmiedeknecht, 1900. Zool. Jahrb., Abt. f. System., Geog., u. Biol. Tiere 13: 343.

Type-species: *Campocinetia varicornis* Schmiedeknecht. Monotypic.

Adelopimpla Schulz, 1906. Spolia Hym., p. 116. N. name for *Ctenopimpla* Cameron.

Stilbopoides Rohwer, 1913. Ent. Soc. Wash., Proc. 15: 183.

Type-species: *Stilbopoides maculiventris* Rohwer. Orig. desig.

Lophantium Clement, 1925. Konowia 4: 400.

Type-species: *Lissonota clypealis* Thomson. Orig. desig.

Gibbonota Heinrich, 1937. Polskie Pismo Ent. 14-15: 354.

Type-species: *Gibbonota duplanae* Heinrich. Monotypic and orig. desig.

Lissonotoides Benoit, 1955. Mus. du Congo Belge, Ann. Zool. 38: 29.

Type-species: *Lissonotoides pectinatus* Benoit. Monotypic and orig. desig.

This is a very large genus. According to Townes (1970) it is best represented in the Holarctic region, but has a nearly worldwide distribution.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 25-27 (new generic synonyms). *acrobasidis* (Ashmead). Southwestern Ind.

Polysphincta phycitis Riley, 1891. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 464. Nomen nudum.

Eusimus(!) *acrobasidis* Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 212. ♂. The type-locality is Paxtons, Sullivan Co., Ind. (not "Paxton, Ohio").

aleutiana (Cresson), n. comb. Southwestern Alaska.

Mesoleius? aleutianus Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 371. ♂.

argyresthia (Walley), n. comb. N. S., N. B., Que., Ont., Wis. Host: *Argyresthia laricella* Kft.

Pimplopterus argyresthia Walley, 1961. Canad. Ent. 93: 1. ♂, ♀.

bibrevicincta (Davis), N. Y., Mich.

Lampronota bibrevicincta Davis, 1895. Amer. Ent. Soc., Trans. 22: 31. ♀.

breviventris (Walsh). Ill.? The synonymy and transfer from unplaced species of Ichneumonidae is based upon advice received from Drs. M. C. and H. K. Townes, (personal communications, 1977).

Lampronota pictiventris Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 119. ♂.

Lampronota breviventrif Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 120. ♀.

brunnea Cresson. Maine w. to Oreg., s. to Va., Kans., and Calif. Host: *Achatodes zae* (Harris),

Luperina stipata (Morr.), *Papaipema cataphracta* Grt., *P. nebris* (Gn.).

Lissonota brunnea Cresson, 1868. Canad. Ent. 1: 37. ♀.

Nadia apalachia Viereck, 1902. Canad. Ent. 34: 68. ♂.

Biology: Decker, 1930; 1931. Iowa Agr. Expt. Sta., Res. Bul. 125: 160; 143: 345. — Decker, 1935. Iowa State Col. Jour. Sci. 9: 572.

coloradensis (Cresson). Man., Sask., Colo., Alta., B. C.

Lampronota coloradensis Cresson, 1870. Amer. Ent. Soc., Trans. 3: 165. ♀.

conocola Rohwer, restored comb. Nebr., Ariz., B. C., Oreg., Calif. Host: *Tinea defectella* Zell.,

Eucosma recissoriana Heinr., *Rhyacionia neomexicana* (Dyar).

Lissonota conocola Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 222. ♂, ♀.

dakrumae (Ashmead), n. comb. Calif. Host: *Cisthene faustinula* f. *fusca* Str., *Holcocera* sp., *Dioryctria xanthenobares* Dyar.

Meniscus dakrumae Riley, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 464. Nomen nudum.

Meniscus dakrumae Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 212. ♀. According to notes on file in the U. S. Natl. Museum the syntypes were reared from a species of *Holcocera* feeding on *Lecanium* and from *Cisthene faustinula* f. *fusca* Str. feeding on lichens.

Lissonota dioryctriae Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 221. ♀.

davisi (Townes), n. comb. Southern Mich.

Lampronota angusta Davis, 1895. Amer. Ent. Soc., Trans. 22: 30. ♀. Preocc. by Taschenberg, 1863.

Pimplopterus davisi Townes, 1944. Amer. Ent. Soc., Mem. 11: 452. N. name for

Lampronota angusta Davis.

electra Viereck, restored comb. Northern N. Mex.

Lissonota electra Viereck, 1903. In Skinner, Amer. Ent. Soc., Trans. 29: 84. ♀.

evetriae Rohwer, restored comb. Central Colo. Host: *Holcocera* sp.?, *Barbara colfariana taxifoliella* (Bsk.).

Lissonota evetriae Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 220. ♂, ♀. The type-locality is Cheyenne Mountain, Colo. (not "Cheyenne, Mountains, Colorado").

exigua (Cresson), n. comb. W. Va.

Lampronota exigua Cresson, 1870. Amer. Ent. Soc., Trans. 3: 164. ♀.

fenella Viereck, n. comb. Northern N. Mex.

Lissonota fenella Viereck, 1903. In Skinner, Amer. Ent. Soc., Trans. 29: 83. ♀.

Harrimaniella minor Viereck, 1903. In Skinner, Amer. Ent. Soc., Trans. 29: 87. ♂.

frigida Cresson. Que. w. to s.w. Alaska, s. to Va. and Tex. Host: *Crambus vulgivagellus* Clem. *Lissonota frigida* Cresson, 1868. Canad. Ent. 1: 36. ♀.

Lampronota exilis Cresson, 1870. Amer. Ent. Soc., Trans. 3: 165. ♂, ♀.

Lampronota imitatrix Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 121. ♀.

Pimplopterus alaskensis Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 52. ♀.

Lissonota alaskensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 197. ♀. Preocc. in

Lissonota by Ashmead, 1900.

Harrimaniella paeneimitatrix Viereck, 1905. Kans. Acad. Sci., Trans. 19: 317. ♀.

- Lissonota sakala* Cushman, 1942. U. S. Natl. Mus., Proc. 92: 287. N. name for *L. alaskensis* Ashmead.
- hilaris** (Cresson), n. comb. Calif.
Lampronota hilaris Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 378. ♀.
- inconstans** Cushman, restored comb. Western Oreg., s.w. Calif. Host: *Melissopus latiferreanus* (Wlsm.).
Lissonota inconstans Cushman, 1940. Ent. Soc. Wash., Proc. 42: 157. ♂, ♀.
- interpellata** (Walsh), n. comb. Ill.? The holotype was destroyed in the 1871 Chicago fire.
Lampronota interpellata Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 118. ♂.
- jacobi** (Walley), n. comb. Southern B. C.
Asphragis jacobi Walley, 1942. Canad. Ent. 74: 234. ♂, ♀.
- laevigata** (Cresson). Que., N. Y., Ont., Alta.
Lampronota laevigata Cresson, 1870. Amer. Ent. Soc. Trans. 3: 162. ♀.
Lampronota levigata Dalla Torre, 1901. Cat. Hym., v. 3, p. 516. Emend.
- macra** (Cresson), n. comb. Del.
Lampronota macra Cresson, 1870. Amer. Ent. Soc., Trans. 3: 163. ♂.
- maculiventris** (Rohwer), n. comb. Western Mont.
Stilbopoides maculiventris Rohwer, 1914. Ent. Soc. Wash., Proc. 15: 183. ♂, ♀.
- montana** (Cresson). Newfoundland (Labrador) w. to Alaska, s. to Va., N. Mex., and Nev. Host:
Crymodes devastator (Brace), *Protagrotis obscurus* (B. and M.).
Lampronota montana Cresson, 1865. Ent. Soc. Phila., Proc. 4: 267. ♀.
Eretastes consimilis Cresson, 1865. Ent. Soc. Phila., Proc. 4: 278. ♂.
Lampronota varia Cresson, 1870. Amer. Ent. Soc., Trans. 3: 164. ♂. N. syn.
Lampronota americana Cresson, 1870. Amer. Ent. Soc., Trans. 3: 164. ♀. N. syn.
Lampronota amphimilaena Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 117. ♂. N. syn.
Lampronota gelida Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 377. ♂. N. syn.
Lampronota vivida Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 378. ♂. N. syn.
Lampronota Edwardsii Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 379. ♀. N. syn.
Lampronota puritana Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 450. ♀. N. syn.
Hanmaniella(!) *relativa* Viereck, 1902. Canad. Ent. 34: 67. ♂. N. syn.
Echthrodoca clypearia Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 199. ♂.
Harrimaniella ariel Viereck, 1903. In Skinner, Amer. Ent. Soc., Trans. 29: 86. ♂.
- nigricornis** (Provancher). Que., N. Y., N. Mex., Oreg. Host: *Eucosma bobana* Kft.
Lampronota nigricornis Provancher, 1873. Nat. Canad. 5: 476. ♀.
- nigripes** (Provancher). Southeastern Ont.
Lampronota nigripes Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 118. ♀.
- parallela** Gravenhorst. Newfoundland (Labrador); Eurasia.
Lissonota parallela Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 79. ♂, ♀.
- parva** (Cresson). Maine w. to B. C., s. to D. C., Colo., and Calif.
Lampronota parva Cresson, 1870. Amer. Ent. Soc., Trans. 3: 163. ♀.
- penuria** (Davis), n. comb. "Canada."
Aperileptus penuria Davis, 1897. Amer. Ent. Soc., Trans. 24: 244. ♂.
- prionoxysti** (Rohwer), n. comb. Northern Va. Host: *Prionoxystus* sp. in *Castanea dentata*.
Amersibia prionoxysti Rohwer, 1915. U. S. Natl. Mus., Proc. 49: 224. ♂, ♀.
- punctata** (Cresson). Que. s. to N. C., w. to Colo.
Lampronota punctata Cresson, 1870. Amer. Ent. Soc., Trans. 3: 160 (key), 163. ♀. The alternate spelling "*punctulata*" which appeared on p. 163 was rejected in favor of *punctata* by Cushman (1925).
Lampronota albifacies Provancher, 1873. Nat. Canad. 5: 475. ♂.
- recurvariae** Cushman, restored comb. Maine, N. Y.
Lissonota recurvariae Cushman, 1935. Wash. Acad. Sci., Jour. 25: 552. ♂, ♀.
- rubrica** (Cresson). Que. s. to Ga., w. to Iowa.
Lampronota rubrica Cresson, 1870. Amer. Ent. Soc., Trans. 3: 165. ♀.
Lampronota humeralis Provancher, 1873. Nat. Canad. 5: 476. "♀" = ♂.

- Lissonota philipi* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 314. ♂.
- scutellaris** (Cresson). Que., Mass., N. Y., N. J., Ont., W. Va., Ill., Minn., Mo., Kans., n. N. Mex.
Host: *Synanthedon tipuliformis* (Clerck), *Filatima pseudoacaciella* (Chamb.).
Lampronota scutellaris Cresson, 1870. Amer. Ent. Soc., Trans. 3: 161. ♀.
Meniscus Crevieri Provancher, 1874. Nat. Canad. 6: 29. ♀.
Bathycetes nidia Viereck, 1903. In Skinner, Amer. Ent. Soc., Trans. 29: 85. ♀.
- segnis** (Cresson), n. comb. Southwestern B. C.
Lampronota segnis Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 378. ♂.
- sesiavora** (Rohwer), n. comb. R. I., N. Y., N. J., Md., Va. Host: *Synanthedon pyri* (Harris), *Grapholitha molesta* (Bsk.)?
Stilbopoides sesiavora Rohwer, 1914. Ent. Soc. Wash., Proc. 15: 184. ♂, ♀.
- sexcincta** (Ashmead), n. comb. Colo.
Pimpla sexcincta Ashmead, 1900. Colo. Biol. Assoc., Bul. 1: 24. ♂.
- Taxonomy: Walkley, 1967. In Krombein et al., U. S. Dept. Agr., Agr. Monog. 2, sup. 2, p. 172.
- tegularis** (Cresson). Que. s. to N. C., w. to Minn., Kans., and Tex. Ecology: Occurs in fall on flowers of *Solidago*. Host: Tortricid leaf roller on *Solidago*?, *Oligia fragilinea* (Grt.)? Incorrectly placed in *Alloplasta* by Barron (1975).
Lissonota rufipes Cresson, 1868. Canad. Ent. 1: 36. ♀. Preocc. by Brischke, 1867.
Lampronota tegularis Cresson, 1870. Amer. Ent. Soc., Trans. 3: 163. ♂.
Arenetra Quebecensis Provancher, 1875. Nat. Canad. 7: 141. ♂.
Lampronota Provancheri Dalla Torre, 1901. Cat. Hym., v. 3, p. 518. N. name for *Lampronota rufipes* Provancher; because *Lampronota rufipes* Provancher is Provancher's (1880 and 1883) lapsus for *Lampronota rufipes* (Cresson) (cf. Provancher, 1873), the name *provancheri* is unavailable.
- Taxonomy: Provancher, 1873. Nat. Canad. 5: 476. —Barron, 1975. Nat. Canad. 102: 539.
- tropica** (Davis), n. comb. Colo., s. Calif.
Aperileptus tropicus Davis, 1897. Amer. Ent. Soc., Trans. 24: 244. ♂.
- yakutatensis** Ashmead, n. comb. Southeastern Alaska.
Pimplopterus yakutatensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 197. ♀.
- yukakensis** (Ashmead). Southwestern Alaska.
Harrimaniella yukakensis Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 52. ♂.
Harrimaniella kukakensis (!) Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 198.
Lissonota kukakensis Cushman, 1942. U. S. Natl. Mus., Proc. 92: 287. Unjustified emend.

Genus LOXODOCUS Townes

- Loxodocus* Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 27.
Type-species: *Lampronota pallorana* Davis. Orig. desig.
- This is a moderate sized genus of Nearctic and Neotropic (Mexico and probably Central America) distribution. Most of the species are Neotropic; at least half of them are undescribed.
- palloranus** (Davis). Mass., N. J., Pa., N. C.
Lampronota pallorana Davis, 1895. Amer. Ent. Soc., Trans. 22: 31. ♀.

Genus ALLOPLASTA Foerster

- Alloplasta* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 167.
Type-species: *Lissonota murina* Gravenhorst. By subsequent monotypy from inclusion by Woldstedt, 1877. The type-species is regarded as a synonym of *A. piceator piceator* (Thunberg).
- Asymmetus* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 200.
Type-species: *Asymmetus iridescens* Davis. Desig. by Viereck, 1914 from two species included by Davis, 1898.
- Trysicampe* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 207.
Type-species: *Ichneumon piceator* Thunberg. Monotypically included and desig. by Perkins, 1962.

Trichopimpla Cameron, 1903. Ztschr. System. Hym. Dipt. 3: 303.

Type-species: *Trichopimpla pilosa* Cameron. Monotypic.

This is a small Holarctic and Oriental genus.

piceator bullata (Davis). Pa., Alta., Mont., Idaho, Wash. *A. piceator piceator* (Thunberg) is Eurasian. Treatment of *bullata* as a subspecies of *piceator* is based upon unpublished information provided by Dr. H. K. Townes.

Lampronota bullata Davis, 1895. Amer. Ent. Soc., Trans. 22: 30. ♀.

superba iridescens (Davis). Nev.

Asymmictus iridescens Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 325. "♀" = ♂.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 29.

superba superba (Provancher). Que., Maine, N. H., Vt., Conn., N. Y., Wis., Tex., Sask., Colo.?

Meniscus superbus Provancher, 1874. Nat. Canad. 6: 30. ♀.

Genus ARENETRA Holmgren

Lasiops Holmgren, 1856 (1854). Svenska Vetensk.-Akad. Handl. 75: 68. Preocc. by Meigen, 1838.

Type-species: *Tryphon pilosella* Gravenhorst. Monotypic.

Arenetra Holmgren, 1859. Svenska Vetensk.-Akad., Öfvers. af ... Forhandl. 16: 127. N. name for *Lasiops* Holmgren.

This is a moderate sized Holarctic genus. The adults occur in late winter through mid-spring or in mid to late fall.

Taxonomy: Townes and Townes, 1951. In Muesebeck et al., U. S. Dept. Agr., Agr. Monog. 2: 310.

canadensis Cresson. Southeastern Ont., Wis., w. Iowa, e. S. Dak., e. Wyo., Colo., N. Mex., s. Idaho, e. Wash.

Arenetra canadensis Cresson, 1868. Canad. Ent. 1: 36. ♂.

hirsutula Walley, revised status. Southern Mich., s.e. Minn., s. Sask. Resurrection from synonymy with *canadensis* based upon unpublished information provided by Dr. H. K. Townes.

Arenetra hirsutula Walley, 1931. Canad. Ent. 63: 169. ♂.

leucotaenia Viereck, revised status. Mass., N. Y., Md., D. C., n. Va., n.e. Kans. Resurrection from synonymy with *nigrita* based upon unpublished information provided by Dr. H. K. Townes.

Arenetra leucotaenia Viereck, 1905. Kans. Acad. Sci., Trans. 19: 318. ♀.

nigrita Cresson. N. H., Mass., Conn., N. J., Pa., n. Va., s. Wis., n. Miss., Iowa, e. S. Dak.

Arenetra nigrita Cresson, 1870. Amer. Ent. Soc., Trans. 3: 159. ♂, ♀.

pallipes Harrington, revised status. Southeastern and n. Idaho, s.w. B. C., e. Wash., w. Oreg. Resurrection from synonymy with *nigrita* based upon unpublished information provided by Dr. H. K. Townes.

Arenetra pallipes Harrington, 1894. Canad. Ent. 26: 250. ♂.

Arenetra pallidipes Dalla Torre, 1901. Cat. Hym., v. 3, p. 313. Unjustified emend.

rufipes Cresson, revised status. Que. w. to Alaska, s to s.e. N. Y., S. Dak., N. Mex., s. Idaho, and s. Oreg. Host: *Euxoa* sp. Resurrection from synonymy with *nigrita* based upon unpublished information provided by Dr. H. K. Townes.

Arenetra rufipes Cresson, 1870. Amer. Ent. Soc., Trans. 3: 159. ♀.

Arenetra vernalis Walley, 1931. Canad. Ent. 63: 171. ♀. N. syn.; identification labels of Dr. H. K. Townes on specimens in the U. S. Natl. Museum collection indicate that he will be treating *vernalis* as a sympatric subspecies of *rufipes*.

UNPLACED TAXA OF ARENETRA

In the forthcoming revision of Drs. H. K. and M. C. Townes, the names below will presumably be suppressed as synonyms of one or two of the *Arenetra* species listed above (cf. Townes and Townes, 1951).

Taxonomy: Townes and Townes, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 310.

Arenetra occulta Walley, 1931. Canad. Ent. 63: 170. ♂. Southwestern B. C.

Arenetra ventralis Cresson, 1870. Amer. Ent. Soc., Trans. 3: 160. ♂. N. Y.

Genus CRYPTOPIMLA Taschenberg

Cryptopimpla Taschenberg, 1863. Ztschr. f. die Gesam. Naturw. [Halle] 21: 292.

Type-species: *Phytodietus blandus* Gravenhorst. Desig. by Viereck, 1914.

Aphanodon Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 166.

Type-species: *Phytodietus errabundus* Gravenhorst. By subsequent monotypy from inclusion by Schmiedeknecht, 1888.

Xenacis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 167.

Type-species: *Lissonota caligata* Gravenhorst. By subsequent monotypy from inclusion by Brischke, 1880.

Xenocornia Schmiedeknecht, 1900. Zool. Jahrb., Abt. f. System. 13: 334.

Type-species: *Xenocornia solitaria* Schmiedeknecht. Monotypic.

Trevoria Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 50.

Type-species: *Trevoria yukatensis* Ashmead. Monotypic and orig. desig.

Fintona Cameron, 1909. Bombay Nat. Hist. Soc., Jour. 19: 726.

Type-species: *Fintona nigripalpis* Cameron. Monotypic.

This is a moderate-sized genus of Holarctic, Oriental, and Ethiopian distribution. It is best represented in the Palearctic Region.

blanda jocosa (Cresson), n. status. Que. s. to W. Va., w. to Ill. *C. blanda blanda* (Gravenhorst) is European; treatment of *jocosa* as a subspecies of *blanda* is based upon unpublished information provided by Dr. H. K. Townes.

Lampronota? jocosa Cresson, 1870. Amer. Ent. Soc., Trans. 3: 162. ♂.

Lampronota agilis Cresson, 1870. Amer. Ent. Soc., Trans. 3: 164. ♀.

Mesoleptus angustus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 96. ♂, ♀.

Tryphon fractus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 101. ♂.

Polyblastus decoratus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 107.

"♀" = ♂.

Polyblastus inornatus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 108. ♀.

genalis obscurella (Cresson), n. status. Que., w. N. C., Wash., Calif. *C. genalis genalis* (Thomson) is European; treatment of *obscurella* as a subspecies of *genalis* is based upon unpublished information provided by Dr. H. K. Townes.

Phytodietus obscurellus Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 379. ♀.

Aphanodon luctuosus Walley, 1934. Canad. Ent. 66: 237. ♂, ♀.

pleuralis (Cresson). Que. s. to N. C., w. to Minn., Mo., and Tex. Host: *Argyrotaenia velutinana* (Wlk.). Generic placement on advise from H. K. Townes (1976, personal commun.).

Lampronota pleuralis Cresson, 1870. Amer. Ent. Soc., Trans. 3: 161. ♂, ♀.

Lampronota occidentalis Cresson, 1870. Amer. Ent. Soc., Trans. 3: 161. ♀.

Lampronota insita Cresson, 1870. Amer. Ent. Soc., Trans. 3: 162. ♀.

Lampronota pulchella Cresson, 1870. Amer. Ent. Soc., Trans. 3: 162. ♂.

Lissonota cressoni Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22:

314. Unnecessarily proposed n. name for *Lampronota occidentalis* Cresson.

yukatensis (Ashmead). Southeastern Alaska.

Trevoria yukatensis Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 50. ♂.

Trevoria yakutatensis (!) Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 198.

Trevoria yakutatensis Cushman, 1942. U. S. Natl. Mus., Proc. 92: 287. Unjustified emend.

Genus ISOMERIS Townes

Isomeris Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 35.

Type-species: *Lampronota marginata* Provancher. Monotypic and orig. desig.

This is a small Neotropical and Nearctic genus.

marginata (Provancher). Que., R. I., N. Y., Pa., Ont., W. Va. Host: *Trichotaphe levisella* Fyles. *Lampronota marginata* Provancher, 1873. Nat. Canad. 5: 474. ♀.

Genus SYZEUCTUS Foerster

Diceratops Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 167.

Type-species: *Pimpla bicornis* Gravenhorst. Monotypically included and desig. by Schmiedeknecht, 1888.

Syzeuctus foersteri, 1868. Naturh. Ver. Rheinlande, Verh. 25: 167.

Type-species: *Ichneumon maculatorius* Fabricius. Monotypically included and desig. by Schmiedeknecht, 1888.

Syzeucta Thomson, 1889. Opusc. Ent. 13: 1415. Emend.

Meyva Cameron, 1899. Manchester Lit. and Phil. Soc., Mem. and Proc. 43 (3): 191.

Type-species: *Meyva villosa* Cameron. Monotypic.

Rhynchotrevoria Cameron, 1906. So. African Mus., Ann. 5: 125.

Type-species: *Rhynchotrevoria rostrata* Cameron. Monotypic.

Ephialtina Szepligeti, 1908. In Sjostedt, Kilimandjaro-Meru Exped., v. 8, p. 74.

Type-species: *Ephialtina apicalis* Szepligeti. Monotypic.

Leptoglyphis Brethes, 1927. Ent. Mitt. 16: 39.

Type-species: *Leptoglyphis minasensis* Brethes. Monotypic.

Paratanera Rao, 1953. Indian Forest Rec., New Ser., Ent. 8: 171.

Type-species: *Paratanera indica* Rao. Monotypic and orig. desig.

This is a large genus of Neotropic, Holarctic, Oriental, and Ethiopian distribution. Most of the species are tropical.

comptus (Davis). Que. w. to Iowa, s. to n. Ga. and e. Kans.

Meniscus comptus Davis, 1894. Canad. Ent. 26: 322. ♀.

elegans (Cresson). Maine s. to Fla., w. to Minn. and Mo. Host: *Tetralopha apastella* (Hulst), *T. asperatella* (Clem.), *T. robustella* Zell.

Meniscus elegans Cresson, 1870. Amer. Ent. Soc., Trans. 3: 165. ♂, ♀.

Meniscus Slossonae Davis, 1894. Canad. Ent. 26: 322. ♀.

epischniae epischniae Cushman. Southern Oreg., n. Calif. Host: *Pima granitella* (Rag.).

Syzeuctus epischniae Cushman, 1926. U. S. Natl. Mus., Proc. 67 (23): 9. ♂, ♀.

epischniae sigmoidalis Cushman, n. status. Eastern Que. Treatment of *sigmoidalis* as a subspecies of *epischniae* is based upon unpublished information supplied by Dr. H. K. Townes.

Syzeuctus sigmoidalis Cushman, 1926. U. S. Natl. Mus., Proc. 67 (23): 8. ♂, ♀.

eximius Walley. Northwestern Iowa, s. Man., Colo., n.e. Oreg., Nev.; Mexico.

Syzeuctus eximius Walley, 1934. Canad. Ent. 66: 238. ♂, ♀.

Genus EUDELEBOEA Lopez Cristobal

Eudeleboea Lopez Cristobal, 1935. La Plata Univ. Nac., Facultad de Agron., Rev. 20: 156.

Type-species: *Eudeleboea lopezi* Lopez Cristobal. Monotypic.

Austrolissonota Blanchard, 1941. Dir. Sanid. Veg., Bol. Informativo 4 (14): 16. Nomen nudum.

This large genus is restricted to the New World. Most of the species are Neotropic.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 43-44 (N. Amer. spp. referred to genus).

michiganensis (Davis). Northern Va., n.w. S. C., s. Mich., Mo., n.e. Kans. Host: *Stenomata schlaegeri* Zell., *Psilocorsis reflexella* Clem.

Meniscus Michiganensis Davis, 1894. Canad. Ent. 26: 323. ♀.

mirabilis (Cresson). Newfoundland (insular) s. to N. C., w. to Mich., e. Kans., and Ariz. Host: *Aroga trialbamaculella* (Chamb.), *Filatima pseudoacaciella* (Chamb.)?, tortricid on *Myrica asplenifolia*.

Meniscus mirabilis Cresson, 1870. Amer. Ent. Soc., Trans. 3: 166. ♀.

Clistopyga pleuralis Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 448. ♂. Notes on file in the U. S. Natl. Museum indicate that the syntypes were possibly reared from *Filatima pseudoacaciella* (Chamb.).

Meniscus ostentator Davis, 1894. Canad. Ent. 26: 321. ♂, ♀.

Asphragis pulcherrimus Ashmead, 1898. In Dimmock and Ashmead, Ent. Soc. Wash., Proc. 4: 170. ♂, ♀.

subflava (Davis). N. C., S. C., Ga., Mo., Tex. Host: Caterpillar in *Reullia* sp.

Meniscus subflavus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 371. ♂, ♀.

Genus DIRADOPS Townes

Diradops Townes, 1946. Bol. Ent. Venezolana 5: 59.

Type-species: *Meniscus bethunei* Cresson. Orig. desig.

This large genus is restricted to the New World. All but one of the species are Neotropic.

bethunei (Cresson). Ont. s. to central Ga., w. to n.e. Kans. Host: *Heterocampa manteo* (Dbldy.).

Meniscus Bethunei Cresson, 1869. Canad. Ent. 1: 105. ♀.

Meniscus Johnsonii Davis, 1894. Canad. Ent. 26: 323. ♀.

TRIBE BANCHINI

This is a small tribe of worldwide distribution. Four of the nine currently recognized genera are represented by Nearctic species. The hosts are caterpillars of Lepidoptera which expose themselves when feeding. Drs. H. K. and M. C. Townes have essentially completed a revision of the Nearctic species and expect to publish it in 1978.

Genus EXETASTES Gravenhorst

Exetastes Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 395.

Type-species: *Ichneumon fornicator* Fabricius. Desig. by Westwood, 1840.

* *Leptobatus* Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 432.

Type-species: *Leptobatus zieglerei* Gravenhorst. Desig. by Viereck, 1914.

Semuphrys Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 158.

Type-species: *Exetastes notatus* Holmgren. Monotypically included and desig. by Perkins, 1962.

Rhimphalea Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 202. Preocc. by Lerder, 1863.

Type-species: *Rhimphalea brevicorpa* Davis. By subsequent monotypy from inclusion by Davis, 1897.

Icyona Cameron, 1903. Ztschr. System. Hym. Dipt. 3: 340.

Type-species: *Icyona rufipes* Cameron. Monotypic. The type-species is an objective synonym of *E. cameroni* Townes.

Exetastes subg. *Allexetastes* Kokujev, 1904. Rev. Russe d'Ent. 4: 106.

Type-species: *Exetastes (Allexetastes) komarovi* Kokujev. Desig. by Viereck, 1914.

Rhynchetastes Cameron, 1906. So. African Mus., Ann. 5: 102.

Type-species: *Rhynchetastes violaceipennis* Cameron. Monotypic.

Tegona Morley, 1913. Fauna Brit. India, Hym., v. 3, p. 251.

Type-species: *Tegona rufipes* Morley. Monotypic. The type-species is regarded as a synonym of *E. cameroni* Townes.

Pseudexetastes Meyer, 1927. Konowia 6: 308.

Type-species: *Pseudexetastes diakonovi* Meyer. Monotypic and orig. desig.

This is a large genus of Neotropic, Holarctic, Oriental (except East Indies), and Ethiopian distribution. Most of the species occur in unforested terrain or in ecotones between forest and grassland.

Revision: Cushman, 1937. U. S. Natl. Mus., Proc. 84: 243-312.

abdominalis Cresson. Minn., Colo., Alta.

Exetastes abdominalis Cresson, 1865. Ent. Soc. Phila., Proc. 4: 276. ♀.

affinis Cresson. Mich., Colo., Oreg.

Exetastes affinis Cresson, 1865. Ent. Soc. Phila., Proc. 4: 277. ♀.

- albitarsis albitarsis** Provancher. N. S. w. to interior Alaska, s. to Pa and Minn.
Exetastes albitarsis Provancher, 1874. Nat. Canad. 6: 78. ♀.
Exetastes rugosus Cushman, 1937. U. S. Natl. Mus., Proc. 84: 280. Unnecessary n. name for *albitarsis* Provancher, which is not preocc. by *albitarsus* Gravenhorst, 1829.
- albitarsis concavus** Cushman, n. status. Colo., Ariz.
Exetastes concavus Cushman, 1937. U. S. Natl. Mus., Proc. 84: 281. ♂, ♀.
- albitarsis crassisculptus** Cushman, n. status. Alta.?, s.e. Alaska, s. B. C., e. Wash., w. Oreg.
Exetastes crassisculptus Cushman, 1937. U. S. Natl. Mus., Proc. 84: 278. ♂, ♀.
- alternatipes** Cushman. Central N. Mex.
Exetastes alternatipes Cushman, 1937. U. S. Natl. Mus., Proc. 84: 299. ♀.
- alticola** Cushman. Southwestern Colo., Wash.?
Exetastes alticola Cushman, 1937. U. S. Natl. Mus., Proc. 84: 284. ♂, ♀.
- angustoralis** Cushman. Que. s. to n. Ga., w. to n. Wyo. and Nebr.
Exetastes angustoralis Cushman, 1937. U. S. Natl. Mus., Proc. 84: 291. ♂, ♀.
- bifenestratus** Cushman. D. C., s. Ind., and Kans. s. to s. Fla. and s. Tex.; Cuba, Mexico. Host: *Agrotis malefida* Gn.
Ichneumon bifasciatus Say, 1829. Contrib. Maclurian Lyceum to Arts and Sci. 1: 72. ♀.
 Preocc. by Geoffroy, 1785.
Exetastes bifenestratus Cushman, 1937. U. S. Natl. Mus., Proc. 84: 274. N. name for *I. bifasciatus* Say.
- bioculatus** Cresson. D. C., n. Va., Ky., n. Ill., n.e. Kans., Tex.
Exetastes bioculatus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 169. ♂.
Rhimphalea brevicorpa Davis, 1897. Amer. Ent. Soc., Trans. 24: 274. ♀.
- bituminosus** Cushman. Mass., n. Minn., and B. C. s. to central S. C., n. Ga., Mo., and N. Mex.
 Host: *Abagrotis alternata* (Grt.).
Exetastes bituminosus Cushman, 1937. U. S. Natl. Mus., Proc. 84: 300. ♂, ♀.
- brevicornis** Cushman. Eastern S. Dak., Sask., s. Alta.
Exetastes brevicornis Cushman, 1937. U. S. Natl. Mus., Proc. 84: 273. ♂, ♀.
- buccatus** Cushman. Colo., Utah, s.w. Calif.
Exetastes buccatus Cushman, 1937. U. S. Natl. Mus., Proc. 84: 271. ♂, ♀.
- caeruleus** Cresson. Mont., Colo., s. Yukon, s.e. Alaska.
Exetastes caeruleus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 276. ♀.
- caliginosus** (Walley). Southern Sask., e. Wyo.?, Alta. This species was not included in the revision of Cushman (1937).
Arenetra caliginosa Walley, 1931. Canad. Ent. 63: 168. ♂.
- callipterus** Cushman. Southern Ariz.
Exetastes callipterus Cushman, 1937. U. S. Natl. Mus., Proc. 84: 277. ♀.
- carinatifrons** Cushman. Southwestern Tex., N. Mex., Ariz.; Mexico.
Exetastes carinatifrons Cushman, 1937. U. S. Natl. Mus., Proc. 84: 255. ♀.
- carinatus** Cushman. Southern Tex.
Exetastes carinatus Cushman, 1937. U. S. Natl. Mus., Proc. 84: 258. ♀.
- coloradensis** Cushman. Colo. Cushman did not give complete data for the holotype; according to C. F. Baker's notebook it was collected at Fort Collins, Colo. on June 2, 1894 by R. C. Stephenson.
Exetastes coloradensis Cushman, 1937. U. S. Natl. Mus., Proc. 84: 298. ♀.
- convergens** Cushman. Ont., w. S. Dak., Wyo., Colo., s.w. Alta., w. Mont., Alaska, s. B. C., w. Oreg.
Exetastes subimpressus Cushman, 1937. U. S. Natl. Mus., Proc. 84: 288. ♂, ♀. N. syn.
Exetastes nigribasis Cushman, 1937. U. S. Natl. Mus., Proc. 84: 289. ♂, ♀. N. syn.
Exetastes rufobalteatus Cushman, 1937. U. S. Natl. Mus., Proc. 84: 290. ♂, ♀. N. syn.
Exetastes angustus Cushman, 1937. U. S. Natl. Mus., Proc. 84: 290. ♀. N. syn.
Exetastes convergens Cushman, 1937. U. S. Natl. Mus., Proc. 84: 291. ♀.
- corvinus** Cushman. Western Wash., w. Nev., Calif.
Exetastes corvinus Cushman, 1937. U. S. Natl. Mus., Proc. 84: 303. ♀.

deuteromaurus Dalla Torre. Calif.

Exetastes maurus Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 370. ♀. Preocc. by Desvignes, 1856.

Exetastes deuteromaurus Dalla Torre, 1901. Cat. Hym., v. 3, p. 71. N. name for *maurus* Cresson.

dichrous Cushman. Colo., n.e. Calif.

Exetastes dichrous Cushman, 1937. U. S. Natl. Mus., Proc. 84: 302. ♀.

dilutipes Cushman. Northwestern Wyo., s.w. Alta., s.w. B. C. Cushman failed to give complete data for the holotype; it was collected on Mt. Norquay, Banff Natl. Park, Alta. in a mountain meadow at an elevation between 5000 and 6000 ft.

Exetastes dilutipes Cushman, 1937. U. S. Natl. Mus., Proc. 84: 285. ♂, ♀.

erythrogaster Cushman. Northern Colo., s.w. Alta., s. B. C., w. Oreg.

Exetastes erythrogaster Cushman, 1937. U. S. Natl. Mus., Proc. 84: 297. ♂, ♀.

Exetastes concoloripes Cushman, 1937. U. S. Natl. Mus., Proc. 84: 298. ♂, ♀. N. syn.

Cushman did not give complete data for the holotype; it was collected at North Park, Colo. in July by C. F. Baker.

fascipennis Cresson. Colo., N. Mex., Alta., Ariz.

Exetastes flavitarsis Cresson, 1865. Ent. Soc. Phila., Proc. 4: 277. ♂.

Exetastes fascipennis Cresson, 1865. Ent. Soc. Phila., Proc. 4: 278. ♀.

Exetastes Cressonii Dalla Torre, 1901. Cat. Hym., v. 3, p. 70. Unnecessary n. name for *flavitarsis* Cresson, which is not preocc. by *E. flavitarsus* Gravenhorst, 1829.

flavipennis Cresson. Mass., s. Mich., and w. Idaho s. to w. N. C., s. Ga., and Colo.; Mexico.

Incorrectly treated as a subspecies of the Eurasian *E. fornicator* (Fabricius) by Townes and Townes (1966).

Exetastes flavipennis Cresson, 1865. Ent. Soc. Phila., Proc. 4: 275. ♀.

Exetastes anthracinus Cushman, 1937. U. S. Natl. Mus., Proc. 84: 305. ♂, ♀. N. syn.

Exetastes geminus Cushman, 1937. U. S. Natl. Mus., Proc. 84: 306. ♀. N. syn.

Taxonomy: Townes and Townes, 1966. Amer. Ent. Inst., Mem. 8: 137.

flavus Cushman. Northeastern Colo., N. Mex.

Exetastes flavus Cushman, 1937. U. S. Natl. Mus., Proc. 84: 265. ♀.

igneipennis Cushman. Northeastern Colo., N. Mex., Ariz.; Mexico.

Exetastes igneipennis Cushman, 1937. U. S. Natl. Mus., Proc. 84: 270. ♂, ♀.

illinoiensis (Walsh). Southern Mich., Ill., Minn., w. Iowa, Sask., Colo., Alta. Host: Cutworm.

Leptobatus illinoiensis Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 148. ♀.

infumetricus Cushman. B. C., w. Wash.

Exetastes infumetricus Cushman, 1937. U. S. Natl. Mus., Proc. 84: 283. ♀.

lasius Cushman. Eastern Nebr., Kans., s. Ariz., s.w. Calif. Host: *Euxoa* (*Chorizagrotis*) *auxiliaris* (Grt.).

Exetastes lasius Cushman, 1937. U. S. Natl. Mus., Proc. 84: 258. ♂, ♀.

matricus Provancher. Que., Mass., Ont., s.w. S. Dak., Alta.

Exetastes matricus Provancher, 1879. Nat. Canad. 11: 213. ♀.

nervulus nervulus (Say). N. B. w. to w. Ont. and s.w. S. Dak., s. to w. N. C., n. Ga., and s. Ind.

Banchus nervulus Say, 1836. Boston Jour. Nat. Hist. 1: 246. Sex not indicated.

Exetastes rufofemoratus Provancher, 1877. Nat. Canad. 9: 14. ♀. N. syn.

Exetastes exploratus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 365. ♂, ♀.

Exetastes nervulus var. *intermedius* Cushman, 1937. U. S. Natl. Mus., Proc. 84: 310. ♂, ♀. N. syn.

nervulus niger Cresson. Southwestern S. Dak. w. to s.w. Alta. and w. Oreg., s. to N. Mex. and Ariz.

Exetastes niger Cresson, 1865. Ent. Soc. Phila., Proc. 4: 275. ♂, ♀.

Exetastes persimilis Cushman, 1937. U. S. Natl. Mus., Proc. 84: 306. ♂, ♀. N. syn.

obscurus Cresson. Mass., s. Man., and s. Wash. s. to e. N. C., n. Ga., Mo., and n.w. Oreg.; n.w. Mexico? Host: *Euxoa ochrogaster* (Gn.).

Exetastes decoloratus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 280. ♂.

Exetastes obscurus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 281. ♀.

- ornatus** Cushman. N. H., R. I., Conn., N. Y., N. J., Pa., Md., Ohio, Mich.
Eretastes ornatus Cushman, 1937. U. S. Natl. Mus., Proc. 84: 286. ♂, ♀.
- pallidus** Cushman. Northwestern S. Dak., Colo.
Eretastes pallidus Cushman, 1937. U. S. Natl. Mus., Proc. 84: 266. ♀.
- pectinatus** Cushman. Sask., w. S. Dak., Colo., s.w. Alta., n.w. Mont., n.e. Calif.
Eretastes pectinatus Cushman, 1937. U. S. Natl. Mus., Proc. 84: 272. ♀.
- pictus** Cushman. Western Tex., s. Ariz.; Mexico.
Eretastes pictus Cushman, 1937. U. S. Natl. Mus., Proc. 84: 260. ♀.
- pilosus** Cushman. Western Oreg.
Eretastes pilosus Cushman, 1940. U. S. Natl. Mus., Proc. 88: 364. ♂, ♀.
- propinquus** Cushman. N. J. s. to Fla., w. to central Tenn. and s. Tex. Ecology: Occurs on *Solidago* flowers.
Eretastes propinquus Viereck, 1910 (1909). In Smith, N. J. State Mus., Rpt. (for 1909), p. 618. Nomen nudum.
Eretastes propinquus Cushman, 1937. U. S. Natl. Mus., Proc. 84: 267. ♂, ♀.
- ridens** Cushman. Northern Utah, Ariz., n. Idaho, s. B. C., e. Wash., n.w. Calif.
Eretastes ridens Cushman, 1937. U. S. Natl. Mus., Proc. 84: 262. ♂, ♀.
- ruficoxalis** Cushman. S. Dak., Colo., Alta., Idaho, n. Utah, B. C., Wash.
Eretastes ruficoxalis Cushman, 1937. U. S. Natl. Mus., Proc. 84: 294. ♂, ♀.
- rufipes** Cresson. Wyo., Colo., s. Idaho, Wash., Oreg., n. Calif.
Eretastes rufipes Cresson, 1865. Ent. Soc. Phila., Proc. 4: 277. ♀.
Eretastes purpureus Cushman, 1937. U. S. Natl. Mus., Proc. 84: 285. ♀.
- Taxonomy: Cushman, 1940. U. S. Natl. Mus., Proc. 88: 364.
- scutellaris** Cresson. Western S. Dak., Colo., N. Mex., s. Alta., n. Utah, s.w. Calif.; n.w. Mexico?
Eretastes scutellaris Cresson, 1865. Ent. Soc. Phila., Proc. 4: 279. ♂, ♀.
Banchus caudatus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 121. ♀.
- septum** Cushman. Southwestern Oreg., w. Calif. Host: *Catabena lineolata* Wlk.
Eretastes septum Cushman, 1937. U. S. Natl. Mus., Proc. 84: 257. ♂, ♀.
- suaveolens** Walsh. N. B. s. to n. Ga., w. to s. Alta. Host: *Cucullia asteroides* Gn.
Eretastes suaveolens Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 146. ♂, ♀.
Paniscus Quebecensis Provancher, 1874. Nat. Canad. 6: 106. "♀" = ♂ ? (♂ misdet.).
Provancher's description of the "female" agrees with *suaveolens*, but according to Barron (1975) the only *suaveolens* female in the Provancher collections was collected too recently to be a syntype of *E. Quebecensis*. Because there are five *suaveolens* males in the Provancher collections which cannot be otherwise excluded as possible syntypes, it would seem logical to conclude that Provancher misdetermined the sex of his *E. Quebecensis* "female."
- Taxonomy: Provancher, 1879. Nat. Canad. 11: 212 (syn.). —Barron, 1975. Nat. Canad. 102: 541-542.
- zelotypus** Cresson. Western Calif.
Eretastes zelotypus Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 370. ♂, ♀.

Genus AGATHILLA Westwood

Agathilla Westwood, 1882. Tijdschr. v. Ent. 25: 23.

Type-species: *Agathilla fulvopicta* Westwood. Monotypic.

Three species are known. The type-species is Mexican, and an undescribed species occurs in Arizona.

- bradleyi** (Viereck). N. J., n. Va., n. Ohio, s. Ill., n.e. Kans. Host: *Cirrophanus triangulifer* Grt.
This is obviously the species upon which Ashmead (1900) based his description of *Agathobanchus*; however, because Ashmead misidentified *bradleyi* as *Banchus aequatus* Say, *Agathobanchus* is placed as a synonym of *Acroricinus* (which see) rather than *Agathilla*.
Agathobanchus bradleyi Viereck, 1905. Kans. Acad. Sci., Trans. 19: 303. ♂, ♀.

Taxonomy: Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 97. —Cushman and Gahan, 1921. Ent. Soc. Wash., Proc. 23: 158-159.

Genus CERATOGASTRA Ashmead

Ceratosoma Cresson, 1865. Ent. Soc. Phila., Proc. 4: 281. Preocc. by Adams and Reeve, 1850.

Type-species: *Ceratosoma fasciata* Cresson. Desig. by Viereck, 1914.

Ceratogastra Ashmead, 1900. Canad. Ent. 32: 368. N. name for *Ceratosoma* Cresson.

Two species are known, *C. pulchricolor* Aubert having been recently described from Turkestan.

ornata (Say). Mass., s. Ont., s. Wis., and n.e. Calif., s. to n. Fla., s. La., s. N. Mex., and s.e. Calif.; Mexico. Ecology: Numerous specimens in the U. S. Natl. Museum collection were collected by J. C. Bridwell and many of them are labeled as ovipositing in flowers of *Ambrosia artemisiifolia*; a few of them are labeled as ovipositing in flowers of *Eupatorium*. Bridwell collected numerous specimens on *Solidago*, but none of these are labeled as ovipositing in the flowers. According to Dr. H. K. Townes (personal communication, 1976) the information on *ornata* given by Townes (1970) was in part personally communicated to him by Bridwell. According to Bridwell, *ornata* oviposits in newly hatched larvae of a species of *Feltia* (generic identification in need of confirmation) which oviposits in flowers of Compositae but whose larvae feed terrestrially (i.e. as cutworms on or in the ground). This account appears to be supported by a number of specimens labeled as being reared from cutworms. Host: *Feltia* sp.?, cutworm.

Agathis polita Say, 1836. Boston Jour. Nat. Hist. 1: 225. ♂, ♀.

Agathis ornata Say, 1836. Boston Jour. Nat. Hist. 1: 226. ♂.

Ceratosoma apicalis Cresson, 1865. Ent. Soc. Phila., Proc. 4: 282. ♂, ♀. N. syn.

Ceratosoma fasciata Cresson, 1865. Ent. Soc. Phila., Proc. 4: 283. ♀.

Ceratosoma rubyata Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 366. ♀.

Ceratogastra trifasciata Cushman, 1927. U. S. Natl. Mus., Proc. 72 (13): 21. ♀. N. syn.

Taxonomy: Cushman, 1927. U. S. Natl. Mus., Proc. 72 (13): 21-22. —Townes and Townes, 1951. In Muesebeck et al., U. S. Dept. Agr., Agr. Monog. 2: 319-320.

Biology: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 51.

Genus BANCHUS Fabricius

Banchus Fabricius, 1798. Sup. Ent. System., p. 209, 233.

Type-species: *Banchus pictus* Fabricius. Desig. by Curtis, 1836.

Corynephanus Wesmael, 1849. [Brussels] Acad. Roy. de Belg., Bul. de Cl. des Sci. 16 (1): 631.

Type-species: *Banchus monileatus* Gravenhorst. Monotypic.

Cidaphurus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 159.

Type-species: *Ichneumon volutatorius* Linnaeus. By subsequent monotypy from inclusion by Woldstedt, 1877.

Corynephanes(!) Marschall, 1873. Nomencl. Zool., p. 258.

Nawaia Ashmead, 1906. U. S. Natl. Mus., Proc. 30: 184.

Type-species: *Nawaia japonica* Ashmead. Monotypic.

This is a moderate sized genus of Neotropic (Sonora, Mexico), Holarctic, and Oriental distribution. About half of the Nearctic species are undescribed. Dr. Michael Fitton is preparing a revision of the western Palearctic species.

borealis Cresson. Ont.

Banchus borealis Cresson, 1868. Canad. Ent. 1: 33. "♂" = ♀.

canadensis Cresson. Maine w. to e. Wash., s. to n. Ga.

Banchus canadensis Cresson, 1868. Canad. Ent. 1: 34. ♂, ♀.

cressonii (Viereck). Mass. s. to e. N. C., w. to Ill.

Cidaphurus cressonii Viereck, 1902. Canad. Ent. 34: 69. ♀.

flavescens Cresson. N. S. w. to s.w. B. C., s. to w. N. C., N. Mex., Ariz., and w. Oreg. Host:

Barathra curialis (Sm.), noctuid.

Ichneumon ferrugator Kirby, 1837. In Richardson, Fauna Bor.-Amer. v. 4, p. 258. ♀.

Preocc. by Swederus, 1787 and Fabricius, 1793.

Banchus flavescens Cresson, 1868. Canad. Ent. 1: 33. ♂.

Banchus ferrugineus Provancher, 1877. Nat. Canad. 9: 14. ♀.

Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 107.

inermis Provancher. Que. w. to s.w. B. C., s. to Conn., s.w. S. Dak., and w. Nev.

Banchus flavovariegatus Provancher, 1874. Nat. Canad. 6: 61. ♂, ♀.

Banchus inermis Provancher, 1874. Nat. Canad. 6: 62. ♀.

Banchus polychromus Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 366.

"♀" = ♂.

Banchus tricolor Cameron, 1905. Invertebrata Pacifica 1: 130. ♂. Preocc. in *Banchus* by Schrank, 1802.

Banchus reparandus Schulz, 1906. Spolia Hym., p. 95. N. name for *tricolor* Cameron.

Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 104 (syn.).

monileatus alticola (Ashmead). Colo., N. Mex.

Cidaphurus alticola Ashmead, 1901. Psyche 9: 148. ♂.

Banchus alticolus Townes, 1944. Amer. Ent. Soc., Mem. 11: 474. Unjustified emend.

monileatus monileatus Gravenhorst. Que., s.w. Alta., Alaska; Greenland; Eurasia.

Banchus monileatus Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 393. ♂, ♀.

Banchus formidabilis Provancher, 1874. Nat. Canad. 6: 61. ♀.

Banchus (Corynephanes) groenlandicus Aurivillius, 1890. Svenska Vetensk.-Akad., Bihang til Handl. 15: 30. ♂, ♀.

nigrolineatus (Cameron). Southern Idaho, w. Nev., s.e. and w. Calif.

Cidaphurus nigrolineatus Cameron, 1905. Invertebrata Pacifica 1: 129. ♂.

Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 105.

pallesens Provancher. Que. w. to s.w. B. C., s. to n. Ga. and w. Oreg.

Banchus pallescens Provancher, 1874. Nat. Canad. 6: 62. ♀.

Banchus insignis Provancher, 1874. Nat. Canad. 6: 63. ♂ ? Provancher (1879) stated that what he had described as *insignis* in 1874 was actually a female; Barron (1975) failed to discuss Provancher's (1879) correction and regarded a male specimen as being the holotype of *insignis*.

Corynephanes tarsalis Ashmead, 1902. In Slosson, Ent. News 13: 321. Nomen nudum.

Taxonomy: Provancher, 1879. Nat. Canad. 11: 218. — Barron, 1975. Nat. Canad. 102: 490, 525.

spinosus Cresson. Colo.

Banchus spinosus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 274. "♂" = ♀.

superbus Cresson. Colo., N. Mex., s.w. Utah, n.w. Ariz., s.e. Oreg.

Banchus superbus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 273. ♂.

SUBFAMILY NEORHACODINAE

This small subfamily includes two genera, only one of which occurs in the Nearctic region.

Genus NEORHACODES Hedicke

Rhacodes Ruschka, 1922. Arch. f. Naturgesch. (ser. A) 88 (5): 138. Preocc. by Koch, 1856.

Type-species: *Rhacodes enslini* Ruschka. Monotypic.

Neorhacodes Hedicke, 1922. Deut. Ent. Ztschr. (for 1922), p. 427. New name for *Rhacodes* Ruschka.

This is a small Holarctic and Neotropical genus. There appear to be several undescribed Nearctic species. The type-species, which is European, has been reared from the pemphredonine sphecid *Spilomena troglodytes* (V. d. L.). An undescribed species from W. Va. was reared from a pemphredonine in the galleries of an anobiid in a house timber.

Taxonomy: Horstmann, 1968. Ent. Nachr. 12: 33-36 (final-instar larva and adult of type-species). — Townes, 1971. Amer. Ent. Inst., Mem. 17: 240.

brevicauda Cushman. Ariz.; s. Mexico.

Neorhacodes brevicuda Cushman, 1940. U. S. Natl. Mus., Proc. 88: 526. ♂, ♀.

longicauda Cushman. Colo., Ariz.

Neorhacodes longicauda Cushman, 1940. U. S. Natl. Mus., Proc. 88: 526. ♀.

SUBFAMILY CTENOPELMATINAE

This is a large subfamily; its distribution is worldwide, but it is best represented in the Holarctic Region. The vast majority of the species are thought to be internal parasites of sawfly larvae; however, two species of *Lathrolestes* (one Nearctic and one European) have been reared from primitive microlepidoptera of the family Eriocraniidae. The unreliable nature of Townes' (1970) keys to the genera appears to indicate that this subfamily is very difficult taxonomically.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 53-143 (genera of world).

TRIBE CTENOPELMATINI

Five genera are included in this small Holarctic tribe; four of them have nearctic species. The known hosts are Pamphiliidae.

Genus CTENOPELMA Holmgren

Ctenopelma Holmgren 1857 (1855). Svenska Vetensk.-Akad. Handl. 1: 117.

Type-species: *Ctenopelma nigrum* Holmgren. Desig. by Viereck, 1912.

Xaniopelma Tschek, 1868. Zool.-Bot. Gesell. Wien., Verh. 18: 443.

Type-species: *Xaniopelma sericans* Tschek. Monotypic. The type-species is regarded as a synonym of *C. nigrum* Holmgren.

Zachresta Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 151.

Type-species: *Zachresta insignis* Woldstedt. By subsequent monotypy from inclusion by Woldstedt, 1877. The type-species is regarded as a synonym of *C. lucifer* (Gravenhorst).

Diedrus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 200.

Type-species: *Diedrus areolatus* Davis. Desig. by Viereck, 1914 from two species included by Davis, 1898.

Eryma Foerster, 1868 Naturh. Ver. Rheinlande, Verh. 25: 202. Preocc. by Meyer, 1840 and Albers, 1854.

Type-species: *Eryma stygium* Kriechbaumer. By subsequent monotypy from inclusion by Kriechbaumer, 1891. The type-species is regarded as a synonym of *C. nigrum* Holmgren.

Holmgrenia Kriechbaumer, 1877. Zool.-Mineral. Ver. Regensburg, Corresp.-Bl. 31: 146. Preocc. by Foerster, 1868.

Type-species: *Holmgrenia pulchra* Kriechbaumer. Monotypic. The type-species is regarded as a synonym of *C. xanthostigma* Holmgren.

Kriechbaumeria Dalla Torre, 1885. Naturf. Gesell. Graubuendens, Jahresber. 28: 52. N. name for *Holmgrenia* Kriechbaumer.

Polyomorus Kriechbaumer, 1894. Ent. Nachr. 20: 60.

Type-species: *Polyomorus gagatinus* Kriechbaumer. Monotypic. The type-species is regarded as a synonym of *C. luteum* Holmgren.

Neoeryma Ashmead, 1898. Ent. Soc. Wash., Proc. 4: 169. N. name for *Eryma* Foerster.

Pseudobanchus Szepligeti, 1911. In Wytsman, Gen. Ins., fasc. 114, p. 79.

Type-species: *Exetastes nigripennis* Gravenhorst. Monotypic.

Polyhomorus Schulz, 1906. Spolia Hym., p. 99. Emend. of *Polyomorus* Kriechbaumer.

This is a Holarctic genus of moderate size.

areolatum (Davis). N. H.

Diedrus areolatus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 324. ♀.

crassicornae Walley. Northern Ont.

Ctenopelma crassicornae Walley, 1941. Canad. Ent. 73: 168. ♂, ♀.

croceum Walley. Que. s. to Md., w. to Alta.

Ctenopelma croceum Walley, 1941. Canad. Ent. 73: 167. ♂, ♀.

labradorensis (Davis). Newfoundland (Labrador).

Diedrus labradorensis Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 324. ♀.

nigricorne (Provancher). Maine, N. Y., Pa., Md., Ont., Alta.

Mesoleptus nigricornis Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 99. ♀.

sanguineum (Provancher). Que., N. Y., N. J., Alta.

Tryphon sanguineus Provancher, 1875. Nat. Canad. 7: 118. ♂. A lectotype was selected by Townes (1939); Barron's (1975) rejection of it is invalid because Provancher stated that he had three males, and lack of agreement with the original description is not by itself sufficient proof that the lectotype selected by Townes (1939) was not one of Provancher's original syntypes.

Taxonomy: Townes, 1939. Canad. Ent. 71: 93. —Barron, 1975. Nat. Canad. 102: 560.

Genus XENOSCHESIS Foerster

There are two small Holarctic subgenera

Taxonomy: Walley, 1935. Canad. Ent. 62: 180 (key to spp.).

Genus XENOSCHESIS Subgenus XENOSCHESIS Foerster

Xenoschesis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 158.

Type-species: *Eretastes fulvipes* Gravenhorst. By subsequent monotypy from inclusion by Jemiller, 1894.

Homobia Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 198.

Type-species: *Colpotrochia cinctiventris* Ashmead. By subsequent monotypy from inclusion by Davis, 1897.

Glyptocentrus Kriechbaumer, 1894. Ent. Nachr. 20: 61.

Type-species: *Eretastes fulvipes* Gravenhorst. Monotypic.

cinctiventris (Ashmead). Newfoundland (insular), Maine, N. H., Mass., Pa., w. Calif. Host:

Acantholyda sp.?, pamphilid on *Pinus rigida*.

Colpotrochia cinctiventris Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 200. "♀" = ♂.

Pyraconon clypeatum Ashmead, 1897. In Slosson, Ent. News 8: 237. Nomen nudum.

Eretastes abbreviatus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 366, ♂, ♀.

Erigloea longitarsis Ashmead, 1906. In Slosson, Ent. News 17: 324. Nomen nudum.

Xenoschesis slossonae Cushman, 1915. Ent. Soc. Wash., Proc. 17: 140. ♀.

Genus XENOSCHESIS Subgenus POLYCINETIS Foerster

Polycinetis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 198.

Type-species: *Notopygus resplendens* Holmgren. By subsequent monotypy from inclusion by Woldstedt, 1877.

Prosmorus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 198.

Type-species: *Notopygus resplendens* Holmgren. By subsequent monotypy from inclusion by Thomson, 1895.

Erigloea Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 202.

Type-species: *Erigloea polita* Kriechbaumer. Desig. by Viereck, 1914 from three species included by Kriechbaumer, 1891. The type-species is regarded as a synonym of *X. (P.) resplendens* (Holmgren).

Polycinetus Thomson, 1894. Opusc. Ent. 19: 1983. Emend.; preocc. by Gistel, 1848.

crassitarsus Walley. Southwestern Ont.

Xenoschesis crassitarsus Walley, 1935. Canad. Ent. 67: 181. ♀.

gracilis Cushman. N. H., s.w. Alta.

Xenoschesis gracilis Cushman, 1915. Ent. Soc. Wash., Proc. 17: 141. ♀.

limatus (Cresson). Que., Conn., N. Y., N. J., Md.

Tryphon? limatus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 274. "♂" = ♀.

solitarius (Davis). Southern Mich.

Polycinetus solitarius Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 307. ♀.

Genus NOTOPYGUS Holmgren

Notopygus Holmgren, 1857 (1855). Svenska Vetensk.-Akad. Handl. (n.f.) 1: 115.

Type-species: *Notopygus emarginatus* Holmgren. Desig. by Viereck, 1912.

Antipygus Tschek, 1868. Zool.-Bot. Gesell. Wien, Verh. 18: 438.

Type-species: *Antipygus megerlei* Tschek. Monotypic.

This is a small Holarctic genus.

Taxonomy: Cushman, 1915. U. S. Natl. Mus., Proc. 48: 511.

cultus (Cresson). N. Y., N. J., Ill., s.e. S. Dak.

Mesoleptus cultus Cresson, 1868. Amer. Ent. Soc., Trans. 2: 99. "♂" = ♀.

Prosmosus(!) *cymbiformis* Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 309. ♀.

Prosmorus cymbiformis Dalla Torre, 1901. Cat. Hym., v. 3, p. 371. Emend.

excavatus Davis. Nev., w. Wash.

Notopygus excavatus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 309. ♀.

scutellatus Cushman. Northern Idaho.

Notopygus scutellatus Cushman, 1915. Ent. Soc. Wash., Proc. 17: 134. ♀.

virginiensis Cushman. N. H., N. Y., Md., Va., e. N. C.

Notopygus virginiensis Cushman, 1915. U. S. Natl. Mus., Proc. 48: 511. ♀.

Genus HOMASPIS Foerster

Homaspis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 198.

Type-species: *Mesoleptus rufinus* Gravenhorst. Desig. by Viereck, 1914 from four species included by Thomson, 1894.

Nehomaspis Heinrich, 1949. Muenchen. Ent. Gesell., Mitt. 35-39: 15, 81. Name invalid;

type-species not desig. except subsequently by Townes, Momoi, and Townes, 1965.

albipes Davis. N. Y., w. Calif.?

Homaspis albipes Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 308. ♀.

interruptus (Provancher). Que.

Paniscus interruptus Provancher, 1874. Nat. Canad. 6: 107. ♀.

nigripes Cushman. N. Y., Colo., Wash.

Homaspis nigripes Cushman, 1915. Ent. Soc. Wash., Proc. 17: 134. ♀.

rhadinus Davis. N. H.

Homaspis rhadinus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 308. ♀.

slossonae Cushman. Que., N. H., N. Y., Ont., Wash.

Homaspis slossonae Ashmead, 1897. In Slosson, Ent. News 8: 237. Nomen nudum.

Homaspis slossonae Cushman, 1922. U. S. Natl. Mus., Proc. 61 (8): 15. ♂.

TRIBE PIONINI

Sixteen genera are currently recognized. Only six of them have Nearctic species. It is thought that all members of this tribe oviposit into the egg or early larval instar of their sawfly hosts. The host larva is not killed until after it has reached the prepupal stage and spun its cocoon.

Genus LETHADES Davis

Lethades Davis, 1897. Amer. Ent. Soc., Trans. 24: 204.

Type-species: *Adelognathus texanus* Ashmead. Monotypic.

Townes (1970) said that this Holarctic genus includes ten Nearctic species, eight of which are undescribed.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 70.

kukakensis (Ashmead). Southwestern Alaska.

Trematopygus kukakensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 212. ♀.

texanus (Ashmead). Tex.

Adelognathus texanus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 442. ♀.

Genus HODOSTATES Foerster

Gnesia Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 202. Preocc. by Doubleday, 1848.

Type-species: *Gnesia caliroae* Rohwer. Monotypically included and desig. by Rohwer, 1915.

Hodostates Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 202.

Type-species: *Hodostatus brevis* Thomson. By subsequent monotypy from inclusion by Thomson, 1883.

Hodostatus Thomson, 1883. Opusc. Ent. 9: 929. Emend.

Esigna Perkins, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 11: 425. N. name for *Gnesia* Foerster.

One Nearctic and one European species are known.

rotundatus (Davis). N. H., N. J., n. Va. Host: *Caliroa lorata* MacG.

Trematopygus rotundatus Davis, 1897. Amer. Ent. Soc., Trans. 24: 277. ♂, ♀.

Gnesia caliroae Rohwer, 1915. U. S. Natl. Mus., Proc. 49: 220. ♀. Rohwer erroneously stated that notes under Hopkins' number 11381 pertaining to the holotype record the species as being reared from a species of *Caliroa* which feeds on *Nyssa sylvatica*.

Actually the notes record the holotype as having emerged on Aug. 10, 1913 from a larva of *Caliroa* (= "*Eriocampoides*") collected on July 7, 1913 feeding on *Castanea dentata*.

D. R. Smith has informed me (personal commun., 1976) that *Caliroa lorata* is the only species of its genus which he knows to feed on *Castanea*.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 70-71 (syn.).

Genus TREMATOPYGUS Holmgren

Trematopygus Holmgren, 1857 (1855). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 179.

Type-species: *Trematopygus ruficornis* Holmgren. Desig. by Viereck, 1912.

Amorphognathon Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 203.

Type-species: *Tryphon melanocerus* Gravenhorst. By subsequent monotypy from inclusion by Kriechbaumer, 1897.

Rhigelus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 208.

Type-species: *Trematopygus kriechbaumeri* Thomson. Monotypically included and desig. by Perkins, 1962. The type-species is regarded as a synonym of *Trematopygus melanocerus* (Gravenhorst).

Aselasma Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 209.

Type-species: *Tryphon vellicans* Gravenhorst. Monotypically included and desig. by Townes, Momoi, and Townes, 1965.

Campoporus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 210.

Type-species: *Ichneumon dictator* Thunberg. Monotypically included and desig. by Perkins, 1962. The name of the type-species is preocc. by Geoffroy, 1785; *I. dictator* Thunberg is regarded as a synonym of *T. nigricornis* (Holmgren).

Volucris Davis, 1897. Amer. Ent. Soc., Trans. 24: 269.

Type-species: *Tryphon semirufus* Cresson. By subsequent monotypy from inclusion by Davis, 1898.

This is a Holarctic genus of moderate size.

semirufus (Cresson). Que. w. to s.w. B. C., s. to N. J., Ill., Colo., and w. Oreg.

Tryphon semirufus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 278. ♀.

Tryphon rufocinctus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 280. ♀.

Tryphon tuberculifer Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 103. "♀" = ♂.

Taxonomy: Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 287, 332.

Genus GLYPTORHAESTUS Thomson

Rhaestus subg. *Glyptorhaestus* Thomson, 1894. Opusc. Ent. 19: 1976.

Type-species: *Rhaestus punctatus* Thomson. Desig. by Viereck, 1914.

Loxoneurus Schmiedeknecht, 1913. Opusc. Ichtn., v. 5, fasc. 34, p. 2711.

Type-species: *Loxoneurus thuringiacus* Schmiedeknecht. By subsequent monotypy from inclusion by Schmiedeknecht, 1913 (fasc. 35, p. 2752).

Oocenteter Cushman, 1935. Wash. Acad. Sci., Jour. 25: 556.

Type-species: *Oocenteter tomostethi* Cushman. Monotypic and orig. desig.

This is a Holarctic genus of moderate size.

tomostethi (Cushman). Mass., Md., s.w. Iowa. Host: *Tomostethus multicinctus* (Roh.).

Oocenteter tomostethi Cushman, 1935. Wash. Acad. Sci., Jour. 25: 556. ♂, ♀.

Biology: McConnell, 1938. Ent. Soc. Wash., Proc. 40: 23.

Genus RHORUS Foerster

Rhorus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 195.

Type-species: *Tryphon mesoxanthus* Gravenhorst. By subsequent monotypy from inclusion by Woldstedt, 1877.

Monoblastus subg. *Dolichoblastus* Strobl, 1903 (1902) Naturw. Ver. f. Steiermark, Mitt. 39: 52.

Type-species: *Monoblastus (Dolichoblastus) flavopictus* Strobl. Monotypic.

Cyphanza Cameron, 1909. Bombay Nat. Hist. Soc., Jour. 19: 723.

Type-species: *Cyphanza nigra* Cameron. Monotypic. The name of the type-species is preocc. in *Rhorus* by Provancher, 1883 and Ashmead, 1902. Townes' (1970) proposal of the replacement name *cameroni* was apparently unnecessary because he did not indicate that the synonymy of *Monoblastus orientalis* Cameron (1909, p. 727) and *Cyphanza nigra* Cameron (1909, p. 723) by Townes, Townes, and Gupta (1961) had been incorrect. Therefore, *R. cameroni* Townes should be presumed to be a synonym of *R. orientalis* (Cameron).

This is a large genus of Holarctic distribution. The tryphonine name *Monoblastus* was incorrectly applied to some species of *Rhorus*, particularly before World War II.

Taxonomy: Cameron, 1909. Bombay Nat. Hist. Soc., Jour. 19: 723, 727. —Townes, Townes, and Gupta, 1961. Amer. Ent. Inst., Mem. 1: 217. —Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 73.

clapini (Provancher). Que., Maine, Wash. Host: *Trichiosoma triangulum* Kirby.

Tryphon Clapini Provancher, 1876. Nat. Canad. 8: 327. "♀" = ♂.

Tryphon clapinii Dalla Torre, 1901. Cat. Hym., v. 3, p. 293. Emend.

dufresnei (Provancher). Que., Md., N. C.

Tryphon Dufresnei Provancher, 1875. Nat. Canad. 7: 309. ♂, ♀.

extirpatorius obscurellus (Cresson). Calif. *R. extirpatorius extirpatorius* (Gravenhorst) is European.

Erromenus obscurellus Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 373. ♀.

extirpatorius punctifrons (Davis). Tex.

Monoblastus punctifrons Davis, 1897. Amer. Ent. Soc., Trans. 24: 261. ♀.

extirpatorius varifrons (Cresson). Que. s. to Va., w. to Alta.

Tryphon varifrons Cresson, 1868. Amer. Ent. Soc., Trans. 2: 104. ♂.

Tryphon scutellaris Cresson, 1868. Amer. Ent. Soc., Trans. 2: 104. ♀.

Tryphon frontalis Cresson, 1868. Amer. Ent. Soc., Trans. 2: 109. ♀.

Tryphon variifrons Dalla Torre, 1901. Cat. Hym., v. 3, p. 303. Emend.

haemorrhoeus borealis (Ashmead). Southeastern Alaska. *R. haemorrhoeus haemorrhoeus* (Hartig) is Eurasian.

Monoblastus niger Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 213. ♂. Preocc. in *Rhorus* by Provancher, 1883.

Phthorina(!) *borealis* Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 225. ♂.

haemorrhoeus fuscus (Davis). Que. s. to n. Va., w. to Mich. Host: *Caliroa cerasi* (L.).

Mesoleius niger Provancher, 1883. Nat. Canad. 14: 9. "♀" = ♂. Formerly preocc. in

Mesoleius by Gravenhorst, 1829.

Trematopygus fuscus Davis, 1897. Amer. Ent. Soc., Trans. 24: 277. ♂.

Mesoleius nigratus Dalla Torre, 1901. Cat. Hym., v. 3, p. 263. N. name for *M. niger*

Provancher.

Monoblastus caliroae Viereck, 1912. U. S. Natl. Mus., Proc. 42: 151. ♂, ♀.

Trematopygus ericampoididis Cushman, 1915. Ent. Soc. Wash., Proc. 17: 135. ♂, ♀.

hervieuxii (Provancher). Que.

Tryphon hervieuxii Provancher, 1879. Nat. Canad. 11: 254. ♀.

pilosus (Davis). Mont., w. Wash.

Erynia pilosa Davis, 1897. Amer. Ent. Soc., Trans. 24: 274. ♂.

tristis (Provancher). Que., Maine, Conn., Ont. Host: *Arge clavicornis* (F.), *Nematus ventralis* Say, sawfly on poplar.

Erronemus (!) *tristis* Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 110. ♀.

Genus SYMPHERTA Foerster

Sympherta Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 196.

Type-species: *Tryphon burrus* Cresson. Desig. by Viereck, 1914 from two species included by Davis, 1897.

Stiphrosomus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 198. preocc. by Fieber, 1858.

Type-species: *Mesoleptus fuscicornis* Gravenhorst. Desig. by Viereck, 1914 from six species included by Thomson, 1895. The type-species is Gravenhorst's identification of *Ichneumon fuscicornis* Gmelin, 1790, p. 2701 (not p. 2684).

Trapezocora Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 208.

Type-species: *Mesoleptus antilope* Gravenhorst. Included and desig. by Perkins, 1962.

Atristes Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 209.

Type-species: *Catoglyptus* (*Stiphrosomus*) *sulcatus* Thomson. Monotypically included and desig. by Perkins, 1962.

Campogenes Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 209.

Type-species: *Mesoleptus antilope* Gravenhorst. Monotypically included and desig. by Perkins, 1962.

Provancherella Dalla Torre, 1901. Cat. Hym., v. 3, p. 305.

Type-species: *Baryceros rhopalocerus* Provancher. Monotypic.

Eustiphrosomus Hincks, 1944. Roy. Ent. Soc. London, Proc. (ser. B) 13: 34. N. name for *Stiphrosomus* Foerster.

According to Townes (1970) this is a moderately large genus of Holarctic distribution.

Taxonomy: Townes, Momoi, and Townes, 1965. Amer. Ent. Inst., Mem. 5: 245 (syn.).

—Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 81-82 (spp. referred to genus).

aciculata (Davis). Mont.

Monoblastus aciculatus Davis, 1897. Amer. Ent. Soc., Trans. 24: 262. ♂.

burra (Cresson). Que. s. to s.e. Ga., w. to e. Iowa.

Tryphon burrus Cresson, 1868. Amer. Ent. Soc., Trans. 2: 108. ♀.

Baryceros rhopalocerus Provancher, 1875. Nat. Canad. 7: 269. Barron (1975) appears to have had valid grounds for rejecting the lectotype selected by Gahan and Rohwer (1918).

Mesoleptus largus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 98. ♀.

Taxonomy: Gahan and Rohwer, 1918. Canad. Ent. 50: 33. —Barron, 1975. Nat. Canad. 102: 493, 545.

clinata (Walley). Southwestern Alta.

Stiphrosomus clinatus Walley, 1937. Canad. Ent. 69: 190. ♀.

fucata fucata (Cresson). Que. w. to s.w. Alta., s. to N. C., Colo., and n. Ariz.

Mesoleptus fucatus Cresson, 1868. Amer. Ent. Soc., Trans. 2: 99.

Mesoleptus erectus Provancher, 1875. Nat. Canad. 7: 317. ♀.

Mesoleptus laetus Provancher, 1879. Nat. Canad. 11: 231. "♀" = ♂. Preocc. by Gravenhorst, 1829.

Syndipnus erythrogaster Viereck, 1908. Amer. Ent. Soc., Trans. 33: 385. ♂.

fucata nigropleuralis (Davis). Nev.

Mesoleptus nigropleuralis Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 317. ♂.

TRIBE PERILISSINI

Eighteen genera are currently recognized; eleven of them are represented by native Nearctic species and a twelfth genus is represented by an introduced species. The tribe is apparently not known from the Australian Region.

Genus SYNOECETES Foerster

Synagrypnus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 203.

Type-species: *Synagrypnus blancoburgensis* Schmiedeknecht. By subsequent monotypy from inclusion by Schmiedeknecht, 1914.

Synoecetes Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 203.

Type-species: *Mesoleptus sedulus* Cresson. Desig. by Viereck, 1914 from three species included by Davis, 1897.

Polyrhysis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 204.

Type-species: *Tryphon tenuicornis* Gravenhorst. Desig. by Viereck, 1914 from two species included by Thomson, 1894.

Polyrhysius Thomson, 1894. Opusc. Ent. 19: 1999. Emend.

This is a small Holarctic genus.

festivus (Cresson). N. H. w. to s. Alta., s. to Md., Ill., and Colo.

Tryphon festivus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 279. "♂" = ♀.

Mesoleptus sedulus Cresson, 1868. Amer. Ent. Soc., Trans. 2: 97. "♂" = ♀.

Genus COELORHACHIS Townes

Coelorhachis Townes, 1966. In Townes and Townes, Amer. Ent. Inst., Mem. 8: 329.

Type-species: *Mesoleptus decorosus* Cresson. Monotypic and orig. desig.

According to Townes this is a moderately large genus which is Neotropical; at least one undescribed species occurs in Texas.

Genus ZAPLETHOCORNIA Schmiedeknecht

Zaplethocornia Schmiedeknecht, 1912. Opusc. Ichn., v. 5, p. 2519.

Type-species: *Ichneumon procurator* Gravenhorst. By subsequent monotypy from inclusion by Schmiedeknecht, 1913.

Nictula Burks, 1952. Ent. Soc. Amer., Ann. 45: 88.

Type-species: *Westwoodia fumipennis* Provancher. Monotypic and orig. desig.

Parastadus Burks, 1952. Ent. Soc. Amer., Ann. 45: 92.

Type-species: *Erigloea opulenta* Davis. Monotypic and orig. desig.

This is a small Holarctic genus.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 88 (syn.).

fumipennis (Provancher). Que., N. H., N. Y.

Westwoodia fumipennis Provancher, 1875. Nat. Canad. 7: 329. ♀.

longipes (Davis). Tex.

Syndipnus longipes Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 288. ♀.

opulenta (Davis). N. H., Mass., N. Y., N. J., Md.

Erigloea opulenta Davis, 1897. Amer. Ent. Soc., Trans. 24: 275. ♀.

Genus NANIUM Townes

Nanium Townes, 1967. In Walkley, in Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2, sup. 2, p. 174.

Type-species: *Tryphon capitatus* Cresson. Monotypic and orig. desig.

This is a small Neotropical and Nearctic genus.

capitatum (Cresson). N. H. s. to n. Fla., w. to Tex.

Tryphon capitatus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 281. ♂.

Genus TREMATOPYGODES Aubert

Trematopygodes Aubert, 1968. Soc. Ent. de Mulhouse, Bul. 24: 69.

Type-species: *Trematopygus aprilius* Giraud. Monotypic.

This is a small Holarctic genus.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 92-93 (redescription and additional spp. referred).

frontosus (Davis), n. comb. Wash. Dr. Henry K. Townes kindly informed me (personal commun., 1976) that his most recent notes on the lectotype indicate that this species belongs in *Trematopygodes*.

Labrossyla frontosa Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 275. ♀ (♂ misdet.?).

oculatus (Davis). Md., Tex.

Oetophorus oculatus Davis, 1897. Amer. Ent. Soc., Trans. 24: 252. ♀.

osflavus (Davis). N. Y., Pa., Mich.

Oetophorus osflavus Davis, 1897. Amer. Ent. Soc., Trans. 24: 252. ♀.

Genus AECHMETA Townes

Aechmeta Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 93.

Type-species: *Ctenopelma indotata* Davis. Orig. desig.

This is a Nearctic genus; only two species are known.

indotata (Davis). N. Y., Va., Ind., Ill., Iowa, Mo., n.e. Kans., Tex.

Ctenopelma indotata Davis, 1897. Amer. Ent. Soc., Trans. 24: 250. ♂, ♀.

Taxonomy: Burks, 1952. Ent. Soc. Amer., Ann. 45: 82, 84, 90.

primosa (Davis). N. H., Tex.

Ctenopelma primosa Davis, 1897. Amer. Ent. Soc., Trans. 24: 250. ♂.

Taxonomy: Burks, 1952. Ent. Soc. Amer., Ann. 45: 82-83.

Genus OETOPHORUS Foerster

Oetophorus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 196.

Type-species: *Mesoleius stretchii* Cresson. Desig. by Viereck, 1914 from four species included by Davis, 1897.

Symphobus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 199.

Type-species: *Tryphon pleuralis* Cresson. By subsequent monotypy from inclusion by Davis, 1898.

This is a small holarctic genus.

Taxonomy: Burks, 1952. Ent. Soc. Amer., Ann. 45: 97-98.

nasoni (Davis). Mich., Ill.

Oetophorus nasoni Davis, 1897. Amer. Ent. Soc., Trans. 24: 251. ♀.

Oetophorus nasonii Dalla Torre, 1901. Cat. Hym., v. 3, p. 329. Emend.

Taxonomy: Burks, 1952. Ent. Soc. Amer., Ann. 45: 97-98. —Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 94.

pleuralis (Cresson). Que., Mass., N. Y., N. J., Pa., Md., Va., B. C.?

Tryphon pleuralis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 275. ♀.

stretchii (Cresson). Colo., s.w. B. C., n. Calif.

Mesoleius Stretchii Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 371. ♀.

Genus PERILISSUS Holmgren

Perilissus Holmgren, 1856 (1855). Svenska Vetensk.-Akad. Handl. 75: 63.

Type-species: *Ichneumon filicornis* Gravenhorst. Monotypic.

Spanotechnus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 197.

Type-species: *Ichneumon filicornis* Gravenhorst. Desig. by Viereck, 1914 from four species included by Thomson, 1883.

Ichneaeops Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 197.

Type-species: *Perilissus lutescens* Holmgren. Monotypically included and desig. by Perkins, 1962.

Polygoncus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 197.

Type-species: *Tryphon erythrocephalus* Gravenhorst. Desig. by Viereck, 1914 from three species included by Thomson, 1883.

Udenia Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 202.

Type-species: *Perilissus (Udenia) herrichii* Kriechbaumer. By subsequent monotypy from inclusion by Kriechbaumer, 1892.

Exacrodus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 210.

Type-species: *Exacrodus populans* Morley. By subsequent monotypy from inclusion by Morley, 1913. The type-species is regarded as a synonym of *P. cingulator* (Morley).

Daugna Seyrig, 1935. Paris, Mus. d'Hist. Nat., Mem. (n. s.) 4: 29.

Type-species: *Daugna alluandi* Seyrig. Monotypic and orig. desig. The type-species is regarded as a synonym of *P. testaceoides* (Morley).

Pseudochorus Rao, 1953. Indian Forest Rec., New Ser., Ent. 8: 95.

Type-species: *Pseudochorus kuriani* Rao. Monotypic and orig. desig.

This large genus is known from the Holarctic, Oriental, and Ethiopian Regions, but is represented by only a few species in the latter two regions.

Revision: Burks, 1952. Ent. Soc. Amer., Ann. 45: 94-103.

araius Burks. N. H., Conn., N. Y., N. J., e. S. C., Ont., Mich., Tenn., Colo.

Perilissus araius Burks, 1952. Ent. Soc. Amer., Ann. 45: 101. ♂, ♀.

bicolor (Cresson). Que. s. to S. C., w. to Mich. and Ala.

Mesoleptus bicolor Cresson, 1864. Ent. Soc. Phila., Proc. 3: 269. ♂. Erroneously suppressed as a synonym of *Prionopoda ruficornis* Ashmead in the revision of Burks (1952); *P. bicolor* (Cresson) is not preocc. in *Perilissus* by *P. bicolor* Brischke, 1878.

Prionopoda ruficornis Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 198. ♂.

coloradensis (Ashmead). Ont., N. Dak., Sask., Colo., Utah, Ariz., Calif.

Prionopoda coloradensis Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 198. ♀.

concolor (Cresson). N. B. s. to Va., w. to Mich., Iowa, and Colo. Host: *Dolerus* sp. Townes

(1970) placed *concolor* as a subspecies of *P. filicornis* (Gravenhorst); I have compared specimens of *concolor* and *P. filicornis decoloratus* (which see) and believe that *concolor* is specifically distinct.

Mesoleptus concolor Cresson, 1864. Ent. Soc. Phila., Proc. 3: 270. ♀.

Cteniscus concolor Provancher, 1875. Nat. Canad. 7: 139. Preocc. in *Perilissus* by Cresson, 1864.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 95.

discolor (Cresson). Que. w. to Sask. and Idaho, s. to D. C., Kans., and Colo. Host: *Empria coryli* (Dyar).

Mesoleptus unicolor Cresson, 1864. Ent. Soc. Phila., Proc. 3: 271. [female].

Mesoleptus discolor Cresson, 1864. Ent. Soc. Phila., Proc. 3: 271. ♂. In his revision, Burks (1952) incorrectly suppressed *discolor* as a synonym of *unicolor*, apparently having regarded page priority as grounds for disregarding Townes' (1945) first revisor decision. Townes (1970) placed *discolor* as a subspecies of *P. filicornis* (Gravenhorst), but Townes (1976, personal commun.) has confirmed my supposition that this was an error; it had been his intention to place *Mesoleptus decoloratus* Cresson (which see) as a subspecies of *P. filicornis*.

Pyracmon rufum Provancher, 1882. Nat. Canad. 13: 365. ♀.

Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 498. —Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 95.

filicornis decoloratus (Cresson), n. status. N. S. w. to interior Alaska, s. to Pa., Ill., Colo., and B. C. *P. filicornis filicornis* (Gravenhorst) is European.

Mesoleptus decoloratus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 265. ♂.

Perilissus southwickii Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 196. ♂.

Genus ABSYRTUS Holmgren

Absyrtus Holmgren, 1859 (1858). Svenska Vetensk.-Akad., Ofvers. af ... Forh. 15: 323.

Type-species: *Absyrtus luteus* Holmgren. Monotypic. The type-species is regarded as a synonym of *A. vicinator* (Thunberg).

Eczetesis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 196.

Type-species: *Perilissus paniscoides* Ashmead. By subsequent monotypy from inclusion by Davis, 1897.

This is a small Holarctic genus.

Revision: Cushman, 1924. U. S. Natl. Mus., Proc. 64 (20): 18-20.

arealis Cushman. N. H., N. Y., Pa., Md.

Absyrtus arealis Cushman, 1924. U. S. Natl. Mus., Proc. 64 (20): 19. ♂, ♀.

paniscoides (Ashmead). Vt. w. to Minn., s. to n. Ala. and Tex.

Perilissus paniscoides Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 197. ♀ (♂ misdet.).

perilissoides Cushman. Conn., Ohio, Okla.

Absyrtus perilissoides Cushman, 1924. U. S. Natl. Mus., Proc. 64 (20): 19. ♂, ♀.

Genus LOPHYROPLECTUS Thomson

Lophyroplectus Thomson, 1883. Opusc. Ent. 9: 915.

Type-species: *Paniscus oblongopunctatus* Hartig. Monotypic.

Two species are known, one European and one Japanese.

oblongopunctatus (Hartig). Ont.; Europe. Introduced in N. S., N. B., Que., Maine and Ont. in 1935 through 1941 without becoming established; introduced again in Maine in 1958 and in Ont. in 1962 and 1964 and apparently established in Ont. Host: *Neodiprion sertifer* (Geoffroy). The host listed was the target species for the most recent introductions in Ont.

Ichneumon luteator Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 259; 9: 308. ♀. Preocc. by Fabricius, 1798.

Paniscus oblongopunctatus Hartig, 1838. Jahresber. Fortschr. Forstwiss. Forstl. Naturk. 1: 272. ♂, ♀.

Taxonomy: Roman, 1916. Zool. Bidr. Uppsala 1: 266, 291. —Oehlke, 1966 (1965). Beitr. z. Ent. 15: 855-856.

Biology: Pschorn-Walcher, 1967. Commonwealth Inst. Biol. Control, Tech. Bul. 8: 9-15, 44.

—Griffiths, Rose, and Bird, 1971. Commonwealth Inst. Biol. Control (Trinidad), Tech.

Commun. 4: 107, 157, 158, 160-161. —Rose, 1977 (1976). Canad. Ent. 108: 1395-1398.

Genus OPHELTES Holmgren

Opheltes Holmgren, 1859 (1858). Svenska Vetensk.-Akad., Ofvers. af ... Forh. 15: 323.

Type-species: *Ichneumon glaucopterus* Linnaeus. Monotypic.

Nephopheltes Cushman, 1924. U. S. Natl. Mus., Proc. 64 (20): 16.

Type-species: *Nephopheltes japonicus* Cushman. Monotypic and orig. desig.

This is a Holarctic genus including only two species.

glaucopterus barberi Cushman. Newfoundland (insular) w. to Alaska, s. to S. C., n. Ga., s.e.

Kans., Colo., and s.w. Oreg. Host: *Cimbex americana* Leach. *O. glaucopterus glaucopterus* (Linnaeus) is Eurasian, and *O. glaucopterus apicalis* (Matsumura) occurs in northeastern Asia.

Campoplex flavipennis Provancher, 1874 (May). Nat. Canad. 6 (5): 143. ♀. Preocc. by Cresson, 1874 (January).

Opheltes glaucopterus var. *barberi* Cushman, 1924. U. S. Natl. Mus., Proc. 64 (20): 16. ♀.

Opheltes glaucopterus galbipennis Walkley, 1958. In Krombein et al., U. S. Dept. Agr., Agr. Monog. 2, Sup. 1, p. 54. N. name for *C. flavipennis* Provancher. N. syn.

Biology: Orcutt and Aldrich, 1892. S. Dak. Agr. Expt. Sta., Bul. 30: 5. —Fyles, 1894. Ent. Soc. Ontario, Ann. Rpt. 25: 54, 55. —Comeau, 1944. Ann. de L'Acfas (Montreal) 10: 103.

Morphology: Whitmarsh, 1910. Ent. Soc. Amer., Ann. 3: 197, 204-206, 208.

Genus LATHROLESTES Foerster

Lathrolestes Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 196.

Type-species: *Tryphon clypeatus* Zetterstedt. Desig. by Viereck, 1914 from seven species included by Thomson, 1883

Laphyroschopus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 197.

Type-species: *Tryphon gorskii* Ratzeburg. Desig. by Viereck, 1914 from three species included by Thomson, 1883.

Homalomma Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 198.

Type-species: *Homalomma caliroae* Rohwer. Included and desig. by Rohwer, 1915.

Ecclinops Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 201.

Type-species: *Tryphon orbitalis* Gravenhorst. Desig. by Viereck, 1914 from seven species included by Thomson, 1883.

Camporychus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 208.

Type-species: *Lathrolestes marginatus* Thomson. Monotypically included and desig. by Townes, 1970.

Luphyroschopus Thomson, 1883. Opusc. Ent. 9: 915. Emend.

Lathrolestes Thomson, 1883. Opusc. Ent. 9: 916. Emend.

Tryphonopsis Brauns, 1898. Ver. Freunde Naturgesch. Mecklenburg, Arch. 51: 62.

Type-species: *Tryphonopsis ensator* Brauns. Monotypic.

Ritzemabosia Smits van Burgst, 1912. Tijdschr. v. Ent. 55: 269.

Type-species: *Ritzemabosia meridionalis* Smits van Burgst. Monotypic.

Culmina Benoit, 1955. Mus. Roy. Congo Belge, Tervuren, Ann. (ser. 8, Sci. Zool.) 38: 32.

Type-species: *Culmina ruwenzorica* Benoit. Monotypic and orig. desig.

This is a large genus of Neotropic, Holarctic, Oriental, and Ethiopian distribution. The majority of the species occur in the Holarctic Region. Most species presumably parasitize sawflies, but a European species identified as *L. clypeatus* (Zetterstedt) has been reared from two species of the primitive microlepidopteran family Eriocraniidae and *L. mnemonicae* (Rohwer) has also been reared from an eriocraniid.

caliroae (Rohwer). Northern Va., n. Ala. Host: *Caliroa* sp. on *Nyssa sylvatica*, *Caliroa* sp. on *Quercus prinus*.

Homalomma caliroae Rohwer, 1915. U. S. Natl. Mus., Proc. 49: 218. ♀.

Homalomma ericompoideis Rohwer, 1915. U. S. Natl. Mus., Proc. 29: 219. ♀.

constrictus (Provancher). Que.

Phygadeuon constrictus Provancher, 1882. Nat. Canad. 13 (no. 155): 336; 13 (no. 156): 357. ♂.

iladus (Davis). Que., N. Y., R. I., Md., n. Ga., Ont. Host: *Metallus rohweri* MacG.

Spanotecnus iladus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 303. ♂.

Lathrolestes visscheri DeGant, 1933. U. S. Natl. Mus., Proc. 82 (11): 5. ♂.

Lathrolestes metalli Cushman, 1933. U. S. Natl. Mus., Proc. 82 (14): 10. ♂.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 100 (syn.).

luteolator (Gravenhorst). N. Y., w. N. C., n. Ga., Wis.; Europe.

Mesoleptus luteolator Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 42. ♂.

Tryphon Gorskii Ratzeburg, 1852. Ichn. d. Forstins., v. 3, p. 126. ♂.

Polyoncus suburbe Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 306. ♀.

Taxonomy: Pfankuch, 1906. Ztschr. System. Hym. Dipt. 6: 22 (syn.). —Townes, 1944. Amer. Ent. Soc., Mem. 11: 502 (syn.).

mentalis (Davis). N. H., N. C., n. Ga.

Polyoncus mentalis Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 306. ♀.

Monoblastus nigriventris Ashmead, 1902. In Slosson, Ent. News 12: 321. Nomen nudum.

mnemonicae (Rohwer). Northern Va. Host: *Dyseriocrania griseocapitella* (Wlsh.). Notes in the U. S. Natl. Museum seem to indicate that this host record is correct. The host is a

leaf-mining microlepidopteran of the primitive family Eriocraniidae; it spins a cocoon in the soil.

Sympherta mnemonicae Rohwer, 1914. Ent. Soc. Wash., Proc. 16: 141. ♂, ♀.

nasoni Davis. Ill., Sask., Colo., Alta., Mont.

Lathrolestes nasoni Davis, 1897. Amer. Ent. Soc., Trans. 24: 264. ♀ (♂ misdet.?).

Lathrolestes similis Davis, 1897. Amer. Ent. Soc., Trans. 24: 265. ♀.

Lathrolestes nasonii Dalla Torre, 1901. Cat. Hym., v. 3, p. 321. Emend.

nigricollis (Thomson). Europe. Introduced in insular Newfoundland in 1973; because only ten adults were released, establishment would seem to have been precluded. Host: *Fenusa pusilla* (Lep.). The host cited was the target species for the release of *nigricollis* in Newfoundland.

Perilissus (Luphyroscopus) nigricollis Thomson, 1883. Opusc. Ent. 9: 915. ♂.

Perilissus minutus Bridgman, 1888 (1887). Ent. Soc. London, Trans. 35: 370. ♂. syn.?

obscorellus (Davis). Conn., N. Y.

Spanotecnus obscorellus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 304. ♀.

pictus Cushman. Eastern S. Dak.

Phytodietus truncatus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 371. ♀. Preocc. in *Lathrolestes* by Provancher, 1888.

Lathrolestes pictus Cushman, 1933. U. S. Natl. Mus., Proc. 82 (14): 11. ♂.

Lathrolestes cinctus Townes, 1945. Amer. Ent. Soc., Mem. 11: 502. N. name for *P. truncatus* Davis.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 11: 100.

platynus (Davis). Southern Mich.

Polygoncus platynus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 306. ♂.

Polygoncus unicus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 306. ♀.

rufigaster Cushman. Maine, Va., N. C., Ont., Ohio. Host: *Metallus rohweri* MacG., sawfly on blackberry, leaf miner.

Lathrolestes rufigaster Cushman, 1933. U. S. Natl. Mus., Proc. 82 (14): 13. ♂, ♀.

scutellatus (Ashmead). D. C., n. Va.

Prionopoda scutellata Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 441. ♀.

tomostethi (Cushman). Mass., N. Y., Ohio. Host: *Tomostethus multictinctus* (Roh.).

Perilissus tomostethi Cushman, 1935. Wash. Acad. Sci., Jour. 25: 558. ♂, ♀.

truncatus (Provancher). Western N. C.? s.w. B. C.

Mesochorus truncatus Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 365. ♀.

TRIBE SCOLOBATINI

This small Neotropic, Holarctic, and Oriental tribe includes three genera, two of which are represented in North America.

Genus PHYSOTARSUS Townes

Physotarsus Townes, 1966. In Townes and Townes, Amer. Ent. Inst., Mem. 8: 139, 330.

Type-species: *Tryphon maculipennis* Cresson. Orig. desig.

This is apparently a moderate-sized genus with one or more undescribed species occurring in Texas.

Genus SCOLOBATES Gravenhorst

Scolobates Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 357.

Type-species: *Scolobates crassitarsus* Gravenhorst. Desig. by Westwood, 1840.

Aglyphus Giraud, 1872. Soc. Ent. de France, Ann. (ser. 5) 1: 411.

Type-species: *Aglyphus nigripennis* Giraud. Monotypic.

Parabraconia Schmiedeknecht, 1914. Opusc. Ichn., v. 5, p. 2803.

Type-species: *Parabraconia nigripennis* Schmiedeknecht. By subsequent monotypy from inclusion by Schmiedeknecht, 1925. of *S. nigripennis* (Giraud); both names are preocc. by *Scolobates nigripennis* Sichel, 1860. The type-species is regarded

as a synonym of *S. nigripennis* (Giraud); both names are preocc. by *Scolobates nigripennis* Sichel, 1860.

This is a small Holarctic and Oriental genus.

auriculatus (Fabricius). N. H., Mass., N. Y., Pa., Md., Ont., Mich., Tex., n. B. C. Ecology: Three specimens in the U. S. Natl. Museum collection were collected in July from snow at an altitude of 7000 ft. at London Hill Mine, Bear Lake, B. C. Host: *Arge clavicornis* (F.), *A. pectoralis* (Leach), *A. scapularis* (Klug).

Ichneumon auriculatus Fabricius, 1804. Systema Piezatorum, p. 69.

Ichneumon auriculator Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 266; 9: 323. Emend.

Ichneumon elevator Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 266; 9: 323. ♂. Preocc. by Panzer, 1799.

Scolobates crassitarsus Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 360. ♂, ♀.

Scolobates hylotomae Kriechbaumer, 1877. Ent. Nachr. 3: 135. ♂, ♀.

Prionopoda canadensis Harrington, 1892. Canad. Ent. 24: 98. ♀.

Scolobates auriculatus var. *niger* Roman, 1917. Ent. Tidskr. 38: 273. ♀. Syn.?

Scolobates auriculatus var. *nigrifacies* Teunissen, 1953. Tijdschr. v. Ent. 96: 16. ♀. Syn.?

Taxonomy: Holmgren, 1859 (1858). Svenska Vetensk.-Akad., Ofvers af ... Forh. 15: 330 (syn.). —Roman, 1912. Zool. Bidr. Uppsala 1: 235, 252 (syn.). —Bauer, 1961. Beitr. z. Ent. 11: 745 (syn.).

Biology: Pschorn-Walcher and Kriegl, 1965. Ztschr. f. Angew. Ent. 56: 268-269.

TRIBE MESOLEIINI

This is a large Holarctic tribe. Taxonomically, it is possibly the most difficult group of Ichneumonidae. This seems to be reflected in the fact that to use Townes' (1970) key to the genera it is particularly necessary to have a collection including reliably identified representatives of the various genera.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 104-127 (genera of world).

Genus OTLOPHORUS Foerster

Otlophorus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 202.

Type-species: *Tryphon vepretorum* Gravenhorst. Desig. by Viereck, 1914 from five species included by Thomson, 1895.

Neales Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 204.

Type-species: *Tryphon vepretorum* Gravenhorst. By subsequent monotypy from inclusion by Kriechbaumer, 1897.

Dialges Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 206.

Type-species: *Tryphon vepretorum* Gravenhorst. By subsequent monotypy from inclusion by Kriechbaumer, 1897.

Aeolometis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 207.

Type-species: *Scolobates italicus* Gravenhorst. By subsequent monotypy from inclusion by Thomson, 1892.

Tachyporthus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 210.

Type-species: *Scolobates italicus* Gravenhorst. By subsequent monotypy from inclusion by Kriechbaumer, 1901.

Holmgrenia Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 213.

Type-species: *Holmgrenia lauceolata* Davis. Desig. by Viereck, 1914 from six species included by Davis, 1898.

Aelometis Thomson, 1894. Opusc. Ent. 19: 2034. Emend.

Otlophorinus Hincks, 1944. Roy. Ent. Soc. London, Proc. (ser. B) 13: 35.

Type-species: *Mesoleius pulverulentus* Holmgren. Orig. desig.

This is a moderate-sized genus of Holarctic distribution.

fissus (Provancher). Que., N. Y., R. I.

Mesoleius fissus Provancher, 1879. Nat. Canad. 11: 257. ♂.

lanceolatus (Davis). N. Y., Ont., Colo., w. Wash.

Holmgrenia lanceolata Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 294. ♂, ♀.

Genus ATITHASUS Foerster

Atithasus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 210.

Type-species: *Atithasus stellarius* Davis. By subsequent monotypy from inclusion by Davis, 1898.

A single species is known.

bimaculatus (Ashmead). N. H., Pa., Va., Ind., Ill., Iowa, e. Kans., Tex.

Grypocentrus bimaculatus Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 199. ♀.

Atithasus stellarius Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 291. ♂, ♀.

Genus BARYTARBES Foerster

Polytrera Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 202.

Type-species: *Mesoleius (Barytarbus) laeviusculus* Thomson. Desig. by Viereck, 1914 from two species included by Thomson, 1892.

Isodiaeta Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 204.

Type-species: *Tryphon segmentarius* Gravenhorst. Monotypically included and desig. by Perkins, 1962. The type-species is Gravenhorst's identification of *Ichnemon segmentarius* Fabricius.

Hybristes Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 210. Preocc. by Reichenbach, 1850.

Type-species: *Tryphon adpropinquator* Gravenhorst. Monotypically included and desig. by Townes, Momoi, and Townes, 1965.

Barytarbes Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 212.

Type-species: *Tryphon colon* Gravenhorst. Desig. by Viereck, 1914 from five species included by Thomson, 1883.

Barytarbus Thomson, 1883. Opusc. Ent. 9: 931. Emend.

Polytreres Thomson, 1892. Opusc. Ent. 17: 1873. Emend.

This is a Holarctic genus of moderate size.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 116 (Nearctic spp. assigned).

antennatus (Provancher). Que., N. Y.?

Mesoleius antennatus Provancher, 1877. Nat. Canad. 9: 15. ♀. Barron's (1975) rejection of the lectotype selected by Gahan and Rohwer (1918) appears to be valid inasmuch as Provancher did not indicate that he had more than one specimen.

Mesoleius antennatus Provancher, 1879. Nat. Canad. 11: 260. ♀. Preocc. by Provancher, 1877; Provancher's 1879 description is apparently an inadvertent second description as a new species of the same specimen he described in 1877.

Taxonomy: Gahan and Rohwer, 1918. Canad. Ent. 50: 31. —Barron, 1975. Nat. Canad. 102: 426.

compos (Davis). "Canada," Mich.

Alexeter compos Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 321. ♂.

honestus (Cresson). Que., N. H., Conn., N. Y., N. J., Pa., Ill.

Mesoleptus honestus Cresson, 1868. Amer. Ent. Soc., Trans. 2: 98. ♂, ♀.

Mesoleptus albifrons Cresson, 1868. Amer. Ent. Soc., Trans. 2: 98. "♀" = ♂.

provancheri (Cushman). Que., N. Y., Pa., Mich.

Mesoleptus variabilis Provancher, 1883. Nat. Canad. 14: 7. ♀. Preocc. by Provancher, 1875.

Mesoleptus provancheri Cushman, 1917. Ent. Soc. Wash., Proc. 19: 165. N. name for *M. variabilis* Provancher, 1883.

Genus ALEXETER Foerster

Alexeter Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 199.

Type-species: *Mesoleptus ruficornis* Gravenhorst. Desig. by Viereck, 1914 from three species included by Woldstedt, 1877. The type-species is regarded as a synonym of *A. sectator* (Thunberg).

Adranes Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 205. Preocc. by LeConte, 1850.

Type-species: *Tryphon multicolor* Gravenhorst. Monotypically included and desig. by Townes, Momoi, and Townes, 1965.

Zemiophron Foerster 1868. Naturh. Ver. Rheinlande, Verh. 25: 206.

Type-species: *Mesoleius laevis* Strobl. Monotypically included and desig. by Perkins, 1962.

This is a large Holarctic genus.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 116-117 (Nearctic spp. assigned).

canaliculatus (Provancher). Que. w. to s.e. Alaska, s. to D. C. and n. Calif.

Paniscus canaliculatus Provancher, 1874. Nat. Canad. 6: 105. ♂.

Paniscus albotarsatus Provancher, 1874. Nat. Canad. 6: 106. ♂.

difficilis (Davis). Colo., s.w. Alta., w. Wash.

Rhaestes difficilis Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 312. ♂.

innoxius (Cresson). Nev., s. B. C., w. Wash.

Mesoleptus innoxius Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 371. ♂.

lucens (Provancher). Que., N. H., N. C., n. Ga., s. Mich.

Campoplex lucens Provancher, 1874. Nat. Canad. 6: 144. ♂. Barron (1975) regarded the holotype of *C. lucens* as being lost; therefore, application of the name should be based upon the synonymy of Townes (1945).

Mesoleptus riparius Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 315. ♂, ♀.

Hadroctylus affinis Ashmead, 1902 In Slosson, Ent. News 13: 6. Nomen nudum.

Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 514. —Barron, 1975. Nat. Canad. 102: 499-500.

luteifrons (Cresson). Southwestern N. W. T.

Mesoleptus luteifrons Cresson, 1868. Amer. Ent. Soc., Trans. 2: 99. ♂.

notatus Davis. Alta., w. Wash., Oreg.

Alexeter notatus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 321. ♂.

scapularis (Cresson). N. H., R. I., Conn., N. Y., N. J., Md.

Mesoleptus scapularis Cresson, 1868. Amer. Ent. Soc., Trans. 2: 98. ♂.

Genus PROTARCHUS Foerster

Protarchus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 201.

Type-species: *Tryphon rufus* Gravenhorst. By subsequent monotypy from inclusion by Woldstedt, 1877. The type-species is regarded as a synonym of *P. testatorius* (Thunberg).

Zacalles Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 201.

Type-species: *Zacalles magnus* Davis. By subsequent monotypy from inclusion by Davis, 1898.

Protarchoides Cushman, 1922. U. S. Natl. Mus., Proc. 61 (8): 25.

Type-species: *Protarchoides longipes* Cushman. Monotypic and orig. desig.

This is a small Holarctic genus.

Revision: Walley, 1938. Canad. Ent. 70: 230-232.

longipes (Cushman). Que., Maine, N. H., n. Mich., s. B. C. Host: *Trichiosoma* sp.

Psilosarge(?) *longipes* Ashmead, 1902. In Slosson, Ent. News 13: 321. Nomen nudum.

Protarchoides longipes Cushman, 1922. U. S. Natl. Mus., Proc. 61 (8): 26. ♀.

Protarchoides mandibularis Cushman, 1924. U. S. Natl. Mus., Proc. 64(20): 9. ♀.

magnus (Davis). N. H., N. Y.

Zacalles magnus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 283. ♀.

mellipes (Provancher). Northern Ont., s. Alta., B. C.

Coleocentrus mellipes Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 113. ♂.

Contrary to Barron (1975) the lectotype was selected by Walley (1938).

Protarchoides pallipes Cushman, 1927. U. S. natl. Mus., Proc. 72 (13): 15. ♀.

Taxonomy: Walley, 1938. Canad. Ent. 70: 231 (syn. and lectotype selection). — Barron, 1975. Nat. Canad. 102: 508.

pallidicornis (Walley). Northern Ont.

Protarchoides pallidicornis Walley, 1938. Canad. Ent. 70: 231. ♀.

Genus LAMACHUS Foerster

Zaphthora Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 206.

Type-species: *Tryphon eques* Hartig. Monotypically included and desig. by Townes, Momoi, and Townes, 1965.

Adexioma Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 206.

Type-species: *Adexioma angularia* Davis. By subsequent monotypy from inclusion by Davis, 1898.

Lamachus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 206

Type-species: *Tryphon lophyrum* Hartig. Desig. by Viereck, 1914 from six species included by Thomson, 1892. Included by Thomson as *T. lophyrorum* "Hartig," *lophyrorum* being an emendation of Ratzeburg, 1844. The type-species is regarded as a synonym of *L. frutetorum* (Hartig).

Torocampius Schmiedeknecht, 1913. Opusc. Ichn. v. 5, p. 2797.

Type-species: *Tryphon eques* Hartig. By subsequent monotypy from inclusion by Schmiedeknecht, 1914.

Bathyglyptus schmiedeknecht, 1913. Opusc. Ichn., v. 5, p. 2802. Preocc. by Case, 1911.

Type-species: *Bathyglyptus australis* Schmiedeknecht. By subsequent monotypy from inclusion by Schmiedeknecht, 1914.

This is a Holarctic genus of moderate size. The species parasitize Diprionidae.

albopictus Cushman. Japan. Introduced in N. B. in 1939, but the small number of individuals (22) released would seem to have precluded establishment. The target species for the release in N. B. was *Gilpinia hercyniae* (Htg.).

Lamachus albopictus Cushman, 1937. Insecta Matsumurana 12: 37. ♂, ♀.

angularis (Davis). Southern Idaho, Wash., w. Oreg. Host: *Neodiprion scutellatus* Roh., *N. tsugae* Midd.

Adexioma angularia Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 284. ♀.

Lamachus oregon Cushman, 1939. Wash. Acad. Sci., Jour. 29: 401. ♂, ♀.

coalitorius (Thunberg). Europe. Introduced in N. S., N. B., Que., N. H., Vt., Mass., and Ont. between 1936 and 1940, apparently without becoming established. The target species for releases in North America was *Gilpinia hercyniae* (Htg.).

Ichneumon coalitorius Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 278; 9: 358. [male].

Mesoleius ophthalmicus Holmgren, 1857 (1855). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 162. ♂. In placing the names below in synonymy with *ophthalmicus*, Oehlke (1966) apparently overlooked the fact that Roman (1912) had suppressed *ophthalmicus* as a synonym of *coalitorius*.

Mesoleius marginatus Brischke, 1871. Phys.-Oekonom. Gesell. Koenigsberg, Schr. 11: 74. ♂. N. syn.

Mesoleius spectabilis Holmgren, 1876. Svenska Vetensk.-Akad. Handl. (n. f.) 13: 8. ♀. N. syn.

Taxonomy: Roman, 1912. Zool. Bidr. Uppsala 1: 244, 291. — Oehlke, 1966 (1965). Beitr. z. Ent. 15: 861-862.

Biology: Morris, Cameron, and Jepson, 1937. Bul. Ent. Res. 28: 369. — Finlayson and Finlayson, 1958. Canad. Ent. 90: 587-589.

contortionis Davis. Maine s. to n. Fla., w. to Wis. and Ark. Host: *Gilpinia hercyniae* (Htg.), *Neodiprion abietis* (Harris), *N. lecontei* (Fitch), *N. nanulus nanulus* Schedl, *N. pratti banksianae* Roh.

Lamachus contortionis Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 284. ♀.

Lagarotis diprioni Rohwer, 1915. U. S. Natl. Mus., Proc. 49: 217. ♂, ♀.

equus (Hartig). Europe. Introduced in N. B., Que., Vt., N. J., and Ont. between 1936 and 1941, apparently without becoming established. Host: *Neodiprion sertifer* (Geoff.). The host cited was one of the target species for releases in North America; the other target species was *Gilpinia hercyniae* (Htg.).

Tryphon equus Hartig, 1838. Jahresber. Fortschr. Forstwiss. Forstl. Naturk. 1: 272. [male, female].

Mesoleius silvarum Holmgren, 1876. Svenska Vetensk.-Akad. Handl. (n. f.) 13: 10. ♂, ♀.

Taxonomy: Oehlke, 1966 (1965). Beitr. z. Ent. 15: 858-859.

Biology: Pschorn-Walcher, 1967. Commonwealth Inst. Biol. Control, Tech. Bul. 8: 15-18, 45.

lophyri (Ashmead). N. B., Maine, N. H., Mass., Ont., Wis. Host: *Neodiprion abietis* (Harris), *N. abbotii* (Leach), *N. nanulus nanulus* Schedl, *N. pinetum* (Nort.), *N. pinusrigidae* (Nort.), *N. pratti banksianae* Roh.

Neoryma lophyri Ashmead, 1898. In Dimmock and Ashmead, Ent. Soc. Wash., Proc. 4: 169. ♂, ♀.

ruficoxalis (Cushman). Maine, Ont., s. Man. *Neodiprion abietis* (Harris).

Labrossyla ruficoxalis Cushman, 1919. Ent. Soc. Wash., Proc. 21: 118. ♀.

Lamachus ruficornis (!) Cushman, 1939. Wash. Acad. Sci., Jour. 29: 400.

tsugae Cushman. Que., Ont., w. Oreg. Host: *Neodiprion abbotii* (Leach), *N. nanulus nanulus* Schedl, *N. pratti banksianae* Roh., *N. tsugae* Midd.

Lamachus tsugae Cushman, 1939. Wash. Acad. Sci., Jour. 29: 401. ♂, ♀.

virginianus (Rohwer). Mass., Va., e. N. C., Ohio. Host: *Neodiprion lecontei* (Fitch). Probably not distinct from *L. lophyri* (Ashmead).

Lagarotis virginianus Rohwer, 1915. U. S. Natl. Mus., Proc. 49: 218. ♂.

Genus NEOSTROBLIA Heinrich

Neostroblia Heinrich, 1953. Wien. Ent. Gesell., Ztschr. 38: 211.

Type-species: *Mesoleius ruficollis* var. *pseudolituratus* Strobl. Monotypic and orig. desig.

This Holarctic genus includes two described species. The type-species is European.

incessans (Davis). N. H., Colo.? The lectotype was collected on Mt. Washington, N. H. by A. T. Slosson, apparently in the "alpine region."

Rhaestes incessans Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 311. ♀.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 119.

Genus SCOPESES Foerster

Scopesis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 209.

Type-species: *Mesoleius guttiger* Holmgren. Desig. by Viereck, 1914 from eleven species included by Thomson, 1894. Perkins (1962) regarded the type-species as being a synonym of *S. bicolor* (Gravenhorst).

Scoparches Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 211.

Type-species: *Tryphon bicolor* Gravenhorst. Monotypically included and desig. by Perkins, 1962.

Scopesus Thomson, 1894. Opusc. Ent. 19: 2028. Emend.

Hyposyntactus Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 217.

Type-species: *Hyposyntactus flavifrons* Ashmead. Monotypic.

This is a Holarctic genus of moderate size.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 120 (Nearctic spp. assigned).

gesticulator tarda (Provancher). Que. w. to Alaska, s. to n. Ga., Mich., Colo., and Oreg. S. *gesticulator gesticulator* (Thunberg) is Eurasian.

Tryphon tardus Provancher, 1875. Nat. Canad. 7: 119. ♀.

Mesoleius? laetus Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 372. ♂. Formerly preocc. in *Mesoleptus* by Gravenhorst, 1829.

- Lampronota nigropicta* Davis, 1895. Amer. Ent. Soc., Trans. 22: 31. ♂. Syn.?; regarded as a subspecies distinct from *gesticator tarda* by Townes (1970), but evidently would have a range entirely overlapped by *g. tarda*.
- Mesoleptus distinctus* Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 314. ♂, ♀. Syn.? Preocc. by Cresson, 1864.
- Mesoleptus nigralis* Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 314. ♀. Syn.?
- Mesoleptus pictus* Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 315. ♂, ♀. Syn.?
- Presumably the species described in Davis' key as *distinctus*.
- Mesoleptus Vancouveriensis* Dalla Torre, 1901. Cat. Hym. v. 3, p. 365. N. name for *Mesoleius laetus* Cresson.
- Scopasis*(?) *monticola* Ashmead, 1902. In Slosson, Ent. News 13: 6. Nomen nudum.
- Hyposyntactus flavifrons* Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 217. ♂.
- Scopesis monticola* Cushman, 1922. U. S. Natl. Mus., Proc. 61 (8): 26. ♂, ♀. Syn.?
- rufonotatus fidelis** (Davis). N. H., N. Y., N. C., n. Ga., w. Wash. *S. rufonotatus rufonotatus* (Holmgren) is European.
- Mesoleius fidelis* Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 297. ♂, ♀.

Genus HIMERTA Foerster

- Ithagenes* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 158. Preocc. by Agassiz, 1846. Type-species: *Ichneumon defectivus* Gravenhorst. Monotypically included and desig. by Townes, 1970.
- Himerta* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 200. Type-species: *Euryproctus (Himertus) bisannulatus* Thomson. Desig. by Viereck, 1914 from two species included by Thomson, 1883.
- Clepsiorthus* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 200. Type-species: *Mesoleptus rubiginosus* Cresson. Desig. by Viereck, 1914 from four species included by Davis, 1898.
- Enoecetis* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 211. Type-species: *Enoecetis scutellaris* Kriechbaumer. By subsequent monotypy from inclusion by Kriechbaumer, 1897.
- Dolioctenus* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 212. Type-species: *Ichneumon defectivus* Gravenhorst. Monotypically included and desig. by Perkins, 1962.
- Himertus* Thomson, 1883. Opusc. Ent. 9: 926. Emend.
- Neoprotarchus* Cushman, 1924. U. S. Natl. Mus., Proc. 64 (20): 10. Type-species: *Neoprotarchus ater* Cushman. Monotypic and orig. desig.
- Daisetsuzania* Uchida, 1930. Hokkaido Imp. Univ., Faculty Agr., Jour. 25: 289. Type-species: *Daisetsuzania albifrons* Uchida. Monotypic and orig. desig.

This is a Holarctic genus of moderate size.

- annulata** (Davis). Northern Mich.
- Lampronota annulata* Davis, 1895. Amer. Ent. Soc., Trans. 22: 31. ♂.
- atra** (Cushman). Alta., n.w. Calif.
- Neoprotarchus ater* Cushman, 1924. U. S. Natl. Mus., Proc. 64 (20): 10. "♂" = ♀.
- flavida** (Davis). N. H., e. N. C., Mich., Mo., S. Dak., Kans., Alta., w. Wash.
- Clepsiorthus flavidus* Davis, 1896. In Slosson, Ent. News 7: 264. Nomen nudum.
- Clepsiorthus flavidus* Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 326. ♀.
- Himertus dakota* Cushman, 1927. U. S. Nat. Mus., Proc. 72 (13): 14 ♂ ♀, ♀.
- rubiginosa** (Cresson). Alta., s.w. B. C., Wash., Calif.
- Mesoleius? rubiginosus* Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 372. ♂.

Genus RHINOTORUS Foerster

- Spudaea* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 211. Preocc. by Snellen van Vollenhoven, 1867. Type-species: *Tryphon leucostomus* Gravenhorst. Desig. by Viereck, 1914 from three species included by Thomson, 1883.
- Rhinotorus* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 211.

Type-species: *Spudaea longicornis* Schmiedeknecht. Included and desig. by Perkins, 1962.

Spudaeus Thomson, 1883. Opusc. Ent. 9: 932. Emend. Preocc. by Gistel, 1848.

Prospudaea Hincks, 1944. Roy. Ent. Soc. London, Proc., Ser. B: Taxonomy 13: 35. N. name for *Spudaea* Foerster.

This is a small Holarctic genus.

ovalis (Davis). N. H., Mich., Colo., w. Wash.

Spudaea ovale Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 291. ♂, ♀.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 122.

Genus ARBELUS Townes

Arbelus Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 122.

Type-species: *Mesoleius idahoensis* Davis. Orig. desig.

This is a Holarctic genus of moderate size. There are five undescribed or undetermined Nearctic species.

idahoensis (Davis). Colo., n. Idaho, w. Wash., n.w. Oreg.

Mesoleius idahoensis Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 297. ♂, ♀. Suppressed as a synonym of *M. nuperus* Davis by Townes (1945); apparently resurrected from synonymy by Townes (1970).

Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 515.

intimatus (Davis). Mont.?, Colo., Wash.

Mesoleptus intimatus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 317. ♂.

nuperus (Davis). N. H., N. Y.

Mesoleius nuperus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 296. ♀.

Genus CAMPODORUS Foerster

Phagesorus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 212.

Type-species: *Tryphon caligatus* Gravenhorst. Monotypically included and desig. by Townes, Momoi, and Townes, 1965.

Campodorus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 213.

Type-species: *Mesoleius melanogaster* Holmgren. Monotypically included and desig. by Perkins, 1962.

Cuboscopesis Heinrich, 1952. Ann. and Mag. Nat. Hist. (12) 5: 1080.

Type-species: *Cuboscopesis epachthoides* Heinrich. Monotypic and orig. desig.

According to Townes (1970), this is a very large Holarctic genus.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 123-124.

alaskensis (Ashmead). Southwestern Alaska.

Calliphrrus alaskensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 220. ♂, ♀.

aquilonaris (Walkley). Southwestern Alaska.

Calliphrrus frigidus Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 222. ♂. Formerly preocc. in *Mesoleius* by Holmgren, 1857.

Mesoleius aquilonaris Walkley, 1958. In Krombein *et al.*, U. S. Dept. Agr. Agr. Monog. 2, Sup. 1, p. 56. N. name for *Calliphrrus frigidus* Ashmead.

clypeatus (Ashmead). Southwestern Alaska.

Calliphrrus clypeatus Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 220. ♀ (♂ misdet.).

contractus (Davis). Alta.

Mesoleius contractus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 297. ♀. Preocc. by Holmgren, 1857; not renamed because of uncertain synonymy.

convexus (Davis). N. H.

Mesoleius convexus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 298. ♀.

Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 519 (suppressed as syn. of *Mesoleius visoris* Davis). — Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 124 (regarded as not congeneric with *M. visoris*).

euuræ (Ashmead). Northeastern Calif. Host: *Pontania resinicola* (Marl.).

Bassus euuræ Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 440. ♂.

insularis (Ashmead). Southwestern Alaska, Wash.

Zootrophes insularis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 225. ♂.

kukakensis (Ashmead). Southwestern Alaska.

Calliphirus kukakensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 222. ♀.

litratus (Holmgren). Southeastern N. W. T.?; n. Eurasia. Recorded from Akpatok Isl., N. W.

T. by Poulton (1934); specimen apparently identified by C. Ferriere.

Mesoleius litratus Holmgren, 1857 (1855). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 147. ♂.

Mesoleius Sahlbergi Woldstedt, 1874. Bidr. till Kann. Finlands Nat. 21: 44. ♀.

Mesoleius (Saotus) rubidus Thomson, 1883. Opusc. Ent. 9: 935. ♀. Syn.?; suppressed as a syn. of *litratus* "var." *Sahlbergi* by Roman (1909).

Mesoleius sahlbergii Dalla Torre, 1901. Cat. Hym., v. 3, p. 266. Emend.

Taxonomy: Roman, 1909. In Hamberg, naturw. Untersuch. Sarekgebirges

Schwedisch-Lappland, v. 4, p. 346. — Poulton, 1934. Ann. and Mag. Nat. Hist. (10) 14: 53.

— Hellen, 1950. Notulae Ent. 30: 29 (syn.). — Townes, Momoi, and Townes, 1965. Amer.

Ent. Inst., Mem. 5: 262 (generic placement).

picens (Davis). Colo., Alta.

Holmgrenia picens Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 294. ♀.

sexcarinatus (Ashmead). Alaska.

Polyterus sexcarinatus Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 217. ♀.

Genus SMICROLIUS Thomson

Syndipnus subg. *Smicrolius* Thomson, 1895. Opusc. Ent. 19: 2008.

Type-species: *Syndipnus (Smicrolius) parvicar* Thomson. Monotypic.

According to Townes (1970) this small Holarctic genus includes two undescribed Nearctic species.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 124.

Genus MESOLEIUS Holmgren

Mesoleius Holmgren, 1856 (1854). Svenska Vetensk.-Akad. Handl. 75: 69.

Type-species: *Tryphon aulicus* Gravenhorst. Desig. by Viereck, 1912.

Allocritus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 211.

Type-species: *Mesoleius tenuiventris* Holmgren. Monotypically included and desig. by Perkins, 1962.

Cryptocentrus Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 156. Preocc. by Ehrenberg, 1837.

Type-species: *Tryphon submarginatus* Cresson. Monotypic.

Mesolius Pfankuch, 1906. Ztschr. System. Hym. Dipt. 6: 85. Emend.

Alfkenia Pfankuch, 1906. Ztschr. System. Hym. Dipt. 6: 89. Syn.?

Type-species: *Ichneumon integrator* Mueller. Monotypic.

Habrodemus Schmiedeknecht, 1913. Opusc. Ichn., v. 5, p. 2799.

Type-species: *Mesoleius elongatus* Brischke. By subsequent monotypy from inclusion by Schmiedeknecht, 1914.

This is a large Holarctic genus.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 125 (restriction of definition and list of Nearctic spp. remaining in genus).

articularis Davis. Sask., Colo., Wash.

Mesoleius articularis Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 300. ♀.

audax Davis. N. H.

Mesoleius audax Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 299. ♀.

conformus Davis, N. H., R. I., Alta.

Mesoleius conformus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 300. ♂, ♀.

cressoni (Davis). Tex.

Holmgrenia cressoni Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 293. ♀.

Holmgrenia cressonii Dalla Torre, 1901. Cat. Hym., v. 3, p. 270. Emend.

excavatus (provancher). Que.

Tryphon excavatus Provancher, 1875. Nat. Canad. 7: 310. ♂.

Taxonomy: Barron, 1975. Nat. Canad. 102: 468.

insidiosus (Cresson). N. H., Mass., N. Y., Pa., Ont., Ohio, Mich., Iowa, Colo.

Mesoleptus insidiosus Cresson, 1868. Amer. Ent. Soc., Trans. 2: 98. ♂.

Mesoleius convergens Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 296. ♀.

Mesoleius visoris Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 296. ♂, ♀.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 125 (syn.).

minor (Ashmead). Southwestern Alaska.

Calliphurur affinis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 221. ♀. Preocc. in *Mesoleius* by Brischke, 1892.

Calliphurur minor Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 221. ♂, ♀.

Mesoleius congener Walkley, 1958. In Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2, Sup. 1, p. 55, 56. N. name for *C. affinis* Ashmead.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 125 (syn.).

pertinax Davis. Maine, N. H.

Mesoleius pertinax Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 299. ♂, ♀.

pulchranotus Davis. N. Y.?, Tex. Host: *Periclista media* (Nort.)?

Mesoleius pulchranotus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 298. ♂.

stejnegeri Ashmead. Eastern U. S. S. R. The type locality is Ostrov Bering (i.e. Bering Isl.), U. S. S. R.; this was incorrectly indicated as an Alaskan locality in previous Nearctic catalogs of Ichneumonidae. However, it seems likely that the species will be found in the Aleutian Islands.

Mesoleius stejneri Ashmead, 1899 (1898). In Jordan, Fur Seals and Fur Seal Isls. No. Pacific, v. 4, p. 337. ♀.

submarginatus (Cresson). Que., N. W. T.?, and B. C., s. to N. C., Ill., and Colo.

Tryphon? submarginatus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 274. ♂.

tarsalis (Cresson). Que., R. I., Conn., N. Y., Md., N. C., Alta. Host: *Croesus latitarsus* Nort.

Tryphon tarsalis Cresson, 1868. Amer. Ent. Soc., Trans. 2: 106. ♀ (♂ misdet.?).

tenthredinis Morley. Newfoundland (insular) w. to n. Alta. and central B. C., s. to n. Md., Wis., and Mont.; Europe; Japan. Introduced. Host: *Pristiphora erichsonii* (Htg.), *Gilpinia hercyniae* (Htg.). Parasitism of *G. hercyniae* appears at most to be very occasional. Effectiveness as a parasite of *P. erichsonii* decreased greatly as a resistant strain of *erichsonii* capable of encapsulating the eggs of *M. tenthredinis* spread throughout much of the present Nearctic range of *erichsonii*. Attempts to diversify the gene pool of the North American population of *tenthredinis* (English origin) by releasing specimens from Bavaria which are resistant to egg encapsulation are presumably too recent (1963 through 1969) for signs of success to be evident.

Mesoleius tenthredinis Morley, 1912. In Hewitt, Canada Expt. Farms, Bul. (ser.2) 10: 26. ♂, ♀.

Mesoleius romani Teunissen, 1945. Leyden Rijks Mus. van Natuurlijke Hist., Zool. Meded. 25: 209. ♂, ♀.

Taxonomy: Townes and Townes, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 334 (syn.).

Biology: Hewitt, 1912. Canada Expt. Farms, Bul. (ser. 2) 10: 25-28. —Graham, 1931. Canad. Ent. 63: 99-102. —Hopping, Leach, Hugh, and Morgan, 1943. Sci. Agr. 24: 58. —Lejeune, 1946. Canada Dept. Agr., Sci. Serv., Div. Ent., Forest Insect Invest., Bi-mon. Prog. Rpt. 3 (2): 2-3. —Drooz, 1953. Jour. Econ. Ent. 46: 828. —Graham, 1953. Quebec Soc. Prot. Plants, Ann. Rpt. 35: 61. —Muldrew, 1953. Canad. Jour. Zool. 31: 313. —Muldrew, 1956. Forestry

Chron. 32: 21. —Drooz, 1957. Jour. Econ. Ent. 50: 212. —Drooz, 1960. U. S. Dept. Agr., Tech. Bul. 1212: 29-32. —McGugan and Coppel, 1962. In McCleod, McGugan, and Coppel, Commonwealth Inst. Biol. Control, Tech. Commun. 2: 110-114. —Turnock and Muldrew, 1971. Commonwealth Inst. Biol. Control, Tech. Commun. 4: 177-180, 181-182, 186-188.

Morphology: Finlayson, 1960. Canad. Ent. 92: 933-935 (final-instar larva).

Genus HYPERBATUS Foerster

Hyperbatus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 210.

Type-species: *Mesoleius segmentator* Holmgren. Monotypically included and design. by Townes, Momoi, and Townes, 1965.

According to Townes (1970) this genus includes the Eurasian type-species and three undescribed Nearctic species.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 126.

Genus SAOTIS Foerster

Saotis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 210.

Type-species: *Mesoleius (Saotis) brevispina* Thomson. Design. by Viereck, 1914 from five species included by Thomson, 1883.

Saotis Thomson, 1883. Opusc. Ent. 9: 933. Emend.

This is a Holarctic genus of moderate size.

clypeatus (Ashmead). Southwestern Alaska, w. Wash.

Eroltylus clypeatus Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 168. ♀.

hoeli Roman. Eastern Greenland.

Saotis Hoeli Roman, 1933. Norges Svalbard-og Ishavs-undersokelser, Skrifter om Svalbard og Ishavet 53: 9. ♀.

Taxonomy: Roman, 1934. Ann. and Mag. Nat. Hist. (10) 14: 609 (variation).

mellipes (Provancher). Que.

Echthrus mellipes Provancher, 1874. Nat. Canad. 6: 60. ♀ (♂ misdet.).

Genus ANONCUS Townes

Anoncus Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 127.

Type-species: *Mesoleius striatus* Davis. Orig. design.

Townes said that this is a large Holarctic genus.

confusus (Ashmead). Southwestern Alaska.

Calliphrrurus confusus Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 223. ♂.

perplexus (Ashmead). Southwestern Alaska.

Calliphrrurus perplexus Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 222. ♂.

striatus (Davis). Que., Maine, N. H., Colo.

Mesoleius striatus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 299. ♂, ♀.

Dizemon regalis Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 312. ♀.

zebratus (Davis). N. Y.

Mesoleptus zebratus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 316. ♂, ♀.

UNPLACED TAXA OF MESOLEIINI

The following were treated as species of *Mesoleius* by Townes and Townes (1951). Presumably, they are species whose types had not been studied recently enough by Townes to enable him to assign them to genera in accordance with his 1970 treatment of the genera of Ctenopelmatinae. The types of the Provancher species were studied by Barron (1975), who cited the generic placements of Townes and Townes and Townes (1951) without indicating that they either remained correct or had become obsolete.

Taxonomy: Townes and Townes, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 332, 333, 334. —Barron, 1975. Nat. Canad. 102: 445, 448, 545, 554-555.

Eclytus robustus Provancher, 1883. Nat. Canad. 14: 8. ♀. Que.

Mesoleius Chicoutimiensis Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 368. ♀. Que.

Mesoleius comeau Townes, 1945. Amer. Ent. Soc., Mem. 11: 511. N. name for *Tryphon canaliculatus* Provancher (which see).

Mesoleius groenlandicus Roman, 1930. Ann. and Mag. Nat. Hist. (10) 5: 285. ♂. Greenland.

Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 110.

Tryphon canaliculatus Provancher, 1875. Nat. Canad. 7: 116. ♀. Que. Formerly preocc. in *Mesoleius* by Provancher, 1874; replaced in 1945 by *Mesoleius comeau* Townes (which see).

Tryphon rufopectus Provancher, 1888. Addit. Corr. Faune Ent. Canada hym., p. 367. "♂" = ♀. Que.

TRIBE EURYPROCTINI

This tribe is Neotropic, Holarctic, and Oriental, but the majority of the taxa occur in the Holarctic region only. Of the sixteen genera currently recognized, twelve have Nearctic species.

Genus SYNOMELIX Foerster

Zemiophora Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 203.

Type-species: *Tryphon scutulatus* Hartig. By subsequent monotypy from inclusion by Thomson, 1894.

Synomelix Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 206.

Type-species: *Synomelix sieboldii* Kriechbaumer. By subsequent monotypy from inclusion by Kriechbaumer, 1897. Perkins (1962) regarded the type-species as being synonymous with *S. albipes* (Gravenhorst).

Zemiophorus Thomson, 1894. Opusc. Ent. 19: 2000. Emend.

This is a small Holarctic genus. Perkins (1962) disputed Townes (1945) suppression of *Zemiophora* as a synonym of *Synomelix*.

Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 521. —Perkins, (1962). Brit. Mus. (Nat. Hist.) Ent., Bul. 11: 457, 464.

fasciata (Davis). Mass.

Dialges fasciatus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 286. ♂.

longitarsis (Ashmead). Southwestern Alaska.

Sychnoportus longitarsis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 216. ♂.

obesa (Davis). Que., R. I., N. Y., Pa., Va., w. N. C., n. Ga.

Stiphrosomus obesa Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 312. ♀.

signatipes (Cresson). "Hudson's Bay Territory."

Tryphon signatipes Cresson, 1868. Amer. Ent. Soc., Trans. 2: 105. ♀.

Genus SYNODITES Foerster

Zootrepes Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 162. This name was suppressed as a synonym of *Synodites* by Townes, Momoi, and Townes (1965) who were acting as first revisors. It should be noted that volume 25 of Naturh. Ver. Rheinlande, Verh. was published in two halves; *Zootrepes* appeared in the first half and *Synodites* appeared in the second half. If it is subsequently shown that the second half or the author's separates it would, of course, be necessary to suppress *Synodites* as a synonym of *Zootrepes*. *Zootrepes*.

Type-species: *Bassus (Zootrepes) hilaris* Woldstedt. By subsequent monotypy from inclusion by Woldstedt, 1880.

Sychnoportus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 208, 220. The variant spelling *Sychnoportus* appeared on p. 220.

Type-species: *Sychnoportus rufopectus* Ashmead. By subsequent monotypy from inclusion by Ashmead, 1898.

Listrota Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 209.

- Type-species: *Phobetres canadensis* Harrington. By subsequent monotypy from inclusion by Davis, 1898.
- Polyterus* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 209.
- Type-species: *Polyterus franconiaensis* Davis. Desig. by Viereck, 1914 from two species included by Davis, 1898.
- Synodites* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 211.
- Type-species: *Tryphon assimilis* Holmgren. Desig. by Viereck, 1914 from five species included by Thomson, 1894. The type-species is regarded as a synonym of *S. notatus* (Gravenhorst).
- Camponastes* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 212.
- Type-species: *Camponastes basilicus* Davis. By subsequent monotypy from inclusion by Davis, 1898.
- Sarcorychus* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 212.
- Type-species: *Tryphon notatus* Gravenhorst. Monotypically included and desig. by Perkins, 1962.
- Zootrephus* Thomson, 1890. Opusc. Ent. 14: 1486. Emend.
- Synodytes* Thomson, 1894. Opusc. Ent. 19: 2001. Emend.
- basilicus** (Davis). Vt., Wash.
- Camponastes basilicus* Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 292. ♀.
- canadensis** (Harrington). Southwestern B. C., Wash.
- Phobetres canadensis* Harrington, 1894. Canad. Ent. 26: 248. ♀.
- consors** (Davis). Que., N. H.
- Mesoleius consors* Davis 1898 (1897). Amer. Ent. Soc., Trans. 24: 297. ♀.
- franconiaensis** (Davis). N. H., R. I.
- Polyterus Franconiaensis* Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 289. ♀.
- olympiae** (Ashmead). Maine, N. H., Mass., Conn., N. Y., n. Va., w. Wash. Host: *Nematus erythrogaster* Nort., *N. ventralis* Say, willow sawfly, tenthredinid on *Populus tremuloides*.
- Mesoleius olympiae* Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 199. ♂, ♀.
- Sychnoportus rufopectus* Ashmead, 1898. In Dimmock and Ashmead, Ent. Soc. Wash., Proc. 4: 169. "♂" = ♀.
- virginiensis** (Ashmead). Que., N. H., Va., N. C., n. Ga. Host: Sawfly on white birch.
- Bassus virginiensis* Ashmead, 1890. (1889). U. S. Natl. Mus., Proc. 12: 440. ♀.
- Mesoleius puritanicus* Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 299. ♀.
- Polyterus albipectus* Walley, 1937. Canad. Ent. 69: 192. ♂, ♀.

Genus PANTORHAESTES Foerster

- Trophoctonus* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 206
- Type-species: *Tryphon xanthostomus* Gravenhorst. Desig. by Viereck, 1914 from two species included by Thomson, 1894.
- Pantorhaestes* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 206.
- Type-species: *Tryphon xanthostomus* Gravenhorst. By subsequent monotypy from inclusion by Pfankuch, 1906.
- This is a small Holarctic genus.
- Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 132 (status of Nearctic spp. changed).
- assiduus assiduus** (Cresson). Mass., Mich., Sask.
- Mesoleptus assiduus* Cresson, 1868. Amer. Ent. Soc., Trans. 2: 97. ♂.
- assiduus excavatus** (Davis). Mont.
- Erigloea excavata* Davis, 1897. Amer. Ent. Soc., Trans. 24: 275. ♀.
- xanthostomus frontalis** (Davis). Que. w. to Alta., s. to D. C., Ind., and Colo. *P. xanthostomus xanthostomus* (Gravenhorst) occurs in Europe.
- Dialges frontalis* Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 285. ♂, ♀.
- Dialges frontalis* var. *tricolor* Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 285. ♂, ♀.
- Dialges frontalis* var. *rivalis* Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 286. ♀.

Genus MESOLEPTIDEA Viereck

Mesoleptidea Viereck, 1912 (Sept. 30). Ent. Soc. Wash., Proc. 14: 176.

Type-species: *Mesoleptus cingulatus* Gravenhorst. Orig. desig.

Gnathonophorus Schmiedeknecht, 1912 (Nov.). Opusc. Ichn., v. 5, p. 2519.

Type-species: *Gnathonophorus moricei* Schmiedeknecht. By subsequent monotypy from inclusion by Schmiedeknecht, 1913.

This is a Holarctic genus of moderate size.

decens (Cresson). Que., Maine, N. H., Conn., N. Y., Pa., Va., Colo. Host: Sawfly on *Sambucus*.

Mesoleptus decens Cresson, 1868. Amer. Ent. Soc., Trans. 2: 101. ♂.

flavifrons (Cresson). N. H., R. I., N. Y., N. J.

Mesoleptus flavifrons Cresson, 1864. Ent. Soc. Phila., Proc. 3: 269. ♂.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 133 (generic transfer).

kodiakensis (Ashmead). Southwestern Alaska.

Hypocryptus kodiakensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 208. ♂.

unalaskae (Ashmead). Southwestern Alaska.

Mesoleptus unalaskae Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 210. ♀.

Genus ANISOTACRUS Schmiedeknecht

Anisotacrus Schmiedeknecht, 1913. Opusc. Ichn., v. 5, fasc. 34 (June), p. 2710; v. 5, fasc. 35

(Nov.), p. 2725. Schmiedeknecht indicated on p. 2725 that this is a new name for

"*Epachtus* Thomson, Opusc. entom. XIX, p. 1999 (non *Epachthes* Foerster, 1868)."

However, it seems clear from his discussion that rather than proposing a replacement name for *Epachtus* because he believed it to be preoccupied by *Epachthes*, he proposed it in the sense that he regarded *Epachtus* Thomson as being a misidentification of *Epachthes* Foerster. That is, he was proposing a "new name" for *Epachthes* Foerster sensu Thomson. Schmiedeknecht indicated that Thomson placed two unrelated species in *Epachtus*, *Tryphon erythralpalpus* "Gravenhorst" and *Mesoleius tenellus* Holmgren; Schmiedeknecht placed *Tryphon erythralpalpus* (desig. as the type-species of *Epachthes* by Viereck, 1914) in *Trematopygus* and proposed his "new name for *Epachtus*" only for *Mesoleius tenellus* Holmgren.

Type-species: *Mesoleius tenellus* Holmgren. Monotypic.

This is a Holarctic genus of moderate size.

popofensis (Ashmead). Southwestern Alaska, Alta.

Hypocryptus popofensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 208. "♂" = ♀.

spatiosus (Davis). Que., N. Y., R. I.

Sychnoleter spatiosus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 306. ♀.

truncatus (Davis). N. Y., "Canada," Mont.

Clepsioporthus truncatus Davis, 1898. Amer. Ent. Soc., Trans. 24: 326. ♂, ♀.

Genus HADRODACTYLUS Foerster

Dizemon Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 199.

Type-species: *Mesoleptus typhae* Gravenhorst. By subsequent monotypy from inclusion by Kriechbaumer, 1891. The type-species is Gravenhorst's identification of and lapsus for *Ichneumon tiphae* Geoffroy. The taxonomy of *H. tiphae* is discussed by Idar (1974).

Hadrodactylus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 199.

Type-species: *Ichneumon tiphae* Geoffroy. Desig. by Viereck, 1914 from two species included by Woldstedt, 1877.

Zemiodes Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 200.

Type-species: *Mesoleptus erythropus* Kriechbaumer. Desig. by Perkins, 1962 from two species included by Kriechbaumer, 1891.

Narcopoea Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 204.

Type-species: *Mesoleptus typhae* Gravenhorst. By subsequent monotypy from inclusion by Kriechbaumer, 1891. See above discussion of type-species of *Dizemon*.

Meropaches Schmiedeknecht, 1913. Opusc. Ichn., v. 5, p. 2705.

Type-species: *Meropaches bulsanensis* Schmiedeknecht. Monotypic.

This is a large Holarctic genus. The usual hosts are presumed to be sawflies of the genus *Dolerus*.

Taxonomy: Idar, 1974. Ent. Scand. 5: 23 (discussion bearing on identity of *Ichneumon tiphae* Geoffroy).

coxatus (Davis). N. Y. s. to Va., w. to s.w. S. Dak.

Hadrodactylus elongatus var. *coxatus* Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 320. ♂, ♀.

elongatus (Cresson). Mass., Alta.

Mesoleptus elongatus Cresson, 1868. Amer. Ent. Soc., Trans. 2: 96. ♂, ♀.

femoratus (Davis). Colo. See *Hadrodactylus seldoviae* (Ashmead).

Catoglyptus femoratus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 310. ♂, ♀.

Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 489. —Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 80.

flavicornis (Provancher). Que.

Mesoleptus flavicornis Provancher, 1879. Nat. Canad. 11: 228. ♀.

inceptus (Cresson). Que. w. to s.w. B. C., s. to N. C., Iowa, and Colo.

Mesoleptus inceptus Cresson, 1868. Amer. Ent. Soc., Trans. 2: 96. ♂, ♀.

Mesoleptus propinquus Cresson, 1868. Amer. Ent. Soc., Trans. 2: 97. ♂.

Zemiodes coloradensis Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 323. ♂, ♀.

laurentianus (Provancher). Que.

Tryphon Laurentianus Provancher, 1875. Nat. Canad. 7: 118. ♂.

longicornis (Cresson). N. H., N. Y., Del., Mich.

Mesoleptus longicornis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 270. ♂.

magnacornis (Davis). Wash.

Zemiodes magnacornis Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 324. ♂.

seldoviae (Ashmead). N. Y., Pa., N. C., Mich., Colo., Alta. Idaho, Alaska.

Hadrodactylus elongatus var. *femoratus* Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 320. ♂, ♀. Preocc. in *Hadrodactylus* by Davis, 1898, p. 310.

Hypocryptus seldoviae Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 209. ♂, ♀.

seminiger (Provancher). Que., Pa., Ont., Colo., Mont., Nev.

Paniscus seminiger Provancher, 1874. Nat. Canad. 6: 107. ♀ (♂ misdet.).

Hadrodactylus ruficornis Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 320. ♀.

tibialis (Ashmead). Southwestern Alaska, w. Wash.

Hypocryptus tibialis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 209. ♂.

variegatipes (Ashmead). Southwestern Alaska.

Hypocryptus variegatipes Ashmead 1902. Wash. Acad. Sci., Proc. 4: 208. ♂.

Genus SYNDIPNUS Foerster

Polypystis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 208.

Type-species: *Tryphon lateralis* Gravenhorst. Desig. by Viereck, 1914 from two species included by Roman, 1909.

Syndipnus Foerster, 1868. Naturh. Ver. Rheinlande Verh. 25: 209.

Type-species: *Euryproctus (Syndipnus) macrocerus* Thomson. Desig. by Viereck, 1914 from nine species included by Thomson, 1883.

Tlemon Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 209.

Type-species: *Tlemon delicatus* Ashmead. By subsequent monotypy from inclusion by Ashmead, 1902.

Dicksonia Holmgren, 1881 (1880). Novas Species Ins. Cura et Labore A. E. Nordenskiöldii e Novaia Semlia Coactorum, p. 11.

Type-species: *Dicksonia arctica* Holmgren. Monotypic.

Neastus Holmgren, 1883. In Holmgren and Aurivillius, Ent. Tidskr. 4: 154.

Type-species: *Neastus laeviceps* Holmgren. Monotypic.

Anaglymmus Roman, 1914. Arkiv for Zool. 9 (2): 3.

Type-species: *Anaglymmus incisus* Roman. Desig. by Viereck, 1921.

This is a moderately large Holarctic genus.

Revision: Walley, 1940. Canad. Ent. 72: 135-145.

Taxonomy: Walley, 1945. Canad. Ent. 77: 41-43 (additions to revision).

alaskensis Walley, Northeastern N. W. T., interior Alaska.

Syndipnus alaskensis Walley, 1940. Canad. Ent. 72: 138. ♂, ♀.

conformis (Holmgren). Western Sask.; Europe.

Trematopygus conformis Holmgren, 1857 (1855). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 183. ♂.

delicatus (Ashmead). Southwestern Alaska, Sask. Not included in the revision by Walley (1940).

Tlemon delicatus Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 216. ♂.

gaspesianus (Provancher). Que. Host: *Pikonema alaskensis* (Roh.). According to Townes and Townes (1951), *S. gaspesianus* is "transcont. in Canad. Zone."

Tryphon gaspesianus Provancher, 1879. Nat. Canad. 11: 252. ♀.

Taxonomy: Townes and Townes, 1951. In Muesebeck et al., U. S. Dept. Agr., Agr. Monog. 2: 337.

lateralis (Gravenhorst). N. H., s. Alta.; Europe. Host: *Pachynematus extensicornis* (Nort.).

Tryphon lateralis Gravenhorst, 1829. Ichn. Europaea, v. 1, p. 690. [male].

Syndipnus punctiscuta Thomson, 1894. Opusc. Ent. 19: 2005. ♂, ♀.

Taxonomy: Pfankuch, 1907. Ztschr. System. Hym. Dipt. 7: 19 (syn.).

pannicularius (Holmgren). Interior Alaska; n. Europe.

Mesoleius pannicularius Holmgren, 1857 (1855). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 178. ♀.

phygadeuontoides Walley. Northern Man.

Syndipnus phygadeuontoides Walley, 1945. Canad. Ent. 77: 42. ♀.

probatas Walley. N. Y., Ont. Host: *Nematus* sp. on poplar.

Syndipnus probatas Walley, 1940. Canad. Ent. 72: 144. ♂, ♀.

rubiginosus Walley. P. E. I., N. B., Que., Maine, Ont., n. Minn., s. Man., Sask. Host: *Pikonema alaskensis* (Roh.), *P. dimmockii* (Cress.).

Syndipnus rubiginosus Walley, 1940. Canad. Ent. 72: 140. ♂, ♀.

ungavae Walley. Northern Que.

Syndipnus ungavae Walley, 1940. Canad. Ent. 72: 139. ♀.

Genus HYPAMBLYS Foerster

Hypamblys Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 212.

Type-species: *Mesoleius transfuga* Holmgren. Desig. by Viereck, 1914 from four species included by Thomson, 1894.

Apystus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 212.

Type-species: *Tryphon albopictus* Gravenhorst. Monotypically included and desig. by Perkins, 1962.

Lathrophagus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 213.

Type-species: *Mesoleius buccatus* Holmgren. Monotypically included and desig. by Perkins, 1962.

This is a Holarctic genus of moderate size.

albifacies (Provancher). Mass., N. Y., Ont.

Mesostenus albifacies Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 362. ♀.

albopictus (Gravenhorst). Maine, s.e. and s.w. Alaska, central Wash., n.w. Calif.; Europe. Host: *Anoplonyx laricivorus* (R. and M.), *Pristiphora abbreviata* (Htg.).

Tryphon albopictus Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 255. ♂.

Mesoleius transfuga Holmgren, 1857 (1855). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 164.

♂, ♀.

Calliphururus popofensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 221. ♀.

Calliphururus glacialis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 222. ♂.

Mesoleius gymnonychi Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 223. ♀.

Taxonomy: Pfankuch, 1907. Ztschr. System Hym. Dipt. 7: 18 (syn.). —Townes, 1945. Amer. Ent. Soc., Mem. 11: 527 (syn.).

Biology: Hinz, 1961. Schweiz. Ent. Gesell., Mitt. 34: 4.

conformis (Walley). Ont., N. C., w. Oreg.

Ipoctonus conformis Walley, 1933. Canad. Ent. 65: 257. ♂, ♀.

Genus PHOBETES Foerster

Phobetes Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 198.

Type-species: *Tryphon fuscicornis* Holmgren. Desig. by Viereck, 1914 from two species included by Thomson, 1889.

Ipoctonus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 199. Preocc. by Heine, 1860.

Type-species: *Ichneumon chrysostomus* Gravenhorst. Desig. by Viereck, 1914 from three species included by Thomson, 1889.

Philotynna Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 209.

Type-species: *Ichneumon chrysostomus* Gravenhorst. Desig. by Townes, Momoi, and Townes, 1965 from four species included by Townes, Townes, and Gupta, 1961.

Phobetus Thomson, 1889. Opusc. Ent. 13: 1430. Emend. Preocc. by LeConte, 1856.

Griphodes Kriechbaumer, 1894. Termeszt. Fuzetek 17: 57.

Type-species: *Griphodes caligatus* Kriechbaumer. Monotypic.

Phobetellus Hincks, 1944. Roy. Ent. Soc. London, Proc., Ser. B: Taxonomy 13: 34. N. name for *Phobetus* Thomson.

Ipoctoninus Hincks, 1944. Roy. Ent. Soc. London, Proc., Ser. B: Taxonomy 13: 35. N. name for *Ipoctonus* Foerster.

Troctonus Townes, 1944. Amer. Ent. Soc., Mem. 11: 21. Nomen nudum.

This is a moderately large genus of Neotropical, Holarctic, and Oriental distribution. The majority of the species occur in the Holarctic region.

egregius (Davis). Wash.

Mesoleptus egregius Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 317. ♂. Preocc.

secondarily in *Mesoleptus* if *Exolytus egregius* Foerster is a species of *Mesoleptus*.

rufigaster (Provancher). Ont.

Tryphon rufigaster Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 104. ♀.

The lectotype selected by Gahan and Rohwer (1918) was rejected by Mason (1955).

Barron (1975) selected a new lectotype.

Taxonomy: Gahan and Rohwer, 1918. Canad. Ent. 50: 200. —Townes, 1945. Amer. Ent. Soc., Mem. 11: 163 (syn.). —Mason, 1955. Canad. Jour. Zool. 33: 20. —Barron, 1975. Nat. Canad. 102: 551.

striatus (Davis). Maine, Colo., Alta., Wash.; Mexico. Host: *Ametastegia glabrata* (Fall.)

Mesoleptus striatus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 318. ♂.

Mesoleptus torpens Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 318. ♂, ♀.

Mesoleptus scrupulosus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 318. ♂, ♀.

Mesoleius balteatus Cushman, 1919. U. S. Natl. Mus., Proc. 55: 541. ♀.

uniformis (Provancher). Que., Ont., Alta. Host: *Trichiosoma triangulum* Kby.

Campoplex unicolor Provancher, 1874. Nat. Canad. 6: 144. ♂. Formerly preocc. in *Mesoleptus* by Cresson, 1864.

Mesoleptus uniformis Provancher, 1879. Nat. Canad. 11: 232. N. name for *C. unicolor* Provancher.

Genus HYPERALLUS Foerster

Gastroporus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 206.

Type-species: *Hyperallus caliroae* Viereck. Monotypically included and desig. by Perkins, 1962.

Hyperallus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 210.

Type-species: *Hyperallus caliroae* Viereck. By subsequent monotypy from inclusion by Viereck, 1911.

Only one species is known.

caliroae Viereck. N. Y., Va., La., n.e. Kans. Host: *Caliroa liturata* MacG., *C. sp.* on *Quercus rubra*.

Hyperallus caliroae Viereck, 1911. U. S. Natl. Mus., Proc. 40: 189. ♂, ♀.

Polyterus caliroae Rohwer, 1915. U. S. Natl. Mus., Proc. 49: 221. ♂. Preocc. in *Hyperallus* by Viereck, 1911.

Hyperallus virginiensis Townes, 1945. Amer. Ent. Soc., Mem. 11: 528. N. name for *P. caliroae* Rohwer.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 138 (syn.).

Biology: Cushman, 1911. U. S. Dept. Agr., Bur. Ent. Bul. 97, pt. 5, p. 101-102.

Genus OCCAPES Townes

Occapes Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 138.

Type-species: *Occapes sierrae* Townes. Orig. desig.

This is a small Holarctic genus.

sierrae Townes. Northern Calif.

Occapes sierrae Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 139. ♂, ♀.

Genus EURYPROCTUS Holmgren

Euryproctus Holmgren, 1857 (1855). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 109.

Type-species: *Mesoleptus annulatus* Gravenhorst. Desig. by Viereck, 1912.

Sychnoleter Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 197.

Type-species: *Mesoleptus geniculosus* Gravenhorst. Monotypically included and desig. by Thomson, 1889.

Hypocryptus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 198.

Type-species: *Mesoleptus (Hypocryptus) testaceicornis* Brischke. By subsequent monotypy from inclusion by Brischke, 1892. The type-species is regarded as a synonym of *E. mundus* (Gravenhorst).

Xenonastes Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 208.

Type-species: *Euryproctus alpinus* Holmgren. Monotypically included and desig. by Townes, Momoi, and Townes, 1965.

Fovaya Cameron, 1903. Ztschr. System. Hym. Dipt. 3: 341.

Type-species: *Fovaya annulicornis* Cameron. Monotypic.

This large genus is Holarctic and Oriental (a few spp.).

Revision: Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 327-330.

albocinctus Davis. N. H.

Euryproctus albocinctus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 328. ♀.

albopunctus Davis. N. H.

Euryproctus albopunctus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 328. ♂, ♀.

annulatus (Provancher). Que.

Mesoleptus annulatus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 93, 96.

♂. The alternate spelling *cinctipes* on p. 93 (key) was rejected in favor of *annulatus* by Barron (1975).

Taxonomy: Barron, 1975. Nat. Canad. 102: 424.

bituminosus Davis. N. H., Mass., Minn., Alta., Idaho, Wash., Oreg.

Euryproctus bituminosus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 328. ♀.

clavatus (Provancher). Que.

Extastes clavatus Provancher, 1883. Petite Faune Ent. Canada Hym., p. 386. ♀.

curvator Davis. Que. s. to n. Ga., w. to Mich.

Tryphon annulatus Provancher, 1875. Nat. Canad. 7: 119. ♀. Preocc. in *Euryproctus* by Gravenhorst, 1829. The holotype located by Barron (1975) supplants the "lectotype" selected by Gahan and Rohwer (1918).

Euryproctus curvator Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 329. ♂.

Taxonomy: Gahan and Rohwer, 1918. Canad. Ent. 50: 32. —Barron, 1975. Nat. Canad. 102: 425-426.

dakotaensis Davis. Eastern S. Dak., n.e. Kans.

Euryproctus dakotaensis Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 330. ♂.

depressus (Provancher). Que., N. H.

Mesoleptus depressus Provancher, 1875. Nat. Canad. 7: 114. ♂. The holotype located by Barron (1975) supplants the "lectotype" selected by Gahan and Rohwer (1918).

Taxonomy: Gahan and Rohwer, 1918. Canad. Ent. 50: 32. —Barron, 1975. Nat. Canad. 102: 461.

latigaster (Provancher). Ont.

Mesostenus latigaster Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 77. ♀.

longicornis (Provancher). Que., N. Y., Ont.

Mesostenus longicornis Provancher, 1874. Nat. Canad. 6: 300. ♂.

Tryphon Moyeni Provancher, 1875. Nat. Canad. 7 (4): 120. ♂.

Mesoleptus longipes Provancher, 1875. Nat. Canad. 7 (9): 271. ♂. In view of the fact that the holotype is lost (Barron, 1975), I see no rationale for Townes (1945) failure to apply this name according to the actions of the first revisor, the first revisor being Provancher (1879), who suppressed *longipes* and *longicornis* (the latter then being preocc. in *Mesoleptus* by Cresson, 1864) as synonyms of *Mesoleptus moyeni* (Provancher).

Mesoleptus perditus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 97. ♂.

Euryproctus moyenii Dalla Torre, 1901. Cat. Hym., v. 3, p. 348. Emend.

Taxonomy: Provancher, 1879. Nat. Canad. 11: 223. —Townes, 1945. Amer. Ent. Soc., Mem. 11: 543. —Barron, 1975. Nat. Canad. 102: 498, 499, 510, 529-530.

petiolatus Davis. N. H., N. Y., Pa., Mich.

Euryproctus petiolatus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 328. ♀. Suppressed as a synonym of *Mesoleptus longipes* Provancher by Townes (1945); see synonymy of preceding species, *E. longicornis*.

Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 534.

puritanicus Davis. Mass.

Euryproctus puritanicus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 330. ♀.

ramis Davis. N. H., Alta., Colo.

Euryproctus sessilis Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 329. ♀.

Euryproctus ramis Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 329. ♀.

sentinis Davis. Maine, N. H., R. I., N. Y., Ont., Tex.

Euryproctus rufopictus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 330. ♀.

Euryproctus sentinis Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 330. ♀.

SUBFAMILY ANOMALONINAE

This is a medium-sized subfamily of worldwide distribution. Gauld (1976) recognized only two tribes and 35 genera or subgenera as opposed to the four tribes and 37 genera recognized by Townes (1971). Although I am not entirely convinced that the several genera reduced to subgeneric status by Gauld should be treated as subgenera, and although I generally regard the subgeneric category as being a nomenclatural nuisance, I have nevertheless followed Gauld's classification here, because in its entirety it appears to be an excellent piece of work.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 122-159 (genera of world). —Gauld, 1976. Brit. Mus. (Nat. Hist.) Ent., Bul. 33: 1-135 (genera of world).

TRIBE GRAVENHORSTIINI

Members of this tribe are internal parasites of Lepidoptera, ovipositing into the larvae and always emerging from the pupae.

Genus **HABRONYX** Foerster

Gauld (1976) recognized four subgenera, three of which are represented by Nearctic species.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 130-131. —Gauld, 1976. Brit. Mus. (Nat. Hist.) Ent., Bul. 33: 31-41.

Genus **HABRONYX** Subgenus **HABRONYX** Foerster

Habronyx Foerster, 1860. Naturh. Ver. Rheinlande, Verh. 17: 147.

Type-species: *Habronyx gravenhorstii* Foerster, Monotypic. The type-species is regarded as a synonym of *H. heros* (Wesmael).

Acanthostoma Kriechbaumer, 1895. Naturf. Gesell. Leipzig, Sitzber. 19: 128.

Type-species: *Acanthostoma japonicum* Kriechbaumer, Monotypic. The type-species is regarded as a synonym of *H. insidiator* (Smith).

Macrostemma Shestakov, 1923. Mus. Zool., Russ. Acad. Sci., Ann. 24: 46.

Type-species: *Macrostemma elegans* Shestakov, Monotypic.

Formosanomalon Uchida, 1928. Hokkaido Imp. Univ., Faculty Agr., Jour. 21: 241.

Type-species: *Formosanomalon baibarense* Uchida, Monotypic and orig. desig.

This small subgenus is known from all zoogeographic regions. The "Marginal Index" of the Nearctic species disagrees with Gauld's (1976) definition of the subgenus *Habronyx*, and Gauld appears to have placed too much emphasis on this character in his key couplet which differentiates the subgenera *Habronyx* and *Camposcopus*.

luteopectus (Norton). Conn., N. Y., N. C., Mich.

Anomalon luteo-pectus Norton, 1863. Ent. Soc. Phila., Proc. 1: 363. ♂.

Anomalon luteopectum Dalla Torre, 1901. Cat. Hym., v. 3, p. 167. Emend.

Gravenhorstia luteopecta Townes, 1951. In Townes and Townes, in Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 397. Emend.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 131.

magniceps (Cresson). N. Y., N. J., Pa., n. Va., Mich., Ill., n.e. Kans., n.e. Tex., s. Ariz. Host: Geometrid?, *Hemaris diffinis* (Bdv.), *Anisota oslari* Roths., *Dryocampa rubicunda rubicunda* (F.).

Anomalon magniceps Cresson, 1872. Amer. Ent. Soc., Trans. 4: 170. ♀.

Anomalon fuliginosa Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 356. ♀. N. syn.

Taxonomy: Walkley, 1967. In Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2, sup. 2, p. 211 (generic placement).

Genus **HABRONYX** Subgenus **CAMPOSCOPUS** Foerster

Camposcopus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 145.

Type-species: *Camposcopus acclerivora* Rohwer, Monotypically included and desig. by Rohwer, 1915.

Labrorychus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 146.

Type-species: *Anomalon nigricorne* Wesmael. By subsequent monotypy from inclusion by Brischke, 1880.

Blaptocampus Thomson, 1892. Opusc. Ent. 16: 1765.

Type-species: *Anomalon nigricorne* Wesmael. Desig. by Viereck, 1914.

This is a small subgenus of Holarctic, Oriental, and Australian distribution.

acclerivorus (Rohwer). Maine, R. I., Pa., Mich., Minn. Host: *Paralobesia viteana* (Clem.), *Acrobasis comptoniella* Hulst, *A. rubrifasciella* Pack., *Acleris* sp., *Argyrotaenia velutinana* (Wlk.).

Camposcopus acclerivora Rohwer, 1915. U. S. Natl. Mus., Proc. 49: 226. ♀.

Genus HABRONYX Subgenus HABROCAMPULUM Gauld

Habronyx subg. *Habrocampulum* Gauld 1976. Brit. Mus. (Nat. Hist.) Ent., Bul. 33: 38.

Type-species: *Anomalon biguttatum* Gravenhorst. Monotypic and orig. desig.

This is a small Holarctic subgenus. I am grateful to have been informed of the existence of a Nearctic species by Dr. Ian Gauld (personal commun., 1977). Dr. Gauld said that the Nearctic specimens he had seen were in the collection of the American Entomological Institute, Ann Arbor, Mich.

Genus APHANISTES Foerster

Aphanistes Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 145.

Type-species: *Anomalon bellicosum* Wesmael. Desig. by Viereck, 1914 from three species included by Brischke, 1880.

Anochilacrum Enderlein, 1921. Stettin. Ent. Ztg. 82: 12.

Type-species: *Anochilacrum flavigena* Enderlein. Monotypic and orig. desig.

This is a large genus which is known from all zoogeographic regions except the Ethiopian. The Nearctic species are being revised by Dr. H. P. Hopper.

hyalinus (Norton). Que. s. to n. Ga., w. to Ill. Host: *Datana contracta* Wlk., *Schizura concinna* (J. E. S.), *Symmerista albifrons* (J. E. S.), *Phosphila turbulenta* Hbn., *Halisidota caryae* (Harris).

Anomalon hyaline Norton, 1863. Ent. Soc. Phila., Proc. 1: 361. ♀.

Anomalon nigro-rufus Norton, 1863. Ent. Soc. Phila., Proc. 1: 361. ♀.

Anomalon basilicon Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 359. ♀.

Anomalon edemae Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 360. ♂, ♀.

puparum (Ashmead). Mid-coastal Calif. Host: Noctuid.

Agrypon puparum Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 424. ♀.

Genus BARYLYPA Foerster

Barylypa Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 146.

Type-species: *Barylypa genalis* Thomson. Desig. by Viereck, 1914 from two species included by Thomson, 1892.

Laphyctes Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 146. Preocc. by Dujardin, 1844, Reichenbach, 1850, and Stal, 1853.

Type-species: *Laphyctes insidiator* Foerster. Desig. by Viereck, 1914 from three species included by Foerster, 1878.

Sarntheinia Dalla Torre, 1901. Wien. Ent. Ztg. 20: 52. N. name for *Laphyctes* Foerster.

Hadromanus Szepligeti, 1905. In Wytsman, Gen. Ins., fasc. 34, p. 14.

Type-species: *Anomalon (Labrorychus) laevicoxe* Schmiedeknecht. Monotypic.

Magnibucca Morley, 1913. Rev. Ichn. Brit. Mus., v. 2, p. 79.

Type-species: *Magnibucca testacea* Morley. Monotypic.

Trochiscomerus Meyer, 1931. Konowia 10: 8.

Type-species: *Trochiscomerus schmiedeknechti* Meyer. Monotypic.

This is a large genus of Neotropical, Holarctic, Oriental, and Australian distribution.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 139-140. —Gauld, 1976. Brit. Mus. (Nat. Hist.) Ent., Bul. 33: 44-46.

elongata (Davis). Mich., S. Dak., Alta.

Anomalon elongatum Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 357. ♂, ♀.

Anomalon bipartitana Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 358. ♂.

irona Grimble. Northern Mich.

Barylypa irona Grimble, 1967. Canad. Ent. 99: 1332.

paeneferruginea (Viereck). Western Kans.

Anomalon paeneferrugineum Viereck, 1905. Kans. Acad. Sci., Trans. 19: 310. ♀.

relieta (Fabricius). "North America."

Ophion relictus Fabricius, 1798. Sup. Ent. System., p. 236. [male].

Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 111. —Gauld, 1976. Brit. Mus. (Nat. Hist.) Ent., Bul. 33: 47-48.

smithii (Davis). N. J., Ga.

Anomalon smithii Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 357. ♂.

sulcata (Provancher). Vt., R. I., N. Y., Ont.

Podogaster sulcatus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 90. ♀.

Genus CORSONCUS Townes

Corsoncus Townes, 1971. Amer. Ent. Inst., Mem. 17: 141.

Type-species: *Anomalon magum* Cresson. Monotypic and orig. desig.

This is a small Neotropic and Nearctic genus. The generic limits of *Corsoncus* were redefined by Gauld (1976). Except for *C. nigricans* (Cresson), the Nearctic species here newly placed in *Corsoncus* had been referred to *Hadromanus* (now a synonym of *Barylypa*) by Townes (1971). I have not seen the types of the species now placed in *Corsoncus*.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 140. —Gauld, 1976. Brit. Mus. (Nat. Hist.) Ent., Bul. 33: 46-48.

apicalis (Cresson), n. comb. Kans., Colo.

Cremastus fulvescens var. *apicalis* Cresson, 1865. Ent. Soc. Phila., Proc. 4: 286. ♀.

Cremastus fulvescens var. *seminiger* Cresson, 1865. Ent. Soc. Phila., Proc. 4: 286. ♂, ♀.

Anomalon fulvescens var. *hemimelanus* Viereck, 1905. Kans. Acad. Sci., Trans. 19: 310. ♀.

clavatus (Davis), n. comb. S. C., Ga.

Anomalon clavatum Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 357. ♀.

fulvescens (Cresson), n. comb. Colo., Ariz.

Cremastus fulvescens Cresson, 1865. Ent. Soc. Phila., Proc. 4: 285. ♂, ♀.

nigricans (Cresson), n. comb. Colo.

Cremastus fulvescens var. *nigricans* Cresson, 1865. Ent. Soc. Phila., Proc. 4: 286. ♀.

orbitalis (Cresson). Tex., Colo.

Anomalon orbitalis Cresson, 1872. Amer. Ent. Soc., Trans. 4: 170. ♂.

pallitarsis (Cresson), n. comb. N. Y., Del., W. Va., S. C., Tex. Host: *Cirrophanus triangulifer* Grt.

Anomalon pallitarse Cresson, 1872. Amer. Ent. Soc., Trans. 4: 170. ♂.

Anomalon palliditarse Dalla Torre, 1901. Cat. Hym., v. 3, p. 168. Emend.

Genus LIOPTERNA Townes

Liopterna Townes, 1971. Amer. Ent. Inst., Mem. 17: 138.

Type-species: *Liopterna schlingeri* Townes. Monotypic and orig. desig.

A single species is known.

schlingeri Townes. Southern Calif. Known from a single male collected at a locality cited by

Townes as 3 miles west of "Octoella Wells," Calif. It is apparent that this is a misspelling for Ocotilla Wells in San Diego County. The type-locality would presumably lie at the eastern edge of the Anza-Borrego Desert State Park.

Liopterna schlingeri Townes, 1971. Amer. Ent. Inst., Mem. 17: 138. ♂.

Genus THERION Curtis

Therion Curtis, 1829-1830. Guide to Arrangement Brit. Insects, p. 101.

Type-species: *Ichneumon circumflexus* Linnaeus. Desig. by Curtis, 1839.

Therium Agassiz, 1846. Nom. Zool., Index Univ., p. 368. Emend.

Exochilum Wesmael, 1849. [Brussels] Acad. Roy. de Belg., Bul. 16 (pt. 2): 119, 222.

Type-species: *Ichneumon circumflexus* Linnaeus. Monotypic.

According to Townes (1971) this moderately large genus is known from all zoogeographic regions except the Australian Region.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 156-157.

circumflexum (Linnaeus). Que. w. to s.w. B. C., s. to N. J., N. Mex., and Calif.; Eurasia; n. Africa. Host: *Acrionicta dactylina hesperida* Sm.?

Ichneumon circumflexus Linnaeus, 1758. Syst. Nat., ed. 10, v. 1, p. 566. [female].

Erochilum occidentale Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 366. ♀.

Anomalon nigrum Provancher, 1879. Nat. Canad. 11 (no. 127): 142. ♂, ♀.

Anomalon japonicum Cameron, 1906. Entomologist 39: 98. ♀.

Erochilum callosum Shestakov, 1923. Mus. Zool., Russ. Acad. Sci., Ann. 24: 44. Sex not indicated.

Erochilum tarsatum Shestakov, 1923. Mus. Zool., Russ. Acad. Sci., Ann. 24: 44. Sex not indicated.

Erochilum laricis Matsumura, 1926 (1925). Mus. Zool., Russ. Acad. Sci., Ann. 26: 36. ♀.

Erochilum circumflexum ab. *nigroscutellata* Hellen, 1926. Soc. pro Fauna et Flora Fenn., Acta 56 (6): 15. ♀.

Erochilum circumflexum var. *nipponicum* Uchida, 1928. Hokkaido Imp. Univ., Faculty Agr., Jour. 21: 236. ♂, ♀.

Taxonomy: Uchida, 1958. Insecta Matsumurana 21: 92-93 (syn). —Townes, Momoi, and Townes, 1965. Amer. Ent. Inst., Mem. 5: 380-381 (syn.).

Morphology: Iwata, 1960. Acta Hym. 1: 169 (ovary and egg).

confusum (Ashmead). Va., N. C., S. C., Tex. Host: *Acrionicta americana* (Harris), *A. hastulifera* (J. E. S.).

Schizoloma confusa Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 426. ♀.

Erochilum acronyctae Riley, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 155. Nomen nudum.

Erochilum acronyctae Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 190. ♀. Townes (1945) selected as lectotype the specimen which Ashmead erroneously recorded as being from D. C.; the type-locality is actually Va.

Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 724.

fuscipenne (Norton). N. B. w. to Hudson Bay and s. B. C., s. to Va., N. Mex., and Calif. Host: *Estigmene acrea* (Drury), *Halisidota maculata* (Harris), *Acrionicta americana* (Harris), *A. dactylina hesperida* Sm., *Merolonche lupini* (Grt.).

Erochilum fuscipennis Norton, 1863. Ent. Soc. Phila., Proc. 1: 359. ♀.

Erochilum verticale Morley, 1913. Rev. Ichn. Brit. Mus., v. 2, p. 78. ♀.

Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 106.

longipes (Provancher). Tex., s.e. Wyo., Colo., Utah, Ariz., Nev., s. B. C., Oreg., Calif. Host: *Heliothis* sp., *Spodoptera erigua* (Hbn.).

Anomalon californicum Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 367. Preocc. in *Anomalon* by Cresson, 1879, p. 367.

Heteropelma longipes Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 120, 363. ♂.

Anomalon simile Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 423. ♀.

morio (Fabricius). N. S. w. to Wash., s. to s. Fla., s.e. Kans., and n.w. Nev.; Mexico. Host: *Cynia inopinata* (Hy. Edw.), *Diacrisia virginica* (F.), *Estigmene acrea* (Drury), *Halisidota maculata* (Harris), *Hyphantria cunea* (Drury).

Ichneumon morio Fabricius, 1781. Species Insectorum, v. 1, p. 436. [female].

Ophion mundus Harris, 1835. In Hitchcock, Rpt. Geol. Min. Bot. Zool. Mass., ed. 2, p. 585. Nomen nudum.

Ophion mundus Say, 1836. Boston Jour. Nat. Hist. 1: 239. ♂.

Anomalon flavipes Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym. v. 4, p. 170. ♂, ♀.

Anomalon nigripennis Provancher, 1874. Nat. Canad. 6: 173. ♂ (♀ misdet?).

Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 109.

- nigripes* Dreisbach. Mass., Conn., N. Y., Pa., n.w. Md., Mich. Host: *Halisidota tessellaris* (J. E. S.), *Euthisanotia grata* (F.).
Therion nigripes Dreisbach, 1947. N. Y. Ent. Soc., Jour. 55: 201. ♂, ♀.
- petiolatum* (Davis). Maine, N. Y., Mich., Wis., S. Dak.
Erochilum petiolatum Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 356. ♂, ♀.
- sassacus* Viereck. N. B. w. to Wash., s. to Ala. and Mo. Host: *Cynia inopinata* (Hy. Edw.), *C. tenera* Hbn., *Hyphantria cunea* (Drury), *H. textor* (Harris).
Therion sassacus Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 287. ♂.
Therion waccagum Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 287. ♂.
- tenuipes* (Norton). Mass., Conn., N. Y., Md., N. C., S. C., Ind.
Erochilum tenuipes Norton, 1863. Ent. Soc. Phila., Proc. 1: 360. ♀.
Erochilum diabolus Morley, 1913. Rev. Ichn. Brit. Mus., v. 2, p. 73. ♀.
- Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 106.
- texanum* (Ashmead). Mass. s. to e. N. C., w. to n.e. Kans. and Tex.; Mexico? Ecology: Flies around *Smilar*. Host: *Psychomorpha epimenis* (Drury).
Erochilum texanum Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 426. ♂.
- varicolor* (Viereck). N. B., Me., N. H., Vt., Conn., N. Y., Pa., Md., s.w. Va., w. N. C., N. Mex.
Erochilum varicolor Viereck, 1903. In Skinner, Amer. Ent. Soc., Trans. 29: 90. ♂.

Genus HETEROPELMA Wesmael

- Schizoloma* Wesmael, 1849. [Brussels] Acad. Roy. de Belg., Bul. 16 (pt. 2): 120.
 Type-species: *Ichneumon amictus* Fabricius. Monotypic.
- Heteropelma* Wesmael, 1849. [Brussels] Acad. Roy. de Belg., Bul. 16 (pt. 2): 120.
 Type-species: *Heteropelma calcator* Wesmael. Monotypic.
- Schizopoma* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 145, 220. Unnecessary n. name for *Schizoloma* Wesmael.
- Tanypelma* Townes, 1971. Amer. Ent. Inst., Mem. 17: 157.
 Type-species: *Heteropelma fulvicorne* Townes. Orig. desig.
- In his revision of *Heteropelma*, Gauld (1976) recognized 17 species in the world. The genus is known from all zoogeographic regions except the Ethiopian Region.
- Revision: Gauld, 1976. Brit. Mus. (Nat. Hist.) Ent., Bul. 34: 155-219 (spp. of the world).
- Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 157-158 (syn.). —Gauld, 1976. Brit. Mus. (Nat. Hist.) Ent., Bul. 33: 51-53.
- datanae* Riley. Que. w. to n. Minn., s. to s. Ga., s. La., and n.e. Kans. Host: *Datana contracta* Wlk., *D. integerrima* G. and R., *D. ministra* (Drury), *D. perspicua* G. and R.
Anomalon flavicorne Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 171. ♀.
 Preocc. by Say, 1823.
- Heteropelma datanae* Riley, 1888. U. S. Dept. Agr., Insect Life 1: 177. "♀" = ♂, ♀.
Heteropelma fulvicorne (!) Morley, 1913. Rev. Ichn. Brit. Mus., v. 2, p. 68. Lapsus for and misidentification of *Anomalon flavicornis* Say.
- Heteropelma fulvicorne* Townes, 1945. Amer. Ent. Soc., Mem. 11: 729. N. name for *A. flavicorne* Brulle.
- Taxonomy: Gauld, 1976. Brit. Mus. (Nat. Hist.) Ent., Bul. 34: 185-187.

Genus GRAVENHORSTIA Boie

- Gauld (1976) recognized four subgenera, only one of which has Nearctic species.
- Taxonomy: Gauld, 1976. Brit. Mus. (Nat. Hist.) Ent., Bul. 33: 55-61.

Genus GRAVENHORSTIA Subgenus GRAVENHORSTIA Boie

- Gravenhorstia* Boie, 1856. Arch. f. Naturgesch. 2: 42.
 Type-species: *Gravenhorstia picta* Boie. Monotypic.

Odontopsis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 150. Preocc. by Hasselt, 1823.

Type-species: *Gravenhorstia picta* Boie. Monotypically included and desig. by Viereck, 1914. Dalla Torre (1901) placed *Odontopsis* in synonymy with *Gravenhorstia*, but no species were thereby included, contrary to the statement of Perkins (1962).

This subgenus is confined to the Mediterranean Basin.

Taxonomy: Perkins. 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 11: 440.

Genus GRAVENHORSTIA Subgenus ERIGORGUS Foerster

Erigorgus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 146.

Type-species: *Anomalon fibulator* Gravenhorst. Desig. by Perkins, 1962 from three species included by Brischke, 1880.

Symptristis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 146.

Type-species: *Anomalon ferrugineus* Norton. By subsequent monotypy from inclusion by Viereck, 1917.

Paranomalon Viereck, 1912. Ent. Soc. Wash., Proc. 14: 175.

Type-species: *Ophion flavifrons* Gravenhorst. Monotypic and orig. desig. See synonymy of *G. (E.) cerinops* (Gravenhorst).

This large subgenus is known from all zoogeographic regions except the Ethiopian Region.

Taxonomy: Perkins, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 11: 422, 455. —Townes, 1971.

Amer. Ent. Inst., Mem. 17: 133-134.

ambigua (Norton). Mass.

Anomalon ambiguus Norton, 1863. Ent. Soc. Phila., Proc. 1: 362. ♀.

cerinops (Gravenhorst). Greenland?; Eurasia.

Ophion flavifrons Gravenhorst, 1807. Vergl. Uebers. Zool. Systeme, p. 267. Sex not indicated. Preocc. by Fabricius, 1798.

Anomalon cerinops Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 658. ♂, ♀.

Ophion (Anomalon) pubescens Zetterstedt, 1840. Insecta Lapponica, Hym., p. 393. ♂.

Taxonomy: Holmgren, 1860 (1858). Svenska Vetensk.-Akad. Handl. (n. f.) 2 (8): 20-21 (syn.).

—Lundbeck, 1897 (1896). Dansk Naturhist. For. Kjobenhavn, Vidensk. Meddel. (for 1896), p. 235 (Greenland record).

curta (Norton). Maine w. to Alta., s. to Ark., Tex., and Colo.

Anomalon curtus Norton, 1863. Ent. Soc. Phila., Proc. 1: 362. ♂.

edwardsii (Cresson). Southwestern B. C.

Anomalon Edwardsii Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 367. ♀.

eureka (Ashmead). Southwestern S. Dak., Colo., w. Mont., s.w. B. C., s.e. Wash., n.e. Calif.

Anomalon(?) eureka Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 423. ♀.

ferruginea (Norton). Tenn., Ga., Ill., Tex.

Anomalon ferrugineus Norton, 1863. Ent. Soc. Phila., Proc. 1: 363. ♀.

neglecta (Morley). Hudson Bay. The reference by Gauld (1976) to *Therion neglectum* (Morley)

was, according to a letter I received from him in 1976, based upon Morley's male from N. S. The latter was excluded as a syntype by Morley's statement that "four pairs, including the type, were taken about Hudson's Bay in 1844, except a single male found ... in Nova Scotia." The identification by Townes (1961) was based upon a female syntype labeled "Hudsons Bay."

Exochilum neglectum Morley, 1913. Rev. Ichn. Brit. Mus., v. 2, p. 76. ♂, ♀.

Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 106. —Gauld, 1976. Brit. Mus. (Nat. Hist.) Ent., Bul. 33: 51.

propinqua (Cresson). Colo.

Anomalon propinquum Cresson, 1865. Ent. Soc. Phila., Proc. 4: 284. ♂.

rotunda (Davis). Northeastern Kans.

Anomalon rotundus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 360. ♂.

- rufula* (Provancher). Que., N. H., Mass., N. Y., Md., n. Va., Ont., Ind.
Anomalon rufulum Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 80. ♀.
semirufa (Norton). Que. w. to s.e. S. Dak., s. to Md., Tenn., and n.e. Kans.
Anomalon semi-rufus Norton, 1863. Ent. Soc. Phila., Proc. 1: 362. ♀.
suburbis (Davis). Northern Idaho.
Anomalon suburbie Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 358. ♂, ♀.
xanthopsis (Ashmead). Colo., w. Mont., n.e. Calif.
Anomalon xanthopsis Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 423. ♂.

Genus TRICHOMMA Wesmael

- Trichomma* Wesmael, 1849. [Brussels] Acad. Roy. de Belg., Bul. 16 (pt. 2): 119, 139.
 Type-species: *Anomalon (Trichomma) fulvidens* Wesmael. Monotypic.
Trichomella Szepligeti, 1910. Leyden Mus., Notes 32: 91.
 Type-species: *Trichomma clavipes* Krieger. Desig. by Viereck, 1914.
 This moderately large genus is known from all zoogeographic regions except the Ethiopian Region.
enecator (Rossi). Eurasia. Introduced in N. J. in 1931 without becoming established. Host:
Grapholitha molesta (Bsk.). The host cited was the target species for the releases in N. J.
Ichneumon Enecator Rossi, 1790. Fauna Etrusca, v. 2, p. 48. ♀.
Trichomma ruficoxis Foerster, 1860. Naturh. Ver. Rheinlande, Verh. 17: 149. ♀.
 Taxonomy: Krieger, 1904. Ztschr. System. Hym. Dipt. 4: 165-166.
 Biology: Rosenberg, 1934. Bul. Ent. Res. 25: 214-217. —Telenga, 1934. Anz. f. Schaedlingsk. 10: 101-106. —Allen, Holloway, and Haeussler, 1940. U. S. Dept. Agr., Cir. 561: 59-60.
 —Simmonds, 1944. Sci. Agr. 25: 1-30. —Zech, 1959. Ztschr. f. Angew. Ent. 44: 204.
maceratum (Cresson). Colo., s. Idaho, s.w. Utah, Calif. Host: *Etiella zinkenella* (Treit.), *Melitaria dentata* (Grt.), *Pima granitellum* (Rag.), *Barbara colfaxiana taxifoliella* (Bsk.).
Anomalon maceratum Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 368. ♂.
Trichomma granitellae Viereck, 1912. U. S. Natl. Mus., Proc. 42: 645. ♂.
Trichomma epischniae Viereck, 1912. U. S. Natl. Mus., Proc. 42: 645. ♀.
 Taxonomy: Townes and Townes, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 396 (syn.).
reticulatum Davis. Southwestern Maine, N. Y., N. J., Ohio, s. Mich., e. Mo., n.e. Kans., B. C.?
 Host: *Grapholitha molesta* (Bsk.), *Melissopus latiferreanus* (Wlsm.), *Canarsia ulmiarrosorella* Clem., *Nephopteryx subfuscella* (Rag.).
Trichomma reticulata Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 361. ♀.

Genus AGRYPON Foerster

- Agrypion* Foerster, 1860. Naturh. Ver. Rheinlande, Verh. 17: 151.
 Type-species: *Ophion flaveolatum* Gravenhorst. Desig. by Morley, 1913.
Trichonotus Cameron, 1905 (July). Roy. Asiatic Soc., Straits Branch, Jour. 44: 124. Preocc. by Schneider, 1801; Rafinesque, 1815; and Loew, 1857.
 Type-species: *Trichonotus reticulatus* Cameron. Monotypic.
Trichionotus Cameron, 1905 (August). Ann. and Mag. Nat. Hist. (7) 16: 168.
 Type-species: *Trichionotus reticulatus* Cameron. Monotypic. The holotype of the type-species is also the holotype of *Trichonotus reticulatus* Cameron.
Odontagrypon Cameron, 1906. So. African Mus., Ann. 5: 90.
 Type-species: *Odontagrypon spilonotus* Cameron. Desig. by Viereck, 1914.
Agrypion subg. *Paragrypon* Uchida, 1941. Insecta Matsumurana 15: 159.
 Type-species: *Gongropelma kikuchii* Uchida. Orig. desig.
Dioborus Rao, 1953. Indian Forest Rec., New Ser., Ent. 8: 204.
 Type-species: *Dioborus indica* Rao. Monotypic and orig. desig. The type-species is regarded as a synonym of *A. nox* Morley.

This is a very large genus represented in all zoogeographic regions. The name *Labrorychus* was for many years incorrectly applied to a large part of the species in this genus because of an erroneous type-species designation by Viereck (1914). The names *Trichonotus* and *Trichionotus* were more recently applied to most of the species which had been in *Labrorychus* auct., but Gauld (1976) has suppressed them as synonyms of *Agrypus*. Gauld apparently did not know more than a few species intermediate between *Agrypus* and *Trichionotus*, but the discussion by Schmid (1970, p. 1539) appears to support Gauld's suppression of *Trichionotus*.

Taxonomy: Viereck, 1914. U. S. Natl. Mus., Bul. 83: 80. —Townes, 1957. Ent. Soc. Wash., Proc. 63: 115 (syn.). —Townes, Townes, and Gupta, 1961. Amer. Ent. Inst., Mem. 1: 311, 316 (syn.). —Perkins, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 11: 433-434 (type-species correction). —Townes, Momoi, and Townes, 1965. Amer. Ent. Inst., Mem. 5: 373, 374 (syn.). —Walkley, 1967. In Krombein, U. S. Dept. Agr., Agr. Monog. 2, sup. 2, p. 211 (homonymy *Trichonotus*). —Schmid, 1970. Canad. Ent. 102: 1539-1541. —Townes, 1971. Amer. Ent. Inst., Mem. 17: 141-142, 143-144. —Gauld, 1976. Brit. Mus. (Nat. Hist.) Ent., Bul. 33: 66-68, 70.

aestivale (Viereck), n. comb. Mass., N. Y., Md., n. Va. Host: *Archips fervidanus* (Clem.).

Labrorychus aestivalis Viereck, 1921. Psyche 28: 79. ♀.

alpinum (Davis), n. comb. N. Y., Ont., Mich., Wis.?, Sask., Colo., Idaho. Host: *Thymelicus lineola* (Ochs.?). *Choristoneura pinus* Free?

Anomalus alpinus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 360. ♀.

anale (Say), n. comb. Que. w. to Wash., s. to D. C. and s. Ill. Host: *Orgyia leucostigma* (J. E. S.), *Malacosoma americanum* (F.), *M. californicum fragile* (Str.), *M. distria* Hbn.,

Ichthyura inclusa Hbn., *Cycnia tenera* Hbn.

Ophion analis Say, 1829. Contrib. Maclurian Lyceum to Arts and Sci. 1: 75. ♀.

Taxonomy: Cushman and Gahan, 1921. Ent. Soc. Wash., Proc. 23: 168.

boreale Ashmead, restored comb. East-central B. C.?

Agrypus boreale Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 424. ♀. The label of the holotype reads: "Ft. McLeod, Brit. Amer.; Aug., 1882." British America being synonymous with Canada, it is not altogether certain that the type-locality is Ft. McLeod, B. C. rather than Ft. Macleod in southern Alta. (the latter being spelled [or misspelled] McLeod in an 1886 Atlas belonging to me). The two places should be different enough ecologically for this question to be resolved with relative certainty.

canadense (Provancher), n. comb. Que.

Anomalus canadensis Provancher, 1874. Nat. Canad. 6: 175. ♀.

Taxonomy: Barron, 1975. Nat. Canad. 102: 439-440 (lectotype selected).

carinifer Schmid. Colo., s.w. Alta., s. B. C., n.e. Calif.

Agrypus carinifer Schmid, 1970. Canad. Ent. 102: 1540. ♂, ♀.

chlamidiatum (Provancher), n. comb. Que., Maine?, N. H.?

Anomalus chlamidiatum Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 82. ♀.

Atrometus flavifrons Ashmead, 1902. In Slosson, Ent. News 13: 6. Nomen nudum.

filiforme (Provancher), n. comb. Que.

Anomalus filiforme Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 83. ♀ (♂ misdet.?).

flaveolatum (Gravenhorst). N. S.?, Eurasia. A species identified as *A. flaveolatum* was introduced in N. S. from 1956 through 1958, and *A. flaveolatum* has been reported as being established there. Host: *Operophtera brumata* (L.). Schmid (1970) stated that *Agrypus provancheri* (Dalla Torre) may be a subspecies or synonym of *A. flaveolatum*; therefore, it needs to be corroborated that the species that is said to have been recovered in N. S. is not the one that had already been there prior to any releases of individuals from Europe, or, otherwise, that the introduced species really is *A. flaveolatum*. The host cited was the target species for releases in N. S. of the species identified as *A. flaveolatum*.

Ichneumon auricapillus Gmelin, 1790. In Linnaeus, Syst. Nat., ed. 13, v. 1, pt. 5, p. 2699.

Sex not indicated. Syn.?

Ophion flaveolatum Gravenhorst, 1807. Vergl. Uebers. Zool. Systeme, p. 268. [male?].

Ichneumon laedator Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 264; 9: 318. [female].

Ichneumon cribrator Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 264; 9: 318. [male].

Anomalon septentrionale Holmgren, 1857. Svenska Vetensk.-Akad., Ofvers. af ... Forhandl. 14: 179. ♂, ♀.

Taxonomy: Thomson, 1892. Opusc. Ent. 16: 1771 (syn.). —Roman, 1912. Zool. Bidr. Uppsala 1: 248, 261 (syn.). —Schmid, 1970. Canad. Ent. 102: 1541.

Biology: McGugan and Coppel, 1962. Commonwealth Inst. Biol. Control, Tech. Commun. 2: 65. —Embree, 1966. Canad. Ent. 98: 1160. —Embree, 1971. Commonwealth Inst. Biol. Contr., Tech. Commun. 4: 168, 169-170.

melleum (Cresson). R. I., Md., Va., Tex. Ecology: Occurs in "overgrown fields."

Anomalon melleum Cresson, 1872. Amer. Ent. Soc., Trans. 4: 171. ♀.

metallicum (Norton). Mass., R. I., Mich.

Anomalon metallicum Norton, 1863. Ent. Soc. Phila., Proc. 1: 364. ♀.

prismaticum (Norton), n. comb. N. B.?, Que.?, Maine?, N. H.?, Vt.?, Mass., Conn., Ont.?, Ohio?, Minn.? Host: *Ostrinia nubilalis* (Hbn.)?, *O. penitalis* (Grt.)?, *Archips cerasivoranus* (Fitch)? The host and distribution data added by Walkley (1967) are based on specimens in the U. S. Natl. Museum collection. I have queried all of these because I do not feel assured that there is any material in the U. S. Natl. Museum collection which is reliably identified as *A. prismaticum*.

Anomalon prismaticum Norton, 1863. Ent. Soc. Phila., Proc. 1: 364. ♀.

Taxonomy: Walkley, 1967. In Krombein, U. S. Dept. Agr., Agr. Monog. 2, sup. 2, p. 211.

provancheri (Dalla Torre). N. S. w. to s.e. Alaska, s. to n. Ga., Iowa, Colo., Ariz., and Calif.

Host: *Melanolophia imitata* (Wlk.), *Operophtera bruceata* (Hulst). No host data were cited by Schmid (1970).

Anomalon unicolor Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 82. ♀.

Preocc. by Ratzeburg, 1874.

Anomalon Provancheri Dalla Torre, 1901. Cat. Hym., v. 3, p. 169. N. name for *Anomalon unicolor* Provancher.

Atrometus alaskensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 233. ♂, ♀.

Taxonomy: Walkley, 1958. In Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2, sup. 1, p. 61. —Schmid, 1970. Canad. Ent. 102: 1540-1541.

pseudargioli (Howard). Mass., R. I., Conn., W. Va. Host: *Celastrina pseudargiolus* (B. and L.), *Strymon melinus* (Hbn.).

Anomalon pseudargioli Howard, 1889. In Scudder, Butterflies of East. U. S., v. 3, p. 1881. ♀.

Genus PARANIA Morley

Parania Morley, 1913. Rev. Ichn. Brit. Mus., v. 2, p. 96.

Type-species: *Parania nototrachoides* Morley. Monotypic. The type-species is regarded as a synonym of *P. tricolor* (Szepligeti).

This is a small Neotropical, Holarctic, Oriental, and Ethiopian genus. Until recently the name *Atrometus* was incorrectly applied to this genus.

Revision: Schmid, 1969. Canad. Ent. 101: 778-784.

Taxonomy: Townes, Townes, and Gupta, 1961. Amer. Ent. Inst., Mem. 1: 315-316 (syn.).

—Townes, 1971. Amer. Ent. Inst., Mem. 17: 144-145, 153. —Gauld, 1976. Brit. Mus. (Nat. Hist.) Ent., Bul. 33: 70-71.

badia (Schmid). Mass., Conn., N. Y., Ohio, s. Mich., w. N. Dak. Host: *Archips argyrospitus* (Wlk.).

Atrometus badia Schmid, 1969. Canad. Ent. 101: 779. ♂, ♀.

geniculata (Holmgren). N. S. w. to w.-cent. B. C., s. to n. Ga., Kans., s.w. N. Mex., and s. Calif.; Europe. Host: *Psilcorsis* sp., *Homadaula anisocentra* (Meyr.), *Acleris variana* (Fern.),

Argyrotaenia velutinana (Wlk.), *Choristoneura fumiferana* (Clem.), *C. lambertiana* (Bsk.), *Anchylopera nubeculana* Clem., *Ancylis comptana* (Froel.), *Grapholitha molesta* (Bsk.), *Phaneta amphorana* (Wlsm.), *Rhyacionia buoliana* (D. and S.), *R. frustrana bushnelli* (Bsk.), *R. f. frustrana* (Comst.), *R. neomexicana* (Dyar), *Spilonota ocellana* (D. and S.), *Strepsicrates smithiana* (Wlsm.), *Anarsia lineatella* Zell., *Aroga trialbanaculella* (Chamb.), *Acrobasis rubrifasciella* Pack., *Dioryctria reniculella* (Grt.), *Ostrinia nubilalis* (Hbn.), *Eublemma minimum* (Gn.).

Anomalon geniculatum Holmgren, 1857. Svenska Vetensk.-Akad., Ofvers. af ... Forhandl. 14: 182. ♂, ♀.

Angitia paediscae Riley, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 156. Nomen nudum.

Agrypon paediscae Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 190, errata. ♂, ♀. The spelling *praediscae* appears on p. 190 and the correction *paediscae* appears in the errata, the errata evidently being published at the same time as the rest of the paper. The lectotype selected by Schmid (1969) is here rejected because it was not one of Ashmead's syntypes. Although Ashmead's syntypes included several specimens from Fortress Monroe (=Fort Monroe, Hampton), Va., it was indicated by Ashmead that they were specimens labeled 3422 with the superscript 01. Notes in the U. S. Natl. Museum under that Bureau of Entomology number indicate that specimens so labeled were reared from the olethreutid *Strepsicrates smithiana* collected at Ft. Monroe on *Myrica cerifera*, but that Bureau number does not apply to specimens reared from other hosts. The specimen here rejected as lectotype is labeled as being reared from a lepidopteran on roots of grass. Among the labels of the female specimen here selected as lectotype are Ashmead's handwritten identification label and a label bearing the aforementioned Bureau of Entomology number and the date "10/7, 84" (i.e. July 10, 1884).

Anomalon clavipes Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 359. ♂.

Podogaster eueitricivorus Rohwer, 1914. Ent. Soc. Wash., Proc. 16: 142. ♂, ♀.

obscura (Schmid), n. status. South-cent. Ariz. If this taxon proves to be conspecific with *geniculata*, it would almost certainly be better treated as a synonym of *geniculata* rather than as a subspecies thereof.

Atrometus geniculatus obscurus Schmid, 1969. Canad. Ent. 101: 783. ♂, ♀.

Genus METOA Townes

Metoa Townes, 1971. Amer. Ent. Inst., Mem. 17: 147.

Type-species: *Anomalon exile* Provancher. Monotypic and orig. desig.

This is a Nearctic genus. Townes said that he had seen eight species.

exilis (Provancher). Que. s. to N. C., w. to Mich. Several host records were published in 1898 and 1911, but I suspect that they involve misidentifications of *Anomalon exile* and doubt that they would pertain to any species of *Metoa*.

Anomalon exile Provancher, 1874. Nat. Canad. 6: 175. ♀.

verbosa (Cresson), n. comb. Western Oreg. s. to s. Calif.

Anomalon verbosum Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 368. ♂, ♀.

Genus CALCANEUM Townes

Calcaneum Townes, 1971. Amer. Ent. Inst., Mem. 17: 145.

Type-species: *Calcaneum oporinum* Townes. Monotypic and orig. desig.

This is a Nearctic genus. Specimens which I have seen from N. Mex. and s.e. Wash. appear to represent an undescribed species, and thus it appears that there are at least two species in the genus.

oporinum Townes. Conn., N. Y., N. J., Md., Va. Ecology: Occurs in fall in fields.

Calcaneum oporinum Townes, 1971. Amer. Ent. Inst., Mem. 17: 146. ♂, ♀.

Genus OPHIONELLUS Westwood

Pharsalia Cresson, 1872. Amer. Ent. Soc., Trans. 4: 177. Preocc. by Thomson, 1864.

Type-species: *Pharsalia texana* Cresson. Desig. by Viereck, 1914.

Ophonellus Westwood, 1874. *Thesaurus Ent. Oxon.*, p. 128.

Type-species: *Ophonellus fragilis* Westwood. Monotypic.

Hymenopharsalia Morley, 1913. *Rev. Ichn. Brit. Mus.*, v. 2, p. 97. N. name for *Pharsalia* Cresson. The volume in which Morley proposed this name was received by the Smithsonian Institution on May 2, 1913.

Paraphionellus Brues and Richardson, 1913. *Amer. Mus. Nat. Hist.*, Bul. 32: 495.

Unnecessary n. name for *Pharsalia* Cresson. The paper in which this name was proposed is dated Oct. 7, 1913 and was received at the Smithsonian Institution on Oct. 11, 1913.

This large genus is confined to the New World, most of the species being Neotropical.

Revision: Cushman, 1922. *U. S. Natl. Mus.*, Proc. 60 (21): 14-20.

Taxonomy: Townes, 1945. *Amer. Ent. Soc.*, Mem. 11: 710 (syn.). —Gauld, 1976. *Brit. Mus. (Nat. Hist.) Ent.*, Bul. 33: 82-84.

bridwelli (Cushman). Md., n. Va., S. C.

Hymenopharsalia bridwelli Cushman, 1922. *U. S. Natl. Mus.*, Proc. 60 (21): 19. ♀.

foutsii (Cushman). Que., Maine, Mass., N. Y., Pa., Md., Ind., Mo., Mont., Ariz. Host: *Homadula anisocentra* (Meyr.), *Episimus argutanus* (Clem.), *Arogalea cristifasciella* (Chamb.), gelechiid on *Salix*.

Hymenopharsalia foutsii Cushman, 1922. *U. S. Natl. Mus.*, Proc. 60 (21): 18. ♀.

texanus (Cresson). S. C., Ga., Kans., Tex., N. Mex., Calif.; Mexico.

Pharsalia texana Cresson, 1872. *Amer. Ent. Soc.*, Trans. 4: 177. ♀.

virginiensis (Cresson). N. Y., Md., D. C., Va., W. Va., S. C., Ind., Mo.

Pharsalia virginiensis Cresson, 1872. *Amer. Ent. Soc.*, Trans. 4: 177. "♂" = ♀.

Genus OPHIOPTERUS Brulle

Ophiopteris Brulle, 1846. *In* Lepeletier, *Hist. Nat. Ins. Hym.*, v. 4, p. 153.

Type-species: *Ophiopteris coarctatus* Brulle. Monotypic.

Ophionopteris(?) Ashmead, 1900. *U. S. Natl. Mus.*, Proc. 23: 87, 180, 215.

Ophionopteris Schulz, 1906. *Spolia Hym.*, p. 96. Emend.

Ophionopteris Morley, 1912. *Rev. Ichn. Brit. Mus.*, v. 1, p. 66. Emend. Preocc. by Schulz, 1906.

This is a small genus of Neotropical and Nearctic distribution.

cincticornis (Cresson). D. C., S. C., Ga., Ill., Tex.; Puerto Rico, Cuba, Mexico.

Trachynotus cincticornis Cresson, 1865. *Ent. Soc. Phila.*, Proc. 4: 49. ♂, ♀.

Ophiopteris ferrugineus Cresson, 1873. *Acad. Nat. Sci. Phila.*, Proc. 25: 380. ♀.

Nototrachys(?) *annulicornis* Ashmead, 1890 (1889). *U. S. Natl. Mus.*, Proc. 12: 422. ♂, ♀.

Taxonomy: Townes, 1945. *Amer. Ent. Soc.*, Mem. 11: 711 (syn.).

UNPLACED TAXA OF GRAVENHORSTHINI

Anomalon errufum Walkley, 1958. *In* Krombein *et al.*, *U. S. Dept. Agr., Agr. Monog.* 2, sup. 1, p. 62. N. name for *Anomalon rufus* Provancher (which see).

Anomalon nigrum Norton, 1863. *Ent. Soc. Phila.*, Proc. 1: 363. ♂. Mass. Gauld's (1976) placement of this species in *Gravenhorstia* (*Erigorgus*) was based upon a specimen from Mexico identified as *A. nigrum* by Morley (1913). Morley's identification could not serve to fix the identity of *A. nigrum* (the holotype of which is lost) unless it can be shown (1) that Morley's Mexican species also occurs in Mass. and (2) that specimens from Mass. also agree with Norton's description (the combination seeming very improbable).

Taxonomy: Morley, 1913. *Rev. Ich. Brit. Mus.*, v. 2, p. 86. —Gauld, 1976. *Brit. Mus. (Nat. Hist.) Ent.*, Bul. 33: 61.

Anomalon nigro-varium Brulle, 1846. *In* Lepeletier, *Hist. Nat. Ins. Hym.*, v. 4, p. 172. ♀.

l'Amerique sept.; Bastard. The holotype has not been found.

Taxonomy: Norton, 1863. *Ent. Soc. Phila.*, Proc. 1: 359. —Townes, 1961. *Ent. Soc. Wash.*, Proc. 63: 104 (search for holotype).

Anomalon rufus Provancher, 1874. Nat. Canad. 6: 174. ♀. Que. Preocc. by *Anomalon rufum* Holmgren, 1857; replaced by *Anomalon exrufum* Walkley (which see). Barron (1975) did not find the holotype, but thought there was strong evidence that the holotype would be a species of *Trichionotus*.

Taxonomy: Barron, 1975. Nat. Canad. 102: 556-557.

Anomalon vivum Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 368. ♀. Oreg. No type specimen was found by Cresson (1916).

Taxonomy: Cresson, 1916. Amer. Ent. Soc., Mem. 1: 63.

TRIBE ANOMALONINI

This tribe includes only two genera, *Anomalon* and *Neogreeneia*.

Genus ANOMALON Panzer

Anomalon Jurine, 1801. In Panzer, Litteratur-Ztg. Erlangen, Intelligenzbl. 1: 163. Nomen nudum.

Anomalon Panzer, 1804. Faunae Ins. German., heft 94, pl. 15.

Type-species: *Anomalon cruentatus* Panzer. Monotypic. The type-species is here regarded as a synonym of *A. cruentatum* (Geoffroy), n. comb.

Trachynotus Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 713. Preocc. by Latreille, 1829 (April).

Type-species: *Ophion foliator* Fabricius. Monotypic. The type-species is here regarded as a synonym of *A. cruentatum* (Geoffroy).

Ochlerus Gistel, 1848. Naturgesch. Thierreichs f. hoehere Schulen, p. xi. N. name for *Trachynotus* Gravenhorst. Preocc. by Spinola, 1837.

Nototrachys Marshall, 1872. Ent. Soc. London, Trans. 20: 259. N. name for *Trachynotus* Gravenhorst.

Ophioneura Cameron, 1904. Albany Mus., Rec. 1: 174.

Type-species: *Ophioneura flavomaculata* Cameron. Monotypic.

Stictophion Cameron, 1906. So. African Mus., Ann. 5: 85.

Type-species: *Stictophion rufipes* Cameron. Desig. by Viereck, 1914.

Erythrophion Cameron, 1906. So. African Mus., Ann. 5: 87.

Type-species: *Erythrophion ferrugineus* Cameron. Monotypic. The type-species is regarded as a synonym of *A. rufipes* (Cameron).

Anomalum Schulz, 1906. Spolia Hym., p. 96. Emend.

Trachyocterus Morley, 1912. Rev. Ichn. Brit. Mus., v. 1, p. 67.

Type-species: *Trachyocterus primus* Morley. Monotypic.

Pseudonototrachys Meyer, 1930. Konowia 9: 221.

Type-species: *Pseudonototrachys pallidus* Meyer. Monotypic. The type-species is regarded as a synonym of *A. kozlovi* (Kokujev).

Microcremastus Hedwig, 1961. Beitr. z. Naturkundlichen Forsch. Suedwestdeut. 19: 292.

Type-species: *Microcremastus amseli* Hedwig. Monotypic and desig. by Townes, 1971. The included taxa were *M. amseli* and *M. amseli* "f. flavus" Hedwig; for those who consider the latter to be an unavailable name, *M. amseli* is the type-species by monotypy.

This is a very large genus, known from all zoogeographic regions. As far as is known, the usual hosts are soil-dwelling larvae of Coleoptera, but an undescribed species from Maryland has been reared by Dr. J. F. G. Clarke from an undescribed species of *Exartema* (Lepidoptera: Olethreutidae) which in turn was reared from the seed heads of an unidentified species of annual plant which was growing in a swampy area where the basal portions of the plants were submerged in water. Oddly enough, this new species of *Anomalon* from Maryland is virtually indistinguishable from *Anomalon californicum* (Cresson), which is known to me from Hawaii and California (as far north as San Francisco) and apparently is found in relatively dry habitats.

californicum (Cresson). N. Mex.?, Ariz.?, mid-coastal and s. Calif.; Hawaii. The N. Mex. and Ariz. records are cited with a query because it appears that, as with *ejuncidum* (Say), a

number of species have been confused under the name *californicum* (also see introduction to *Anomalon*).

Nototrachys californicus Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 366. ♀. **canadense** (Provancher), revised status. Que. Cushman and Gahan (1921) suppressed *canadense* as a synonym of *ejuncidum* (which see).
Trachynotus Canadensis Provancher, 1879. Nat. Canad. 11 (no. 126): 119. ♀. Preocc. in *Anomalon* by *Agrypon canadense* (Provancher), 1874.

Taxonomy: Cushman and Gahan, 1921. Ent. Soc. Wash., Proc. 23: 156 (syn.).

ejuncidum Say. "United States." It is my opinion that perhaps as many as ten species have been confused under this name; therefore, I have resurrected the names suppressed as synonyms of *ejuncidum* by Cushman and Gahan (1921) and Townes (1945) and leave it to a revisor to determine the application of the name *ejuncidum*.

Anomalon ejuncidus Say, 1836. Boston Jour. Nat. Hist. 1: 233, 241-242. ♀.

Taxonomy: Cushman and Gahan, 1921. Ent. Soc. Wash., Proc. 23: 156. — Townes, 1945. Amer. Ent. Soc., Mem. 11: 708-709 (syn.).

fuscatum (Cresson), revised status. Fla.; Cuba. Townes (1945) suppressed *fuscatum* as a synonym of *ejuncidum* (which see).

Trachynotus fuscatus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 50. ♂, ♀.

Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 708 (syn.).

reticulatum (Cresson). Colo. It is my opinion that, as with *californicum* and *ejuncidum*, a number of species have been confused under the name *reticulatum*; therefore, for distribution I have cited only the type locality.

Trachynotus reticulatus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 285. ♂.

texanum (Cresson), revised status. Central Tex. Cushman and Gahan (1921) suppressed *texanum* as a synonym of *ejuncidum* (which see).

Trachynotus texanus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 169. ♀.

Taxonomy: Cushman and Gahan, 1921. Ent. Soc. Wash., Proc. 23: 156.

Genus NEOGREENEIA Viereck

Neogreeneia Viereck, 1912. U. S. Natl. Mus., Proc. 42: 641.

Type-species: *Neogreeneia picticornis* Viereck. Monotypic and orig. desig.

This is a small Nearctic and Neotropic genus. No hosts are known. Townes (1971) believed that *Neogreeneia* represents little more than a distinct species group of the genus *Anomalon*. Despite his decided lumping tendency, Gauld (1976) retained *Neogreeneia* as a valid genus.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 124, 125-126. — Gauld, 1976. Brit. Mus. (Nat. Hist.) Ent., Bul. 33: 88.

picticornis Viereck. N. Y. w. to s. Mich., s. to s. Fla. and n.e. Tex.

Neogreeneia picticornis Viereck, 1912. U. S. Natl. Mus., Proc. 42: 641. ♀.

SUBFAMILY CAMPOPLEGINAE

This large subfamily is represented by three tribes, Nonnini, Hellwigiini, and Campoplegini. The latter tribe includes the vast majority of genera and species of Campopleginae and is the only tribe represented in America north of Mexico.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 143-193 (genera of world as "Porizontinae").

TRIBE CAMPOPLEGINI

Townes (1961) subdivided the Campoplegini into two tribes, and Townes (1970, 1971) maintained the same tribal classification. I do not feel that this classification has any particular practical or phyletic merit, and, therefore, recognize only a single tribe here.

The Campoplegini are internal parasites of the larvae (cf. *Campoplex*) of Lepidoptera, Symphyta, and Coleoptera. Campoplegine parasites of Symphyta and Coleoptera are far less nu-

merous than those of Lepidoptera.

The generic classification adopted here is largely in agreement with that of Townes (1970). The few departures from that classification which are not based on more recent publications reflect my own thinking and prejudices regarding Campoplegini and the generic category in general.

Revision: Viereck, 1925; 1926. *Canad. Ent. 57*: 176-181, 198-204, 223-228, 296-303; 58: 2-8, 30-38, 71-78, 122-130, 143-149, 176-182, 196-201, 219-225, 257-260, 276-283 (revision mostly of specimens in *Canad. Natl. collection*; systematically unsound and not usable for identification).

Taxonomy: Townes, 1961. *In* Townes, Townes, and Gupta, *Amer. Ent. Inst., Mem. 1*: 449-451. —Townes, 1970 (1969). *Amer. Ent. Inst., Mem. 13*: 148-193 (genera of world). —Townes, 1971. *Amer. Ent. Inst., Mem. 17*: 241. —Finlayson, 1975. *Ent. Soc. Canada, Mem. 94*: 137 p. (final-instar larvae of most genera in North America which have been reared).

Genus SINOPHORUS Foerster

Sinophorus Foerster, 1868. *Naturh. Ver. Rheinlande, Verh. 25*: 153.

Type-species: *Limneria (Sinophorus) canarsiae* Ashmead. By subsequent monotypy from inclusion by Ashmead, 1898.

Eulimneria Schmiedeknecht, 1907. *Hym. Mitteleuropas*, p. 600.

Type-species: *Ichneumon albidus* Gmelin. *Desig. by Morley*, 1913.

Campoplex subg. *Campoletidea* Viereck, 1912. *U. S. Natl. Mus., Proc. 42*: 634. *N. syn.*

Type-species: *Campoplex (Campoletidea) caradrinae* Viereck. Monotypic and orig. *desig.*

This moderately large genus is somewhat arbitrarily delineated from *Campoplex*. It is Neotropical, Holarctic, and Oriental, with the great majority of species occurring in the Holarctic Region. The species apparently occur in grasslands or sparsely wooded areas. The hosts are various Lepidoptera.

albicinctus (Viereck), n. comb. N. J.?, e. N. C.?, Sask., Colo., s.e. Wyo., s. Alta., s. B. C. Ecology:

One of the specimens in the U. S. Natl. Museum collection was collected in the Rocky Mountains of Wyoming at an elevation of 9600 ft.

Pyracon albicinctum Viereck, 1925; 1926. *Canad. Ent. 57* (7): 180 (key); 58 (1): 4. ♂, ♀.

alkae (Ellinger and Sachtleben). Eurasia. Introduced in Mass., Conn., R. I., N. Y., Pa., Ont., Ohio, and Mich. between 1920 and 1933; reported as recovered in Mass. and Mich. by Jones (1929), but apparently not established in any of the release areas. Host: *Ostrinia nubilalis* (Hbn.). In literature published before the description of *alkae* in 1928 and in some literature for more than ten years thereafter, the species was misidentified as *crassifemur* (Thomson). Dr. R. I. Sailer (see Syme, 1971) is of the opinion that *alkae* is conspecific with *rufifemur* (Thomson), but I was unable to verify this by examining the *rufifemur* type. Material reared from both *Ostrinia nubilalis* and *Rhyacionia buoliana* (D. and S.) at the same locality would undoubtedly be very helpful in the solution of this question.

Limnerium alkae Ellinger and Sachtleben, 1928. *Internatl. Corn Borer Invest., Sci. Rpts. 1*: 115. ♂, ♀.

Taxonomy: Ellinger and Sachtleben, 1929. *Internatl. Corn Borer Invest., Sci. Rpts. 2*: 63-64.

—Aubert, 1959 (1958). *Soc. Ent. de France, Ann. 127*: 160. —Oehlke, 1963. *Beitr. z. Ent. 13*: 403 (lectotype selection). —Syme, 1971. *Commonwealth Inst. Biol. Control (Trinidad), Tech. Commun. 4*: 196 (footnote).

Biology: Paillot, 1928. *Internatl. Corn Borer Invest., Sci. Rpts. 1*: 83-91. —Jones, 1929. *U. S. Dept. Agr., Tech. Bul. 98*: 3, 24-27 (as *crassifemur*). —Thompson and Parker, 1930. *Jour. Agr. Res. 40*: 321-345 (as *crassifemur*). —Goidanich, 1931. *R. Ist. Super. Agr., Lab. di Ent., Bol. 4*: 106-113. —Baker and Arbuthnot, 1933. *Ent. Soc. Amer., Ann. 26*: 297-302 (as *crassifemur*). —Clark, 1934. *U. S. Dept. Agr., Tech. Bul. 455*: 11, 20, 27, 31. —Baker, Bradley, and Clark, 1949. *U. S. Dept. Agr., Tech. Bul. 983*: 6, 8, 133-137, 141. —Adlung, 1963. *Anz. f. Schaedlingsk. 36*: 174.

caradrinae (Viereck), n. comb. Southeastern Colo. Host: *Spodoptera exigua* (Hbn.)? Known to me only from the holotype and one other specimen, the former labeled as reared from *S. exigua* (as "*Caradrina exigua*") collected at Rocky Ford, Colo. The host record is queried because *S. exigua* is a much reared species, and it seems to me, therefore, that *caradrinae* may have been reared from some other noctuid which was misidentified as *exigua*.

Campoplex (*Campoletidea*) *caradrinae* Viereck, 1912. U. S. Natl. Mus., Proc. 42: 634. ♂.

eruficinctus (Walkley). Southwestern N. Dak., Nebr., n.e. Kans., n.w. Tex., Sask., s. Alta., n. Utah, s. Ariz. Host: *Heliothis oninis* (D. and S.), *H. zea* (Bod.).

Pyraconon ruficinctum Viereck, 1925; 1926. Canad. Ent. 57 (7): 180 (key); 58 (1): 5. ♂.

Formerly preocc. in *Campoplex* by Gravenhorst, 1829.

Campoplex eruficinctus Walkley, 1958. In Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2, sup. 1, p. 59. N. name for *P. ruficinctum* Viereck.

Taxonomy: Finlayson, 1975. Ent. Soc. Canada, Mem. 94: 21, 92, 135 (final-instar larva).

furus (Cresson), n. comb. N. Y. w. to Mich., s. to e. N. C. and Tex.

Limneria fura Cresson, 1872. Amer. Ent. Soc., Trans. 4: 173. ♀.

Limneria melanocora Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 430. ♀. The holotype is the same specimen as the holotype of *furus*.

Limnerium melanocorum Dalla Torre, 1901. Cat. Hym., v. 3, p. 99. Emend.

popofensis (Ashmead), n. comb. Southwestern Alaska. Known to me only from the Shumagin Islands (Popof Isl.) and Pribilof Islands (St. Paul Isl.), Alaska.

Zachresta popofensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 234. ♂.

rufifemur (Thomson). Eurasia. Introduced in Ont. in 1935 and 1955 through 1958; none of the suspected recoveries have been confirmed by identification of reared adult specimens (see Syme, 1971). Host: *Rhyacionia buoliana* (D. and S.). The host cited was the target species for releases of *rufifemur* in Ont.

Limneria rufifemur Thomson, 1887. Opusc. Ent. 11: 1106. [male, female].

Biology: Thorpe, 1930. Bul. Ent. Res. 21: 394. —Thorpe, 1932. Parasitology 24: 107-110.

—Thorpe and Caudle, 1939. Parasitology 30: 525, 527-528. —Juillet, 1959. Canad. Ent. 91: 713-716. —Wylie, 1960. Entomophaga 5: 119. —Pschorn-Walcher, 1960. Pflanzenschutz 25: 17. —Adlung and Sailer, 1963. Allg. Forst- u. Jagdztg. 134: 231, 233. —Schindler, 1965. Ztschr. f. Angew. Ent. 55: 356. —Eichorn, Pschorn-Walcher, and Schroeder, 1965. Anz. f. Schaedlingsk. 38: 107.

sulcatellus (Viereck), n. comb. Southern Sask., Wyo., s. Alta., w. Wash., n. Calif. Host:

Lorostege sp., *L. sticticalis* (L.).

Campoplex (*Campoplex*) *sulcatellus* Viereck, 1925; 1926. Canad. Ent. 57 (9): 225 (key); 58 (5): 130. ♀.

validus (Cresson). N. S. w. to s. B. C., s. to e. N. C., n.e. Kans., and n. N. Mex. Host:

Macrobotys theseusalis (Wlk.), *Nephoteryx uvinella* (Rag.), *Psorosina hammondi* (Riley), *Saucrobotys futilalis* (Led.), *Plathypena scabra* (F.), *Hyphantria cunea* (Drury), *H. textor* Harris, *Grapholitha molesta* (Bsk.), *Acleris minuta* (Rob.). With the exception of *Psorosina hammondi* and *Acleris minuta* (the hosts of type-specimens of synonyms cited below), I have listed only hosts from labels of specimens which I have identified as *validus*. Some of the host records reported in the literature pertain to misidentified specimens in the U. S. Natl. Museum collection.

Mesoleptus? validus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 258. ♂, ♀.

Mesoleptus montanus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 261. ♀. Preocc. by Gravenhorst, 1829.

Limneria excavata Provaneher, 1875. Nat. Canad. 7: 146. ♀.

Limneria teratis Weed, 1887. Ill. State Lab. Nat. Hist., Bul. 3: 40. ♀.

Limneria (*Sinophorus*) *canarsiae* Ashmead, 1898 (1897). Ent. Soc. Wash., Proc. 4: 126. ♀.

Limneria tristis (!) Dalla Torre, 1901. Cat. Hym., v. 3, p. 105. Lapsus for *L. teratis* Weed; also transferred to *Limnerium* as *triste* (!).

Amorphota angusta Viereck, 1906. Amer. Ent. Soc., Trans. 32: 180. ♀.

Campoplex (*Ecphora*) *canadensis* Viereck, 1925; 1926. Canad. Ent. 57 (8): 203 (key); 58 (11): 282. ♀.

Campoplex (*Campoplex*) *jurtus* Viereck, 1925; 1926. *Canad. Ent.* 57 (9): 226 (key); 58 (6): 147. ♀.

Campoplex (*Campoplex*) *militaris* Viereck, 1925; 1926. *Canad. Ent.* 57 (9): 226 (key); 58 (6): 147. ♀.

Biology: Timberlake, 1912. U. S. Dept. Agr., Bur. Ent., Tech. Ser. 19: 71-92. —Tothill, 1922. *Canad. Dept. Agr., Bul.* (n. s.) 3: 74-76. —Morris, 1964. *Canad. Ent.* 96: 364, 365, 366-367. —Morris, 1976. *Canad. Ent.* 108: 834, 835, 836.

Morphology: Cushman, 1926. *Ent. Soc. Wash., Proc.* 28: 43 (first instar larva).

xanthostomus (Gravenhorst). Eurasia; n. Africa. Reported as introduced in Orange Co., Calif. (apparently in 1948) without becoming established (see Clausen, 1956). No "voucher" specimens are present in the U. S. Natl. Museum collection; hence, I do not feel certain that the species released in Calif. was really *S. xanthostomus* or even a species of *Sinophorus*. The target species for the release of *xanthostomus* in Calif. was the native *Paramyelois transitella* (Wlk.).

Campoplex xanthostomus Gravenhorst 1829. *Ichn. Europaea*, v. 3, p. 460. ♂.

Campoplex deserticola Tosquinet, 1896. *Soc. Ent. de Belg., Mem.* 5: 412. ♂.

Taxonomy: Aubert, 1964. *Soc. Ent. de France, Bul.* 69: 159. —Townes, Momoi, and Townes, 1965. *Amer. Ent. Inst., Mem.* 5: 274 (lectotype selected). —Shaumar, 1966. *Entomophaga* 11: 458, 461 (syn.).

Biology: Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139: 23.

Genus SESIOPLEX Viereck

Campoplex subg. *Sesioplex* Viereck, 1912. U. S. Natl. Mus., *Proc.* 42: 644.

Type-species: *Campoplex* (*Sesioplex*) *depressus* Viereck. Monotypic and orig. desig.

Dr. Klaus Horstmann (personal commun., 1976) told me that he knew a European species which may be referable to *Sesioplex*, but *depressus* is the only species known to me. The name *Sesioplex* is here resurrected from synonymy because *depressus* has structural characteristics which make it a misfit in *Campoplex* or *Sinophorus*.

depressus (Viereck). Que. w. to Iowa, s. to n. Ga. and n.e. Kans. Host: *Gnorimoschema gallaesolidaginis* (Riley).

Campoplex (*Sesioplex*) *depressus* Viereck, 1912. U. S. Natl. Mus., *Proc.* 42: 644. ♀. The holotype is labeled as follows: "from F. M. Webster; Feb. 3, [18]87; Par[asite] on *Gelechia solidaginis*; iss[ued] March 25, [18]87." This is certainly the specimen which Riley and Howard (1890) identified as "*Limneria dimidiatus* Cr(esson)," from "LaFayette, Ind., March 25, 1887." Because Webster was never stationed in La., Viereck's statement that the type locality is "Louisiana" is erroneous.

Sesioplex relativus Viereck, 1925. *Canad. Ent.* 57 (7): 177 (key); 57 (12): 298. ♀.

Taxonomy: Riley and Howard, 1890. U. S. Dept. Agr., *Insect Life* 3: 157.

Biology: Miller, 1963. *Ohio Jour. Sci.* 63: 71.

Genus CAMPOPLEX Gravenhorst

Campoplex Gravenhorst, 1829. *Ichn. Europaea*, v. 3, p. 453.

Type-species: *Ichneumon difformis* Gmelin. Desig. by Westwood, 1840.

Dioratica Foerster, 1868. *Naturh. Ver. Rheinlande, Verh.* 25: 153.

Type-species: *Porizon borealis* Zetterstedt. Monotypically included and desig. by Townes, Momoi, and Townes, 1965.

Omorgus Foerster, 1868. *Naturh. Ver. Rheinlande, Verh.* 25: 153.

Type-species: *Limneria mutabilis* Holmgren. Desig. by Viereck, 1912 from 32 species included by Thomson, 1887. Horstmann (1969) suppressed *mutabilis* as a synonym of *difformis* (Gmelin).

Omorga Thomson, 1887. *Opusc. Ent.* 11: 1052, 1125. Emend.

Zatranosema Viereck, 1912. *Ent. News* 23: 45. Placed with a query as a synonym of *Campoplex* by Townes (1970). Proposed as a "new name" for *Tranosema* Foerster in the sense of Szepilgeti as opposed to the sense of Thomson (see *Tranosema*).

Type-species: *Tranosema bicolor* Szepligeti. Monotypic. Szepligeti (1911) applied the name *Tranosema* to three species, but two of them were placed in *Tranosema* with a query; therefore *Zatranosema* is monotypic.

Casiniaria subg. *Pseuderipternoides* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 269.

Type-species: *Mesoleptus porrectus* Cresson. Monotypic and orig. desig.

This very large genus has a worldwide distribution. The hosts are principally microlepidoptera which feed in concealment (such as in leaf rolls, cases, buds, etc.). As with most Campoplegini, some *Campoplex* species apparently kill their hosts while the latter are in the larval stage and spin a cocoon after emerging from the host, but in an undetermined proportion of *Campoplex* species the cocoon is spun inside the pupal shell of the host. The latter is also the case for some (but definitely not all) species of *Venturia*. Dr. Klaus Horstmann is preparing a revision of the western Palearctic species of *Campoplex*.

Taxonomy: Szepligeti, 1911. In Wytsman, Gen. Ins., fasc. 114, p. 30. —Horstmann, 1969 (1968). Opusc. Zool. 102: 1. —Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 151-152.

angularis Viereck. R. I., N. Y., N. J., Ont.

Campoplex (*Campoplex*) *angularis* Viereck, 1925; 1926. Canad. Ent. 57 (9): 226 (key); 58 (6): 148. ♂, ♀.

argenteus (Provancher). Que. w. to s. B. C., s. to n.w. S. C. Host: *Epiblema strenuatum* (Wlk.). *Limneria argentea* Provancher, 1874. Nat. Canad. 6: 147. ♀.

Campoplex (*Campoplex*) *ontario* Viereck, 1925; 1926. Canad. Ent. 57 (9): 226 (key); 58 (6): 148. ♀.

atridens Townes. N. Y., Pa., Ont., Ohio, Mich., Iowa, Colo., Mont., Idaho, Wash., Oreg. Host:

Ancylys comptana (Froel.), *Evora hemidesma* (Zell.), *Archips argyrospilus* (Wlk.).

Campoplex (*Campoplex*) *erythromera* Viereck, 1925 (Sept.); 1926. Canad. Ent. 57 (9): 226 (key); 58 (6): 146. ♂. Preocc. in *Campoplex* by Viereck, 1925 (July).

Campoplex atridens Townes, 1945. Amer. Ent. Soc., Mem. 11: 593. N. name for *C. (C.) erythromera* Viereck.

brachyurus Viereck. Que., N. H., Ont., Wis. Host: *Bucculatrix canadensisella* Chamb.

Zaporus minutus Ashmead, 1902. In Slosson, Ent. News 13: 321. Nomen nudum.

Nythobia minuta Cushman, 1922. U. S. Natl. Mus., Proc. 61 (8): 19. ♀. Preocc. in *Campoplex* by *Dusona minuta* (Holmgren), 1856; because of the homonymy, I had intended that *N. minuta* be newly suppressed here as a synonym of *brachyurus* even though I have seen only four specimens (including the two holotypes) and do not feel absolutely certain about the correctness of the synonymy. Because of a misunderstanding, the synonymy was published by Finlayson (1975).

Nemeritis brachyurus Viereck, 1925; 1926. Canad. Ent. 57 (7): 178 (key); 58 (7): 178. ♀. In the 1926 portion of Viereck's paper as "*Campoplex* (*Nemeritis*) *brachyurus*."

Taxonomy: Finlayson, 1975. Ent. Soc. Canada, Mem. 94: 16, 19-20, 91, 135 (final-instar larva). **cavus** Viereck. Ont.

Campoplex (*Campoplex*) *cavus* Viereck, 1925; 1926. Canad. Ent. 57 (9): 226 (key); 58 (6): 149. ♀.

conocola (Rohwer). Eastern Ont. w. to B. C., s. to n. Fla., Ark., and s. Calif. Ecology:

Parasitizes a variety of microlepidoptera which feed on Pinaceae, especially cone borers, but also species which feed in small branches or bark. Host: *Barbara colfaxiana taxifoliella* (Bsk.), *Laspeyresia fletcherana* Kft., *Petrova albicapitana* (Bsk.), *Rhyacionia zozana* (Kft.), *Dioryctria amatella* (Hulst), *D. clarioralis* (Wkl.), *D. zimmermanni* (Grt.), *Tetralopha robustella* Zell., *Synanthedon novaroensis* (Hy. Ed.).

Pyraconon conocola Rohwer, 1917. U. S. Natl. Mus., Proc. 53: 159. ♂, ♀.

crassatus (Viereck), revised status. Que. w. to s.e. Sask., s. to n.w. S. C. and Ohio. Host:

Exartema cornutum Heinr., *E. permundatum* Clem., *Proteoteras willingana* (Kft.).

Townes (1945) and Barron (1975) have incorrectly applied the name *hyalinus* (Provancher) to this species, contrary to the valid lectotype selection of Gahan and Rohwer (1918). See the discussion under *Synetaeris hyalina* (Provancher).

Neonortonia crassata Viereck, 1925. Canad. Ent. 57 (7): 179 (key); 57 (12); 301. ♂.

- Campoplex (Campoplex) moderatus* Viereck, 1925; 1926. *Canad. Ent.* 57 (9): 225 (key); 58 (6): 143. ♀. N. syn.
- Campoplex (Campoplex) deceptivus* Viereck, 1925; 1926. *Canad. Ent.* 57 (9): 226 (key); 58 (6): 146. ♀. N. syn.
- Taxonomy: Gahan and Rohwer, 1918. *Canad. Ent.* 50: 28. —Walley, 1933. *Canad. Ent.* 65: 254-255 (redescription of *moderatus*). —Townes, 1945. *Amer. Ent. Soc., Mem.* 11: 596-597. —Barron, 1975. *Nat. Canad.* 102: 484.
- dimidiatus* (Cresson). Ill.
- Mesoleptus? dimidiatus* Cresson, 1864. *Ent. Soc. Phila., Proc.* 3: 265. ♀. Preocc. in *Campoplex* by *Dusona dimidiata* (Brulle), 1846.
- ecoxalis* Walkley. N. H. Known only from the holotype which was collected on the top of Mt. Washington.
- Phaedroctonus coxalis* Ashmead, 1900. *In* Slosson, *Ent. News* 11: 319. *Nomen nudum.*
- Cynodusa coxalis* Cushman, 1922. U. S. Natl. Mus., *Proc.* 61 (8): 10. ♀. Preocc. in *Campoplex* by Spinola, 1851.
- Campoplex ecoxalis* Walkley, 1958. *In* Krombein *et al.*, U. S. Dept. Agr., *Agr. Monog.* 2, sup. 1, p. 59. N. name for *Cynodusa coxalis* Cushman.
- epinotiae* Viereck. Coastal Calif. Host: *Epinotia arctostaphylana* Kft. Known only from the holotype which is from Carmel, Calif.
- Campoplex epinotiae* Viereck, 1912. U. S. Natl. Mus., *Proc.* 43: 586. ♀.
- erythromerus* (Viereck). Ont.
- Nemeritis erythromerus* Viereck, 1925; 1926. *Canad. Ent.* 57 (7): 178 (key); 58 (7): 177. ♀.
- In the 1926 part of Viereck's paper as "*Campoplex (Nemeritis) erythromerus*."
- frustranae* Cushman. Southeastern Mass. w. to n. Ohio, s. Ill., and s.w. Nebr., s. to central Ga., central Miss., and n.w. Ark. Host: *Rhyacionia frustrana* (Comst.), *R. rigidana* (Fern). Introduced in Nebr. following the accidental introduction of *R. frustrana* in pine plantations.
- Campoplex frustranae* Cushman, 1927 (June 2). *Jour. Agr. Res.* 34 (7): 620 (key), 621 (fig.). ♀.
- Taxonomy: Cushman, 1927 (June 24). *Jour. Agr. Res.* 34 (8): 739 (more complete description including differences of male).
- Biology: Baumhofer, 1929. *Jour. Econ. Ent.* 22: 1001. —Cushman, 1932. *Ent. Soc. Wash., Proc.* 34: 28. —Dowden, 1962. U. S. Dept. Agr., *Agr. Handb.* 226: 37, 42, 51. —Eikenbary and Fox, 1968. *Ent. Soc. Amer., Ann.* 61: 1430-1433.
- fusiformis* (Provancher). N. B. s. to w. N. C., w. to s.w. Tex. Information at the American Entomological Institute, Ann Arbor, Mich. indicates that the synonymy below must be considered very tentative.
- Limneria fusiformis* Provancher, 1874. *Nat. Canad.* 6: 148. ♀.
- Amorphota ferruginosa* Viereck, 1906. *Amer. Ent. Soc., Trans.* 32: 220. ♀.
- Campoplex (Campoplex) grossulariflorae* Viereck, 1917 (1916). *Conn. State Geol. and Nat. Hist. Survey Bul.* 22: 263. ♀.
- Campoplex (Campoplex) maquinnai* Viereck, 1917 (1916). *Conn. State Geol. and Nat. Hist. Survey Bul.* 22: 263. ♀.
- Campoplex (Campoplex) pentagoetorum* Viereck, 1917 (1916). *Conn. State Geol. and Nat. Hist. Survey Bul.* 22: 263. ♂.
- Neonortonia scaposa* Viereck, 1925. *Canad. Ent.* 57 (7): 179 (key); 57 (12): 301. ♂.
- Pseuderipternoides deceptor* Viereck, 1925. *Canad. Ent.* 57 (7): 179 (key); 57 (12): 302. ♀.
- Pseuderipternoides neglectus* Viereck, 1925. *Canad. Ent.* 57 (7): 179 (key); 57 (12): 302. ♂.
- Pseuderipternoides pulchellus* Viereck, 1925. *Canad. Ent.* 57 (7): 179 (key); 57 (12): 303. ♀.
- Campoplex (Campoplex) hullensis* Viereck, 1925 (Sept); 1926. *Canad. Ent.* 57 (9): 225 (key); 58 (6): 144. ♀. Preocc. in *Campoplex* by Viereck, 1925 (July).
- Campoplex (Campoplex) signatus* Viereck, 1925; 1926. *Canad. Ent.* 57 (9): 226 (key); 58 (6): 144. ♂.
- haywardi* Blanchard. Bolivia, Uruguay, Argentina. Introduced in southern Calif. "after 1963" according to Leong and Oatman (1968), apparently without becoming established. Host:

Phthorimaea operculella (Zell.). The host cited was the target species for introductions in Calif.

Campoplex haywardi Blanchard, 1942. In Hayward, Tucuman Estac. Expt. Agr., Rev. Indus. y Agr. 33: 83. Nomen nudum.

Campoplex haywardi Blanchard, 1947 (1946). Acta Zool. Lilloana 3: 295. ♂, ♀.

Biology: Leong and Oatman, 1968. Ent. Soc. Amer., Ann. 61: 26: 36.

hexagonalis (Viereck). Southern Alta.

Pseuderipternoides hexagonalis Viereck, 1925. Canad. Ent. 57 (7): 179 (key); 57 (12): 302. ♀.

hullensis (Viereck). Que.

Neonortonia hullensis Viereck, 1925. Canad. Ent. 57 (7): 179 (key); 57 (12): 301. ♂.

infumatus (Provancher). Que.

Limneria infumata Provancher, 1874. Nat. Canad. 6: 148. ♀. The lectotype selected by Gahan and Rohwer (1918) is not conspecific with the lectotypes for the names suppressed as synonyms of *infumatus* by Townes (1945); see *parallelus* Viereck.

Taxonomy: Gahan and Rohwer, 1918. Canad. Ent. 50: 29. — Townes, 1945. Amer. Ent. Soc., Mem. 11: 597. — Barron, 1975. Nat. Canad. 102: 489 (confirmation of Gahan and Rohwer lectotype).

macer (Cresson). Colo.

Mesoleptus macer Cresson, 1865. Ent. Soc. Phila., Proc. 4: 262. ♀.

mellipes (Provancher). Que., Maine, Mass., Ont., Mich., Wis., S. Dak., Sask., n. Idaho, s. B. C.

Host: *Epinotia nanana* (Treit.), *Coleotechnites piceaella* (Kft.), *Eucordylea ducharme* Free., *Exoteleia dodecella* (L.), *Coleophora laricella* (Hbn.), *C. pruniella* Clem. I suspect that the name *mellipes* and the other names listed as synonyms thereof apply to one or more species which lose the second intercubitus in smaller specimens (i.e. those that develop on smaller hosts).

Limneria rufipes Provancher, 1874. Nat. Canad. 6: 149. ♀. Preocc. in *Campoplex* by Gravenhorst, 1829 and Holmgren, 1872.

Limneria mellipes Provancher, 1883. Petite Faune Ent. Canada, p. 831 (errata). N. name for *L. rufipes* Provancher. Barron (1975) and other authors have incorrectly concluded that this name was a lapsus and apparently were unaware of its proposal in the index of the Petite Faune.

Nemeritis melanomerus Viereck, 1925; 1926. Canad. Ent. 57 (7): 178 (key); 58 (7): 177. ♂. In the 1926 part of Viereck's paper as "*Campoplex (Nemeritis) melanomerus*."

Nemeritis decoratus Viereck, 1925; 1926. Canad. Ent. 57 (7): 179 (key); 58 (7): 180. ♀. In the 1926 part of Viereck's paper as "*Campoplex (Nemeritis) decoratus*."

Nemeritis laevis Viereck, 1925; 1926. Canad. Ent. 57 (7): 179 (key); 58 (7): 179. ♀. In the 1926 part of Viereck's paper as "*Campoplex (Nemeritis) laevis*."

Phaedroctonus piceae Cushman, 1935. Wash. Acad. Sci., Jour. 25: 260. ♂, ♀.

nigricinctus (Ashmead). N. J., D. C. Host: Small "tineid" on *Betula nigra*, *Ametastegia recens* (Say)?

Limneria nigricincta Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 431. ♂, ♀.

Taxonomy: Townes and Townes, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 361 (lectotype selected).

nigricoxa (Provancher). Que. Known only from the lectotype. Notes I made in studying the lectotype in 1974 indicate that it may be a composite specimen.

Limneria nigricoxa Provancher, 1882. Nat. Canad. 13: 364. ♀.

Limnerium nigricoxum Dalla Torre, 1901. Cat. Hym., v. 3, p. 99. Emend.

Taxonomy: Gahan and Rohwer, 1918. Canad. Ent. 50: 29 (lectotype selected). — Barron, 1975. Nat. Canad. 102: 516.

nolae (Ashmead). Que. s. to R. 1., w. to Sask., Colo., and s. Calif. Host: *Trichotaphe* sp., *Nola* sp. on *Salix*, *Cnephasia longana* (Haw.).

Limneria nolae Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 431. ♂, ♀.

Campoplex (Hyposoter) fuscitarsatus Viereck, 1925; 1926. Canad. Ent. 57 (8): 203 (key); 58 (8): 199. ♀.

Campoplex (Campoplex) aylmerensis Viereck, 1925; 1926. *Canad. Ent.* 57 (9): 226 (key); 58 (6): 148. ♀.

parallelus Viereck, revised status. Que., Mass., R. I., N. Y., Md., Ont., Mich., n.e. Kans. Host: *Archips rosanus* (L.), *Ancylis comptana* (Froel.), *Grapholitha molesta* (Bsk.), *Holcocera modestella* Clem., *Depressaria cinereocostella* Clem. The name *parallelus* and the two synonyms listed below were incorrectly suppressed as synonyms of *infumatus* (Provancher) by Townes (1945).

Campoplex (Hyposoter) parallelus Viereck, 1925; 1926. *Canad. Ent.* 57 (8): 204 (key); 58 (9): 219. ♀.

Campoplex (Campoplex) algonquinorum Viereck, 1925; 1926. *Canad. Ent.* 57 (9): 226 (key); 58 (6): 145. ♀. N. syn.

Campoplex (Campoplex) grimsbyensis Viereck, 1925; 1926. *Canad. Ent.* 57 (9): 226 (key); 58 (6): 145. ♀. N. syn.

Taxonomy: Townes, 1945. *Amer. Ent. Soc., Mem.* 11: 597.

phthorimaeae (Cushman). Va.?, w. Calif. Host: *Keiferia inconspicua* (Murtf.)?, *K. lycopersicella* (Wlsm.), *Phthorimaea operculella* (Zell.), *Heliothis zea* (Bod.). I have not seen specimens from places other than Calif. which I could definitely identify as *phthorimaeae*, but would suppose that the range of the species is not restricted to Calif. The species was described from six males and four females; the male allotype and four of the other male paratypes are of the genus *Diadegma*, apparently an undescribed species. In the U. S. Natl. Museum collection I presently find only eight specimens of *C. phthorimaeae* reared from *P. operculella* by J. E. Graf, but there are 40 specimens of the *Diadegma* sp. which Graf reared from that host. Therefore, it seems likely that the discussion of Graf (1917) pertains more to the *Diadegma* sp. than to *C. phthorimaeae*. Whether the University of Calif. (Riverside) shipped both species to Hawaii (see Weber, 1951) and other parts of the World remains to be seen. Chittendon (1922) reported *phthorimaeae* as having been reared from *Udea rubigalis* (Gn.), but that record pertains to yet another apparently undescribed species of *Diadegma*. See also *Diadegma compressum* (Cresson).

Omorgus phthorimaeae Cushman, 1915. *Ent. Soc. Wash., Proc.* 17: 138. ♂, ♀.

Biology: Graf, 1917. U. S. Dept. Agr., *Bul.* 427: 38-39. —Chittendon, 1922. *Canad. Ent.* 54: 174 (misidentified *Diadegma* sp.). —Weber, 1951. *Hawaii. Ent. Soc., Proc.* 14: 327.

polychrosidis Viereck. N. Y. s. to w. N. C., w. to Mich. and Ind. Host: *Platyptilia carduidactyla* (Riley), *Paralobesia carduana* (Bsk.).

Campoplex polychrosidis Viereck, 1912. U. S. Natl. Mus., *Proc.* 43: 586. ♀.

porrectus (Cresson). Que. w. to Sask., s. to e. N. C., n.w. S. C., and s.w. Kans.

Mesoleptus porrectus Cresson, 1864. *Ent. Soc. Phila., Proc.* 3: 266. ♀.

Mesoleptus subtenuis Cresson, 1864. *Ent. Soc. Phila., Proc.* 3: 267. ♂.

Limneria ruficoxa Provancher, 1875. *Nat. Canad.* 7: 146. ♀.

Limnerium ruficoxum Dalla Torre, 1901. *Cat. Hym.*, v. 3, p. 103. Emend.

Olesicampa melanerythrogaster Viereck, 1905. *Kans. Acad. Sci., Trans.* 19: 306. ♂, ♀.

pyraustae Smith. Europe. Introduced between 1927 and 1933 in Mass., R. I., Conn., N. Y., and Ohio without becoming established. Host: *Ostrinia nubilalis* (Hbn.). The host cited was the target species for introductions in the United States.

Campoplex pyraustae Smith, 1931. Portici R. Scuola Super. di Agr., *Lab. Zool. Gen. e Agr.*, *Bol.* 25: 257. ♂, ♀. The holotype is now deposited in the U. S. Natl. Museum.

Taxonomy: Baker, Bradley, and Clark, 1949. U. S. Dept. Agr., *Tech. Bul.* 983: 144-147.

relativus (Viereck). Southwestern Kans.

Amorphota relativa Viereck, 1905. *Kans. Acad. Sci., Trans.* 19: 307. ♀.

tecumseh Viereck. Mass., Pa., Ont., Alta., Alaska. Host: *Holcocera modestella* Clem., *Scrobipalpa atriplicella* (Rosler).

Campoplex (Campoplex) tecumseh Viereck, 1925; 1926. *Canad. Ent.* 57 (9): 225 (key); 58 (5): 130. ♂.

tineavora (Rohwer). Southwestern Oreg. Host: *Tinea defectella* Zell.

Angitia tineavora Rohwer, 1917. U. S. Natl. Mus., *Proc.* 53: 160. ♂, ♀.

- torticidus* (Cushman). N. H. w. to interior Alaska, s. to n.w. S. C., Colo., and n. Calif. Host: *Grapholitha molesta* (Bsk.), *Paralobesia viteana* (Clem.), *Acleris variana* (Fern.).
Omorgus tortricidus Cushman, 1915. Ent. Soc. Wash., Proc. 17: 137. ♂, ♀.
- triannulatus* (Cameron). Western Calif.
Eriborus? triannulatus Cameron, 1908. Amer. Ent. Soc., Trans. 34: 245. ♂.
- Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 106 (generic placement).
- ultimus* Viereck. Southwestern B. C., Wash., w. Oreg., n.w. Calif. Ecology: In the Canadian National Collection there is a female specimen from Vancouver, B. C. which was reared from an unknown host in *Polystictus versicolor*.
Campoplex (Campoplex) ultimus Viereck, 1925; 1926. Canad. Ent. 57 (9): 226 (key); 58 (6): 147. ♀. Viereck cited Ottawa, Ont. as the type locality, but Mr. G. S. Walley has labeled the lectotype as probably collected by Rev. G. W. Taylor in B. C.
- uniformis* (Viereck). Southwestern Alta.
Nemeritis uniformis Viereck, 1925; 1926. Canad. Ent. 57 (7): 178 (key); 58 (7): 177. ♂. In the 1926 part of Viereck's paper as "*Campoplex (Nemeritis) uniformis*."
- valens* (Cresson). Colo.
Mesoleptus valens Cresson, 1865. Ent. Soc. Phila., Proc. 4: 261. ♀.
Casinaria compacta Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 362. ♀.

Genus PORIZON Fallen

Porizon Fallen, 1813. Spec. Nov. Hym. Disp. Meth., p. 18.

Type-species: *Ichneumon moderator* Linnaeus. Monotypic. Included as "*Ophion moderator* Fabr[icius]" by Fallen, but cannot be treated as the Fabrician identification of *I. moderator* Linnaeus because the description given by Fabricius (1804 [where he placed *moderator* in *Ophion*]) does not add anything to the Linnaean description and alters it only insignificantly by omitting the phrase "ore tentaculato." Moreover, Fabricius did not indicate that he had acquired or had seen specimens of *moderator* (see further discussion below).

Phaedroctonus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 153. N. syn.

Type-species: *Phaedroctonus minutus* Ashmead. By subsequent monotypy from inclusion by Ashmead, 1902.

For many years the name *Porizon* was applied to various Tersilochinae, especially to an assemblage of species (now placed in the genus *Barycnemis*) which did not include *Porizon moderator* in the sense of Fallen or of subsequent authors (*moderator* auct. being placed in *Tersilochus*). Accordingly, Viereck (1914) proposed the name *Porizonidea* to apply to *Porizon* of authors and suppressed *Tersilochus* as a synonym of *Porizon*. Roman (1932) discovered that *I. moderator* Linnaeus is a species of *Campopleginae*, but made no adjustment in the application of the name *Porizon*. Townes (1945) applied the name *Tersilochini* to "*Porizonini*" of authors (cf. Hincks, 1945), but the name *Porizon* continued to be used sporadically for various *Tersilochinae*, particularly before Townes and Townes (1951) applied the name "*Porizonini*" to the *Campoplegini*. Townes (1965) applied the name *Porizon* to *Campoplex paniscus* Gravenhorst, which he distinguished from "*moderator* Linnaeus." Horstmann (1970) discovered that Roman (1932) and Townes (1965) had not correctly identified the *moderator* type specimen, and had incorrectly suppressed *Nemeritis cremastoides* Holmgren as a synonym of *moderator*. Horstmann indicated *moderator* to be a species of *Venturia*; he erected the genus *Leptocampoplex* (which see) for *cremastoides* (i.e. *Porizon* sensu Townes [1965, 1970], in part), and placed *paniscus*, with uncertainty, as a synonym of *Macrus filiventris* Gravenhorst (see *Macrus*). As a consequence of the findings of Horstmann (1970), Townes (1971) indicated that *Venturia* should be suppressed as a synonym of *Porizon*.

In 1972 I borrowed a specimen of *Porizon moderator* from Dr. Horstmann and learned that the Nearctic *Phaedroctonus temporalis* Cushman is a junior synonym of *moderator*. In my opinion, *Porizon* is recognizable as a genus distinct from either *Venturia* or *Campoplex*, the separation from *Campoplex* being more subjective, as is suggested by Townes (1945) placement of the species here included in *Porizon* and by the fact that Townes (1970) continued to treat *Phaedroctonus* as a synonym of *Campoplex*.

There had never been much doubt that Fallen had intended the name *Porizon* to apply to

what we now call Tersilochinae (cf. Hincks, 1945), and Horstmann (1970, 1971) studied a specimen of *Probes rufipes* (Holmgren) which had been identified as *Porizon moderator* by Falen. For that reason, Horstmann (1970) suggested that an application for the suppression of the names *Porizon* and *Porizontinae* should be made to the International Commission on Zoological Nomenclature, and Fitton and Gauld (1976) suggested that the case needed to be referred to the Commission. If the facts revealed by Horstmann (1970) had been established soon after Roman (1932) published on the identity of *Ichneumon moderator*, it might then have been logical to seek a ruling that would have made *Tersilochus rufipes* Holmgren the type-species of *Porizon*. Acceptance of *I. moderator* Linnaeus as the type-species of *Porizon* would leave us with a zoological rather than nomenclatural problem, and would eliminate any need for making an application to the Commission. I believe that the option of regarding the nomenclatural problem as settled and striving to solve the zoological one is the option which would be most uniformly accepted. I believe that Dr. Horstmann concurs with me on this, and I am hopeful that Drs. Fitton and Gauld will also.

Porizon is a small genus of Holarctic and Neotropical (southern Mexico) distribution. Most of the species are parasitic on microleptidoptera which feed on coniferous trees, especially cone moths and needle miners. *P. transfuga* (Gravenhorst), which is placed in *Porizon* only provisionally, parasitizes *Gracilaria syringella* (F.), the lilac leaf miner, and two specimens of *cupressi* (Ashmead), which has otherwise been reared only from conifer-feeding hosts, were reared from a leaf tier on *Rhamnus purshianus*.

Taxonomy: Fabricius, 1804. *Systema Piezatorum*, p. 137. — Viereck, 1914. U. S. Natl. Mus., Bul. 83: 122, 144, 145. — Roman, 1932. Ent. Tidskr. 53: 9. — Townes, 1945. Amer. Ent. Soc., Mem. 11: 592, 593, 597, 598, 602, 73. — Hincks, 1945. Entomologist 78: 90 (including opinions of J. F. Perkins). — Townes and Townes, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 357-358. — Townes, 1965. Polskie Pismo Ent. 35: 410. — Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 151, 167-168, 278. — Horstmann, 1970. Bayer. Ent., Nachrichtenbl. 19: 77-79. — Townes, 1971. Amer. Ent. Inst., Mem. 17: 241. — Fitton and Gauld, 1976. Systematic Ent. 1: 248-249.

argyresthiae (Rohwer), n. comb. Southwestern Oreg. Host: *Argyresthia libocedrella* Bsk.

Known from a long series of specimens reared at Ashland, Oreg. in 1914.

Phaedroctonus argyresthiae Rohwer, 1917. U. S. Natl. Mus., Proc. 53: 162. ♂, ♀.

cupressi (Ashmead), n. comb. Que., Maine, N. H., s.w. Va., w. N. C., w. Iowa, s.w. Alaska, w. Wash., n. Calif. Host: *Periploca nigra* Hodges, *Epinotia nanana* (Treit.), *Argyresthia cupressella* Wlsm., *A. thuiella* Pack., needle miner on *Abies concolor*, leaf tier on *Rhamnus purshianus*.

Limneria cupressi Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 437. ♀.

Phaedroctonus minutus Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 235. ♀.

Phaedroctonus epinotiae Cushman, 1935. Wash. Acad. Sci., Jour. 25: 559. ♂, ♀. Formerly preocc. in *Campoplex* by Viereck, 1912. N. syn.

Campoplex nanana Townes, 1945. Amer. Ent. Soc., Mem. 11: 598. N. name for *P. epinotiae* Cushman. N. syn.

laspeyresiae (Rohwer), n. comb. Colo., N. Mex., w. Mont., n. Idaho, s.e. Wash., s.w. Oreg., n.e. Calif. Host: *Laspeyresia piperana* (Kft.), *L. toreuta* (Grt.).

Melebornus(!) *laspeyresiae* Rohwer, 1917. U. S. Natl. Mus., Proc. 53: 161. ♀.

milleri (Rohwer), n. comb. Southwestern Oreg. Host: *Dioryctria abietella* (D. and S.). Known only from the holotype which is a rather poor specimen from Ashland, Oreg. This species is placed in *Porizon* only tentatively; the petiole is similar to that of *Nemeritis* spp., and the second intercubitus is present, although abnormally positioned in one of the fore wings of the holotype.

Angitia milleri Rohwer, 1917. U. S. Natl. Mus., Proc. 53: 159. ♀.

moderator (Linnaeus). Vt., N. Y., Ont., N. Mex., w. Mont., Idaho, s.-coastal Alaska; Europe.

Host: *Laspeyresia youngana* (Kft.). A 1972 letter I received from Dr. Klaus Horstmann says that males are apparently uncommon in Europe.

Ichneumon moderator Linnaeus, 1758. Syst. Nat., ed 10, v. 1, p. 564. ♀.

Campoplex flaviventris Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 98. ♀.

Limneria (*Phaedroctonus*) *ensifera* Brischke, 1880. Naturf. Gesell. Danzig, Schr. 4: 172. ♀.

Phaedroctonus temporalis Cushman, 1935. Wash. Acad. Sci., Jour. 25: 560. N. syn.

Taxonomy: Roman, 1932. Ent. Tidskr. 53: 9 (misdet.). — Horstmann, 1970. Bayer. Ent. Nachrichtenbl. 19: 78-79. — Horstmann, 1973. Deut. Ent. Gesell., Mitt. 32: 9, 11.

transfuga (Gravenhorst), n. comb. Newfoundland (insular), N. B., Que., Ont.; Eurasia.

Adventive. Host: *Gracilaria syringella* (F.). Not previously recorded from North America; the North American distribution given here is based upon specimens I have seen in the Canadian Natl. Collection and that of the U. S. Natl. Museum. I do not know that the species has been reared in North America, but it presumably was introduced in parasitized hosts on lilac (*Syringa vulgaris*). The species is placed in *Porizon* only provisionally; if related species exist, it should probably be placed with them in a separate genus.

Campoplex transfuga Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 521. ♂, ♀.

Phaedroctonus transfugus Schmiedeknecht, 1909. Opusc. Ichn., v. 4, p. 1640. Emend.

Phaedroctonus syringellae Hedwig, 1944. Ztschr. f. Ent. [Breslau] 19 (3): 4. sex ?

Taxonomy: Horstmann, 1973. Deut. Ent. Gesell., Mitt. 32: 9, 11.

Genus VENTURIA Schrottky

Idechthis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 154. Preocc. by Huebner, 1821.

Type-species: *Idechthis oahuensis* Ashmead. By subsequent monotypy from inclusion by Ashmead, 1901.

Venturia Schrottky, 1902. Buenos Aires, Mus. Nac. de Hist. Nat., An. 8: 102.

Type-species: *Venturia argentina* Schrottky. Orig. desig.

Devorgilla Cameron, 1907. Tijdschr. v. Ent. 50: 51.

Type-species: *Devorgilla dilatata* Cameron. Monotypic.

Balcarcia Brethes, 1922. Soc. Cient. Argentina, An. 93: 133.

Type-species: *Balcarcia bergi* Brethes. Monotypic.

Notamorphota Blanchard, 1947 (1946). Acta Zool. Lilloana 3: 292. It is apparent that three of the figures in this paper are mislabeled. The figure labeled as being that of *Notamorphota timocraticae* (fig. 2, p. 293) is actually that of *Sagaritis grioti* Blanchard. The figure labeled as being that of *Hyposoter denieri* Blanchard (fig. 5, p. 301) is the one which should have been labeled *N. timocraticae*, and the figure labeled as being that of *S. grioti* (fig. 6, p. 304) is the one which should have been labeled *H. denieri*.

Type-species: *Notamorphota timocraticae* Blanchard. Monotypic and orig. desig.

Exidechthis walkley, 1958. In Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2, sup. 1, p. 59. N. name for *Idechthis* Foerster.

This rather large genus has a worldwide distribution, but the number of species occurring in temperate areas appears to be fewer than that occurring in tropical and subtropical areas. See biological discussion under *Campoplex*.

Revision: Horstmann, 1973. Deut. Ent. Gesell., Mitt. 32: 7-12 (European spp.).

Taxonomy: Townes and Townes, 1966. Amer. Ent. Inst., Mem. 8: 143 (syn.).

canescens (Gravenhorst). Southern Canada, s.e. Alaska, and continental U. S. A.; temperate and tropic areas around the world. Ecology: Most often found in buildings where grains or flour are stored. In the U. S. Natl. Museum collection there are two specimens reared from bumble bee nests, one from Anderson, S. C. and the other from Boulder Co., Colo. (the latter labeled "ex *Ephestia* sp."). Adventive. Host: *Anagasta kuehniella* (Zell.), *Plodia interpunctella* (Hbn.). The hosts listed are the ones most commonly parasitized in North America; for additional hosts and their significance see the very excellent paper by Salt (1976). Males are unknown in North America, occasional in northern Europe, but apparently more common in the Mediterranean Basin. The biology of this species has perhaps been studied more intensively than that of any other ichneumonid. The biological references cited below are the more important ones known to me, and I have no doubt overlooked some important papers, particularly those published more recently.

Campoplex canescens Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 555. ♀. Name of questionable validity because preocc. in *Campoplex* by *Ichneumon canescens* Gmelin, 1791 on p. 549 (in synonymy) of Gravenhorst's same volume.

- Cryptus ductilis* Say, 1836. Boston Jour. Nat. Hist. 1: 233. ♀.
Campoplex frumentarius Rondani, 1877. Soc. Ent. Ital., Bul. 9: 169. Sex not indicated?
Nemeritis gracilis Tosquinet, 1896. Soc. Ent. de Belg., Mem. 5: 414. ♀.
Omorga columbiana Ashmead, 1899. In Johnson, U. S. Dept. Agr., Div. Ent., Bul. 20: 67.
 Nomen nudum.
Idecthis oahuensis Ashmead, 1901. Fauna Hawaiiensis, v. 1, p. 355. ♀.
Lathrostizus insularis Ashmead, 1901. Fauna Hawaiiensis, v. 1, p. 355. ♀.
Idecthis ephestiae Ashmead, 1903. In Fletcher, Ent. Soc. Ontario, Ann. Rpt. 33: 86.
 Nomen nudum.
Limnerium garrulum Cameron, 1905. Albany Mus., Rec. 1: 315. ♀.
Amorphota ephestia Froggatt, 1912 (Apr.). Agr. Gaz. N. S. Wales 23: 209. ♂, ♀.
Amorphota ephestiae Cameron, 1912 (Aug.). Linn. Soc. N. S. Wales, Proc. 37 (1): 187. ♀.
Mesochorus australicus Girault, 1925. Queensland Agr. Jour. 24: 541. ♀.
Limnerium christianae Cheesman, 1928. Ann. and Mag. Nat. Hist. (10) 1: 191. ♀.
Angitia pyraustae Uchida, 1930. Insecta Matsumurana 4: 129. ♀.
Angitia compressa Hedwig, 1962. Naturw.-Mus. Aschaffenburg, Nachr. 68: 94. ♀.
- Taxonomy:** Cushman and Gahan, 1921. Ent. Soc. Wash., Proc. 23: 161. —Townes, Townes, and Gupta, 1961. Amer. Ent. Inst., Mem. 1: 222 (syn.). —Townes, Momoi, and Townes, 1965. Amer. Ent. Inst., Mem. 5: 277 (syn.). —Horstmann, 1973. Beitr. z. Ent. 23: 131 (syn.). —Horstmann, 1973. Deut. Ent. Gesell., Mitt. 32: 9, 11. —Townes and Townes, 1973. Amer. Ent. Inst., Mem. 19: 149 (syn.).
- Biology:** Candura, 1928. Portici R. Scuola Super. di Agr., Lab. Zool. Gen. e Agr., Bol. 21: 149-212. —Diamond, 1929. Ent. Soc. Ont., Ann. Rpt. 60: 84-89. —Thorpe, 1938; 1939. Roy. Ent. Soc. London, Proc., Ser. A: Gen. Ent. 13: 58-59; 14: 47. —Narayanan, 1939. Nature [London] 144: 207. —Salt, 1941. Cambridge Phil. Soc., Biol. Rev. 16: 259-260. —Simmonds, 1943. Rev. Canad. de Biol. 2: 15-58. —Williams, 1951. Roy. Ent. Soc. London, Proc., Ser. A: Gen. Ent. 25: 49-58. —Fisher, 1961. Jour. Expt. Biol. 38: 267-275, 605-628. —Fisher, 1962. Ecology 43: 314-316. —Takahashi, 1962. Jap. Jour. Appl. Ent. and Zool. 6: 160. —Salt, 1964. Roy. Ent. Soc. London, Trans. 161: 1-14. —Salt, 1965. Roy. Soc. London, Proc., Ser. B: Biol. Sci. 162: 303-318. —Corbet, 1968. Jour. Expt. Biol. 48: 291-304. —Corbet, 1971. Nature [London] 232: 481-484. —Rogers, 1972. Ent. Expt. et Appl. 15: 190-194. —Rotherham, 1973. Roy. Soc. London, Proc., Ser. B: Biol. Sci. 183: 337-350. —Amos and Salt, 1974. Jour. Ent. (B) 43: 11-18. —Ganesalingam, 1974. Ent. Expt. et Appl. 17: 36-44. —Salt, 1975. Roy. Ent. Soc. London, Trans. 127: 141-161. —Corbet and Rotherham, 1975. Roy. Ent. Soc. London, Proc., Ser. A: Gen. Ent. 40: 67-72. —Salt, 1976. Ecological Ent. 1: 63-67.
- erythropus** (Ashmead), n. comb. Tex.
Limneria erythropus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 431. ♂.
Limnerium erythropum Dalla Torre, 1901. Cat. Hym., v. 3, p. 95. Emend.
- gelechiæ** (Ashmead), n. comb. N. Y., N. J., Mo., Ark., Kans., s.w. Tex. Host: *Fascista cercerisella* (Chamb.).
Limneria gelechiæ Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 432. ♀.
- nigricoxalis** (Cushman), n. comb. N. Y., Mich., and Ind., s. to s. Ga., and Ark. Host: *Synanthedon exzitiosa* (Say), *S. pictipes* (G. and R.), *Grapholitha molesta* (Bsk.), *Euzophora ostricorella* Hulst, *E. semifuneralis* (Wlk.).
Idecthis nigricoxalis Cushman, 1915. U. S. Natl. Mus., Proc. 48: 512. ♂, ♀.
- nigriscapus** (Viereck). Ont., Mich., and Ill., s. to e. N. C., n.w. S. C., and Ark. Host: *Plathypena scabra* (F.). This species is one of a group that is otherwise Neotropical and which is rather distinct from the group of species which includes *argentina* Schrottky and *canescens* (Gravenhorst).
Idecthis nigriscapus Viereck, 1921. Psyche 28: 77. ♀.
Idecthis mimicus Viereck, 1926. Roy. Soc. Canada, Proc. and Trans. (3) 20 (5): 185. ♂.
- sokanakiakorum** (Viereck). Eastern Que., R. I., Conn., N. Y., N. J., Pa., Ky., Tenn.; Guatemala? In the U. S. Natl. Mus. collection there is a single male bearing the data "Guatemala: Amatitlan; VIII-6-1965; P. J. Spangler," which appears in every respect to be *sokanakiakorum*.
Casnarina (*Idecthis*) *sokanakiakorum* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 270. ♂.

Genus CASINARIA Holmgren

Casinaria Holmgren, 1859 (1858). Svenska Vetensk.-Akad., Ofvers. af ... Forhandl. 15: 325.

Type-species: *Campoplex tenuiventris* Gravenhorst. Monotypic and orig. desig.

Amorphota Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 15: 151.

Type-species: *Amorphota orgyiae* Howard. By subsequent monotypy from inclusion by Howard, 1897.

Campotrepheus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 152.

Type-species: *Campoplex tenuiventris* Gravenhorst. Monotypically included and desig. by Viereck, 1914.

Horogenes Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 152. This name was incorrectly applied to what is now called *Diadegma* from about 1925 into the 1960's (most uniformly after 1945).

Type-species: *Campoplex tenuiventris* Gravenhorst. By subsequent monotypy from inclusion by Brischke, 1880.

Anempheres Foerster. 1868. Naturh. Ver. Rheinlande, Verh. 25: 154.

Type-species: *Anempheres diaphaniae* Viereck. By subsequent monotypy from inclusion by Viereck, 1911.

Nothanomalon Szepligeti, 1915. In Wytsman, Gen. Ins., fasc. 34, p. 39.

Type-species: *Nothanomalon novoguineensis* Szepligeti. Monotypic.

Trophocampa Schmiedeknecht, 1907. Hym. Mitteleuropas, p. 598.

Type-species: *Campoplex mesozostus* Gravenhorst. Monotypic and orig. desig.

Fiebrigia Viereck, 1912. U. S. Natl. Mus., Proc. 42: 638.

Type-species: *Campoplex texanus* Ashmead. Monotypic and orig. desig.

Neonortonia Viereck, 1912. U. S. Natl. Mus., Proc. 43: 592.

Type-species: *Campoplex genuinus* Norton. Monotypic and orig. desig.

Zastenomorpha Viereck, 1921. Psyche 28: 81.

Type-species: *Zastenomorpha lamina* Viereck. Monotypic.

Zastenogastra Viereck, 1925. Roy. Soc. Canada, Proc. and Trans. (3) 19 (5): 259.

Type-species: *Zastenogastra graciliventris* Viereck. Monotypically included and desig. by Viereck, 1926.

Nothanomaloidea Uchida, 1928. Hokkaido Imp. Univ., Faculty Agr., Jour. 21: 273. Preocc. by Viereck, 1925.

Type-species: *Nothanomaloidea matsuyamensis* Uchida. Monotypic and orig. desig.

Deltopis Seyrig, 1935. Paris, Mus. d'Hist. Nat., Mem. (n. s.) 4: 84.

Type-species: *Deltopis granulicoxis* Seyrig. Monotypic and orig. desig.

Longicharops Uchida, 1940. Insecta Matsumurana 14: 131. N. name for *Nothanomaloidea* Uchida.

Neonortoniella Blanchard, 1947. Montevideo, Mus. Hist. Nat., Comun. Zool. 2: 4.

Type-species: *Neonortoniella plusiae* Blanchard. Monotypic and orig. desig.

Casinariodes Aubert, 1960. Soc. Ent. de Mulhouse, Bul. 16: 661.

Type-species: *Casinaria monticola* Thomson. Monotypic and orig. desig.

This large genus occurs in all zoogeographic regions. The hosts are various kinds of lepidopterous larvae, mostly those of macrolepidoptera which do not conceal themselves when feeding.

Revision: Walley, 1947. Sci. Agr. 27: 364-395.

affinisima Carlson, n. name. Que. w. to s. Alta., s. to e. S. C. and Colo.

Casinaria affinis Walley, 1947. Sci. Agr. 27: 394. ♂, ♀. Preocc. by Tschek, 1871.

Taxonomy: Finlayson, 1975. Ent. Soc. Canada, Mem. 94: 27, 96, 135 (final-instar larva).

ambigua (Townes). Tex. Known only from the holotype.

Nematopodius texanus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 414. ♂. Preocc. in *Casinaria* by *Campoplex texanus* Ashmead, 1890 (p. 427) and by *Dusona texana* (Ashmead), 1890 (p. 427).

Charops ambigua Townes, 1945. Amer. Ent. Soc., Mem. 11: 607. N. name for *N. texanus* Ashmead.

canadensis Walley. Que., N. Y., Md., Ont., n. Mich.

Casinaria canadensis Walley, 1947. Sci. Agr. 27: 390. ♂, ♀.

Taxonomy: Finlayson, 1975. Ent. Soc. Canada, Mem. 94: 26, 27-28, 96, 135 (final-instar larva).

cavigena Walley. Southern B. C., s.w. Calif. Host: Geometrid.

Casinarina cavigena Walley, 1947. Sci. Agr. 27: 379. ♀.

Taxonomy: Finlayson, 1975. Ent. Soc. Canada, Mem. 94: 26, 28, 97, 135 (final-instar larva, new distribution).

claviventris Holmgren. Ont., s. Sask.; Europe.

Casinarina claviventris Holmgren, 1860 (1858). Svenska Vetensk.-Akad. Handl. 2 (8): 49. ♂, ♀.

Casinarina pinguis Walley, 1947. Sci. Agr. 27: 386. ♂, ♀.

Taxonomy: Townes and Townes, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 364 (syn.).

coloradensis Walley. Colo. Known from two specimens collected at Four-mile Hill, 8 mi. south of Steamboat Springs, Colo. on July 21, 1896, apparently by C. F. Baker.

Casinarina coloradensis Walley, 1947. Sci. Agr. 27: 371. ♀.

corrupta Walley. Southern Tex.

Casinarina corrupta Walley, 1947. Sci. Agr. 27: 385. ♂, ♀.

eupitheciae Viereck. Que. w. to s. B. C., s. to n.w. S. C., s. Wis., and w. Wash.; Ecuador? Host: *Eupithecia gibsonata* Tay., *E. helveticaria* Bdv., *E. luteata* Pack., *E. miserulata* Grt., *E. palpata* Pack.

Casinarina eupitheciae Viereck, 1912. U. S. Natl. Mus., Proc. 43: 586. ♂, ♀.

Campoplex (Hypotherethes) impetitus Viereck, 1925; 1926. Canad. Ent. 57 (8): 204 (key); 58 (9): 223. ♀.

Taxonomy: Finlayson, 1975. Ent. Soc. Canada, Mem. 94: 15, 26, 32, 100, 135 (final-instar larva).

forcipata Walley. N. B. w. to s. Alta., s. to Md., s. Ohio, s. w. Tex., s.e. N. Mex., Ariz., and s. Calif. Host: *Itame pustularia* (Gn.), *Semiothisa "granitata"* auct., *S. oweni* Swett, *S. sexmaculata* (Pack.), *Malacosoma distria* Hbn.

Casinarina forcipata Walley, 1947. Sci. Agr. 27: 393. ♂, ♀.

genuina (Norton). N. S. w. to s. B. C., s. to Del., Ill., Tex., N. Mex., and s. Wash. Host:

Apantesis virgo (L.), *Estigmene acrea* (Drury), *Hyphantria cunea* (Drury), *Acronicta obliqua* (J. E. S.).

Campoplex genuinus Norton, 1863. Ent. Soc. Phila., Proc. 1: 367. ♂, ♀.

Mesoleptus major Cresson, 1864. Ent. Soc. Phila., Proc. 3: 257. ♂.

Campoplex niger Provancher, 1879. Nat. Canad. 11 (no. 127): 148. ♀. Preocc. by Brulle, 1846 and Provancher, 1874.

Anephares(!) rufipes Hancock, 1911. Nature Sketches in Temperate America, p. 177. ♀.

geometrae *geometrae* Walley. N. S., Que., N. Y., N. J., Md., W. Va., w. N. C., Ont. Host:

Caripeta angustiorata Wlk., *C. divisata* Wlk., *Eufidonia notataria* Wlk., *Paraphia piniata* Pack., *Protoboarmia porcelaria* (Gn.), *Semiothisa "granitata"* auct.

Casinarina geometrae geometrae Walley, 1947. Sci. Agr. 27: 380. ♂, ♀.

Taxonomy: Finlayson, 1975. Ent. Soc. Canada, Mem. 94: 27, 30-31, 99, 135 (final-instar larva).

geometrae occidentalis Walley. Southern B. C. s. to s.w. Calif. Host: *Caripeta* sp., *Enypia venata* (Grt.), *Melanolophia imitata* (Wlk.), *Sabulodes caberata* Gn., *Semiothisa "granitata"* auct.

Casinarina geometrae occidentalis Walley, 1947. Sci. Agr. 27: 382. ♂, ♀.

Taxonomy: Finlayson, 1975. Ent. Soc. Canada, Mem. 94: 27, 31, 99, 135 (final-instar larva).

grandis Walley. Fla., s. La., Tex. Host: *Sibine stimulea* (Clem.).

Campoplex texanus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 427. ♀. Preocc. in *Casinarina* by *Dusona texana* (Ashmead), 1890 (p. 427).

Casinarina grandis Walley, 1947. Sci. Agr. 27: 376. N. name for *Campoplex texanus* Ashmead.

infesta (Cresson). R. I. w. to s. Mich. and Iowa, s. to s. Fla. and Tex.; Mexico, Costa Rica,

Argentina; Hawaii. Host: *Desmia funeralis* (Hbn.), *Diaphania hyalinata* (L.), *Herpetogramma bipunctalis* (F.), *Hymenia fascialis* Cram., *H. perspectalis* Hbn., *H.*

recurvalis (F.), *Mimorista flavidissimilis* (Grt.), *Ostrinia obliteralis* (Wlk.), *Udea rubigalis* (Gn.), *Autographa falcifera* (Kby.), *Ancylics complana* (Froel.).

Limneria infesta Cresson, 1872. Amer. Ent. Soc., Trans. 4: 172. ♀.

Campoplex divisus Cresson, 1874 (1873). Acad. Nat. Sci. Phila., Proc. 25: 385. ♂.

Limneria sessilis Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 433. ♀. Preocc. by Provancher, 1875.

Limneria(?) *erythrogaster* Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 434. ♀.

Limnerium Ashmeadii Dalla Torre, 1901. Cat. Hym., v. 3, p. 90. N. name for *L. sessilis* Ashmead.

Limnerium erythrogastrum Dalla Torre, 1901. Cat. Hym., v. 3, p. 95. Emend.

Angitia autumnalis Viereck, 1906. Amer. Ent. Soc., Trans. 32: 181. ♀.

Anempheres diaphaniae Viereck, 1911. U. S. Natl. Mus., Proc. 40: 188. ♀.

Taxonomy: Townes, 1946. Bol. Ent. Venezolana 5: 36 (syn.).

Biology: Swezey, 1926. Hawaii. Ent. Soc., Proc. 6: 296. — Williams, 1931. Handb. Ins.

Hawaiian Sugar Cane Fields, p. 267-268. — Ball, Reeves, Boden, and Stone, 1935. U. S.

Dept. Agr., Tech. Bul. 463: 40. — Benham and Poinar, 1975. Jour. Invert. Path. 26: 181-191.

lamina (Viereck). Mass., N. Y., Pa., Md., n. Va., Ont., s. Ohio, Iowa. Host: *Epargyreus clarus* (Cram.).

Zastenomorpha lamina Viereck, 1921. Psyche 28: 81. ♀.

limenitidis (Howard). Que. w. to s. B. C., s. to D. C., s. Tex., and Ariz. Host: *Dasychira basiflava* (Pack.), *D. plagiata* (Wlk.), *Orgyia antiqua* (L.), *O. leucostigma* (J. E. S.), *O. pseudotsugata* (McD.), *Malacosoma americanum* (F.), *Limenitis archippus* (Cram.), *Hyphantria cunea* (Drury), *Catocala antinympha* (Hbn.).

Limneria limenitidis Howard, 1889. In Scudder, Butterflies of Eastern U. S., v. 3, p. 1883. ♂.

Amorphota orgyiae Howard, 1897. U. S. Dept. Agr., Div. Ent., Tech. Ser. 5: 53. ♂, ♀.

Pseudocasiniaria ceanothi Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 270. ♂.

Neonortonia graciliforma Viereck, 1925. Canad. Ent. 57 (7): 179 (key); 57 (12): 300. ♂.

Taxonomy: Townes and Townes, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 365 (syn.). — Finlayson, 1975. Ent. Soc. Canada, Mem. 94: 27, 30, 98, 135 (final-instar larva).

Biology: Howard, 1897. U. S. Dept. Agr., Div. Ent., Tech. Ser. 5: 20-21.

melanophiae Walley. Southern B. C. Host: *Melanolophia imitata* (Wlk.).

Casinaria melanophiae Walley, 1959. Canad. Ent. 91: 565. ♂, ♀.

Taxonomy: Finlayson, 1975. Ent. Soc. Canada, Mem. 94: 27, 31-32, 100, 135 (final-instar larva).

scabriformis Viereck. Mass. s. to n.w. S. C., w. to n.e. Kans. Host: *Eupithecia miserulata* Grt.

Casinaria scabriformis Viereck, 1912. U. S. Natl. Mus., Proc. 42: 635. ♀.

Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 607.

semiothisae Walley. Que. w. to s. B. C., s. to D. C., Ark., and Oreg. Host: *Caripeta divisata* (Wlk.), *Semiothisa bisignata* Wlk., *S. "granitata"* auct., *S. sexmaculata* (Pack.). The cocoon description given by Finlayson (1975) contrasts with that in Walley's (1947) revision of *Casinaria*.

Casinaria semiothisae Walley, 1941. Canad. Ent. 73: 169. ♂, ♀.

Taxonomy: Finlayson, 1975. Ent. Soc. Canada, Mem. 94: 15, 26, 32-33, 100, 135 (final-instar larva).

tenuiceps Walley. Md., n. Ga.

Casinaria tenuiceps Walley, 1947. Sci. Agr. 27: 378. ♂, ♀.

vadosa Walley. R. I., Md., n. Ga., Tex.

Casinaria vadosa Walley, 1947. Sci. Agr. 27: 395. ♀.

Genus CHAROPS Holmgren

Charops Holmgren, 1859 (1858). Svenska Vetensk.-Akad., Ofvers. af ... Forhandl. 15: 324.

Type-species: *Campoplex decipiens* Gravenhorst. Monotypic. The type-species is regarded as a synonym of *Casinaria cantator* (De Geer).

Zacharops Viereck, 1912. U. S. Natl. Mus., Proc. 42: 646.

Type-species: *Charops annulipes* Ashmead. Monotypic and orig. desig.

Gongropelma Enderlein, 1921. Stettin. Ent. Ztg. 83: 13.

Type-species: *Gongropelma formosanum* Enderlein. Orig. desig. The type-species is regarded as a synonym of *C. bicolor* (Szepligeti).

Most of the species in this fairly large genus occur in the tropics, and there is only a single Nearctic species. The cocoons of at least some of the species are suspended from foliage by a thread of silk. The hosts are various lepidopterous larvae which do not conceal themselves when feeding.

Revision: Gupta and Sharda Maheshwary, 1971 (1970). Oriental Insects 4: 453-480 (Indian spp.).

annulipes Ashmead. Que. s. to n. Fla., w. to n.e. Kans. and e. Tex.

Charops annulipes Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 414. ♂.

Genus DUSONA Cameron

Dusona Cameron, 1901 (1900). New Zeal. Inst., Trans. and Proc. 33: 107.

Type-species: *Dusona stramineipes* Cameron. Monotypic.

Delopia Cameron, 1903. Ztschr. System. Hym. Dipt. 3 (5): 304.

Type-species: *Delopia cariniscutis* Cameron. By subsequent monotypy from inclusion by Cameron, 1903 (3 [6]: 337-338 of same jour.).

Anisitsia Viereck, 1912. U. S. Natl. Mus., Proc. 42: 632. Preocc. by Eigenmann, 1903.

Type-species: *Campoplex villosus* Norton. Orig. desig.

Campoplegidea Viereck, 1912. U. S. Natl. Mus., Proc. 42: 644.

Type-species: *Campoplex oxyacanthae* Boie. Monotypic and orig. desig.

Pseudocasinaria Viereck, 1912. U. S. Natl. Mus., Proc. 42: 644.

Type-species: *Casinaria americana* Ashmead. Monotypic and orig. desig.

Thymarinomorpha Viereck, 1913. U. S. Natl. Mus., Proc. 46: 384.

Type-species: *Thymarinomorpha platygastera* Viereck. Monotypic and orig. desig. The type-species is regarded as a synonym of *D. gnara* (Cresson).

Viereckiana Strand, 1914. Arch. f. Naturgesch. (A) 80 (1): 163. N. name for *Anisitsia* Viereck.

Zachrestinus Enderlein, 1921. Stettin. Ent. Ztg. 82: 38.

Type-species: *Zachrestinus fractocristatus* Enderlein. Monotypic and orig. desig.

Idiosomidea Viereck, 1925. Roy. Soc. Canada, Proc. and Trans. (3) 19 (5): 271.

Type-species: *Campoplex photomorphus* Viereck. Orig. desig.

Neodelopia Benoit, 1957. Inst. Sci. Madagascar, Mem. (E) 8: 314.

Type-species: *Neodelopia pauliani* Benoit. Monotypic and orig. desig.

This very large genus is known from all zoogeographic regions. The hosts are larvae of macrolepidoptera which feed on trees and shrubs and do not conceal themselves while feeding. More rearings in North America have been from Geometridae than from Lepidoptera of other families.

Revision: Walley, 1940. Sci. Agr. 20: 647-734.

Taxonomy: Townes and Townes, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 370 (syn.). —Townes, Momoi, and Townes, 1965. Amer. Ent. Inst., Mem. 5: 285-286 (syn.).

alia (Norton). Mass. The holotype is lost and no revisor has yet decided what name should be suppressed as a synonym of *alia*.

Campoplex alius Norton, 1863. Ent. Soc. Phila., Proc. 1: 367. ♀.

americana (Ashmead). Mass. w. to s. B. C., s. to Ala., n.e. Tex., and Colo.

Casinaria americana Ashmead, 1890. Colo. Biol. Assoc. Bul. 1: 22. ♀.

Campoplegidea (Viereckiana) *erythromera* Viereck, 1926. Roy. Soc. Canada, Proc. and Trans. (3) 20 (5): 177. ♀.

- argentea** (Norton). Que., Mass., N. Y., N. J., Pa., Va., Ont., Mich., n. Ill., s. B. C. Host:
Symmerista albifrons (J. E. S.), *S. canicosta* Franci.
Campoplex argenteus Norton, 1863. Ent. Soc. Phila., Proc. 1: 365. ♀.
Campoplegidea citriscapa Viereck, 1925. Roy. Soc. Canada, Proc. and Trans. (3) 19 (5): 264.
 ♂, ♀.
- assista** (Norton). N. S. s. to S. C., w. to Mich.
Campoplex assistus Norton, 1863. Ent. Soc. Phila., Proc. 1: 367. ♀.
Campoplegidea (Viereckiana) curvata Viereck, 1926. Roy. Soc. Canada, Proc. and Trans. (3) 20 (5): 179. ♀.
Campoplegidea (Viereckiana) citripes Viereck, 1926. Roy. Soc. Canada, Proc. and Trans. (3) 20 (5): 179. ♂.
- associata** (Walley). Northeastern Mo., s.w. Ark., n.w. La.
Campoplegidea associata Walley, 1940. Sci. Agr. 20: 673. ♂, ♀.
- australis** (Walley). Md., n.w. S. C., Ont.
Campoplegidea australis Walley, 1940. Sci. Agr. 20: 715. ♂, ♀.
- bellula** (Dalla Torre). N. S. w. to s. Alta., s. to Mich., n. Tex., Colo., and n.e. Calif.
Campoplex bellus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 172. "♂" = ♀. Preocc. by Cresson, 1865.
Campoplex bellulus Dalla Torre, 1901. Cat. Hym., v. 3, p. 138. N. name for *C. bellus* Cresson, 1872.
Campoplex photomorphus Viereck, 1905. Kans. Acad. Sci., Trans. 19: 309. ♀.
Idiosomidea secunda Viereck, 1925. Roy. Soc. Canada, Proc. and Trans. (3) 19 (5): 272. ♂.
Campoplegidea nitida Walley, 1940. Sci. Agr. 20: 713. ♂, ♀.
- Taxonomy: Townes and Townes, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 371 (syn.).
- brachiator** (Say). Que. s. to e. N. C. and n. Ga., w. to s. Mich., w. Ky., and n. Ala.
Ophion brachiator Say, 1836. Boston Jour. Nat. Hist. 1: 240. Sex not indicated.
Campoplex xanthogaster Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 159. ♀.
- Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 105 (syn. of *C. xanthogaster* confirmed).
- canadensis** (Walley). Ont., s.w. Alta., n. and s. B. C. Host: *Enargia decolor* Wlk., noctuid.
Campoplegidea canadensis Walley, 1940. Sci. Agr. 20: 665. ♂, ♀.
- confluens** (Walley). Que., N. Y., Ont., Mich., Wis.
Campoplegidea confluens Walley, 1940. Sci. Agr. 20: 673. ♂, ♀.
- conformis** (Walley). Southeastern Ariz. Known only from the holotype which was collected at Palmerlee, Ariz., a locality discussed by Townes and Linna (1963).
Campoplegidea conformis Walley, 1940. Sci. Agr. 20: 726. ♀.
- Taxonomy: Townes and Linna, 1963. Ent. Soc. Wash., Proc. 65: 242 (obscure localities).
- crassicornis** (Provancher). N. B. w. to s. Alta., s. to N. Y., n. Ohio, and e. S. Dak. Host: *Isia isabella* (J. E. S.).
Limneria crassicornis Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 88. ♂.
Campoplegidea crassata Viereck, 1925. Roy. Soc. Canada, Proc. and Trans. (3) 19 (5): 267.
 ♂.
- Campoplegidea (Viereckiana) mimeticus* Viereck, 1926. Roy. Soc. Canada, Proc. and Trans. (3) 20 (5): 175. ♂, ♀.
- Campoplegidea (Viereckiana) sessilis* Viereck, 1926. Roy. Soc. Canada, Proc. and Trans. (3) 20 (5): 179. ♂.
- Campoplegidea (Viereckiana) flavicoxa* Viereck, 1926. Roy. Soc. Canada, Proc. and Trans. (3) 20 (5): 180. ♂.
- deceptor** (Walley). N. Y., Pa., D. C., n. Va., Ont., Ind., s.e. Sask.
Campoplegidea deceptor Walley, 1940. Sci. Agr. 20: 714. ♂, ♀.
- diversa** (Norton). Mass., Conn., N. Y., Pa. Townes (1945) indicated that *wyomingensis* (Viereck) is the correct name for the species identified as *diversa* in Walley's (1940) revision of *Dusona*.
Campoplex diversus Norton, 1863. Ent. Soc. Phila., Proc. 1: 366. ♂, ♀.
- Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 632: 643.

- diversella* (Walley). Que., N. Y., Mich., n.e. Kans., Tex.
Campoplegidea diversella Walley, 1940. Sci. Agr. 20: 671. ♂, ♀.
- diversicolor* (Viereck). Que., N. Y., Ont.
Campoplegidea diversicolor Viereck, 1925. Roy. Soc. Canada, Proc. and Trans. (3) 19 (5): 265. ♀.
- downesi* (Viereck). N. Mex., s.w. Alta., s.w. B. C. s. to s. Calif. Host: *Homoglaea carbonaria* (Harv.).
Campoplegidea downesi Viereck, 1925. Roy. Soc. Canada, Proc. and Trans. (3) 19 (5): 265. ♂, ♀.
Campoplegidea planatella Viereck, 1925. Roy. Soc. Canada, Proc. and Trans. (3) 19 (5): 267. ♂.
Campoplegidea vadosa Viereck, 1925. Roy. Soc. Canada, Proc. and Trans. (3) 19 (5): 269. ♀.
- Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 632 (syn.).
- egregia* (Viereck). Pa., Md., D. C., n. Va., Ohio, s. Mich., w. Ky., Ala., s. Tex.
Viereckiana egregia Viereck, 1916. Biol. Soc. Wash., Proc. 29: 167. ♂, ♀.
- ellopieae* (Walley). Maine, Ont., and n. Mich. s. to w. N. C. Host: *Lambdina fiscellaria fiscellaria* (Gn.).
Campoplegidea (Viereckiana) ellopiae Walley, 1929. Canad. Ent. 61: 22. ♂, ♀.
- Biology: Schedl, 1931. Ztschr. f. Angew. Ent. 18: 258-260.
- experta* (Cresson). Northern Va., s. Ind., w. Ky., s.e. Iowa, n.e. Kans., Okla., n. Tex.
Campoplex expertus Cresson, 1872. Amer. Ent. Soc., Trans. 6: 171. "♂" = ♀.
- ferruginea* Walkley. Southern Fla.
Dusona ferruginea Walkley, 1963. Ent. News 74: 239. ♀.
- flavescens* (Walley). Tex., s. Ariz., Calif.; n. Mexico. Host: *Anacamptodes fragillaria* (Grossb.).
Campoplegidea flavescens Walley, 1940. Sci. Agr. 20: 710. ♀. The holotype was collected at Phoenix, Ariz. on April 11, 1897, probably on *Salix*, by R. E. Kunze.
- fossata* (Viereck). Que., N. H., N. J., Pa., Ont., Man., Sask., s. Alta., w. Oreg.
Campoctonus fossatus Viereck, 1926. Roy. Soc. Canada, Proc. and Trans. (3) 20 (5): 182. ♂.
- fuscitarsis* (Viereck). Que. w. to s. Alta., s. to N. C. and n. Mich. Host: *Eufidomia notataria* (Wlk.).
Campoplegidea (Viereckiana) fuscitarse Viereck, 1926. Roy. Soc. Canada, Proc. and Trans. (3) 20 (5): 175. ♀.
- glaucia caliginosa* (Walley). Sask., s. Alta., s.-coastal Alaska s. to n. Calif.
Campoplegidea caliginosa Walley, 1940. Sci. Agr. 20: 693. ♀.
- Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 634 (status change).
- glaucia glauca* (Norton). Que. w. to Man., s. to Md. and n.e. Kans. Host: *Lygris diversilineata* (Hbn.), *L. gracilineata* (Gn.). A third, undescribed subspecies was recorded from Ariz. by Townes and Townes (1951).
Campoplex glaucus Norton, 1863. Ent. Soc. Phila., Proc. 1: 366. ♀.
Campoplex dissitus Norton, 1863. Ent. Soc. Phila., Proc. 1: 367. ♀.
Campoplegidea rossi Viereck, 1925. Roy. Soc. Canada, Proc. and Trans. (3) 19 (5): 268. ♂.
- Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 633-634 (syn.). —Townes and Townes, 1951. In Muesebeck et al., U. S. Dept. Agr., Agr. Monog. 2: 372.
- gracilis* (Walley). Conn., N. Y., Pa., s.e. Ont., n. Ohio, Mich., s.w. Man.
Campoplegidea gracilis Walley, 1940. Sci. Agr. 20: 701. ♀.
- grahami* (Walley). N. H., Colo., s.w. B. C. In the East this species apparently has been collected only on the top of Mt. Washington, N. H.
Campoplegidea grahami Walley, 1940. Sci. Agr. 20: 698. ♀.
- insolita* (Walley). Que., Ont., s. Man.
Campoplegidea insolita Walley, 1940. Sci. Agr. 20: 681. ♀.
- interstitialis* (Walley). Que., Mo.?
Campoplegidea interstitialis Walley, 1940. Sci. Agr. 20: 703. ♀.
- johnsoni* (Walley). Eastern Mass., s.e. N. Y., N. J.
Campoplegidea johnsoni Walley, 1940. Sci. Agr. 20: 729. ♀.

- laminata** (Walley). Que. w. to s. Man., s. to Pa., n. Mich., and Tex.
Campoplegidea laminata Walley, 1940. Sci. Agr. 20: 680. ♂, ♀.
- laponica kukakensis** (Ashmead). Que. w. to s.w. Alaska, s. to N. Y., n. Mich., w. Ont., and s. Idaho. Host: *Hydria prinivorata* (Ferg.), *Rheumaptera hastata* (L.). *D. laponica laponica* (Holmgren) is European.
Zachresta kukakensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 235. ♂.
Campoplegidea caudata Walley, 1940. Sci. Agr. 20: 686. ♂, ♀.
- Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 635 (syn. and status change).
- laticincta** (Cresson). Que. w. to s. Alta. and w. Oreg., s. to n. Ga., n. Ohio, Colo., and n. Calif.
 Host: *Heliothis* sp., noctuid.
Campoplex laticinctus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 283. ♀.
Campoplex nigripes Provancher, 1874. Nat. Canad. 6: 145. ♀. Preocc. by Gravenhorst, 1829 and Brulle, 1846.
Campoplegidea brooksi Viereck, 1925. Roy. Soc. Canada, Proc. and Trans. (3) 19 (5): 264. ♂, ♀.
- lobata** (Walley). Que., N. Y., n. Va., S. C., n. Ga., Ont., Man., s. B. C. Host: *Semiothisa "granitata"* auct., *S. sermaculata* (Pack.).
Campoplegidea lobata Walley, 1940. Sci. Agr. 20: 713. ♂, ♀.
- luctuosa** (Provancher). Que., s.w. Alta., n. Idaho, Ariz., s. B. C. n. Calif. Host: *Enypia venata* (Grt.), *Hydriomena divisaria* (Wlk.), *H. furcata* (Thun.).
Campoplex luctuosus Provancher, 1875. Nat. Canad. 7: 145. ♀.
Anisitsia nigerrima Viereck, 1912. U. S. Natl. Mus., Proc. 43: 583. ♀.
- Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 636 (syn.).
- magnifica** (Walley). N. Y., n. Ala.
Campoplegidea magnifica Walley, 1940. Sci. Agr. 20: 727. ♂, ♀.
- major** (Cresson). Que., Mass., R. I., Pa., s. Mich., Man., N. Mex., s.w. B. C. Host: *Schizura unicornis* (J. E. S.), *Abbottana clemataria* (J. E. S.).
Campoplex major Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 369. ♀.
Campoplegidea (Viereckiana) totalis Viereck, 1926. Roy. Soc. Canada, Proc. and Trans. (3) 20 (5): 174. ♀.
- minor** (Provancher). N. S. w. to s.-coastal Alaska, s. to n. Va., n. Mich., Colo., s.w. Mont., and s. B. C. Host: *Eupithecia luteata* Pack., *E. transcanadata* MacK.
Campoplex minor Provancher, 1879. Nat. Canad. 11 (no. 127): 150. ♀.
Pseudocasinaria decorata Viereck, 1926. Roy. Soc. Canada, Proc. and Trans. (3) 20 (5): 183. ♂.
- Amorphota pacifica* Viereck, 1926. Roy. Soc. Canada, Proc. and Trans. (3) 20 (5): 184. ♂.
- Campoplegidea mitis* Walley, 1940. Sci. Agr. 20: 689. ♀.
- Campoplegidea maritima* Walley, 1940. Sci. Agr. 20: 689. ♀.
- Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 636-637 (syn.).
- montrealensis** (Viereck). N. S. s. to n. Ga., w. to Man.
Campoplegidea (Viereckiana) montrealensis Viereck, 1926. Roy. Soc. Canada, Proc. and Trans. (3) 20 (5): 181. ♂.
- nigritibialis** (Viereck). Southern Idaho, s.w. B. C., Wash., n. Calif.
Campoplegidea (Viereckiana) nigritibialis Viereck, 1926. Roy. Soc. Canada, Proc. and Trans. (3) 20 (5): 178. ♀.
- obesa** (Davis). Maine, Mass., N. Y., Pa., s.w. Va., Mich. This species with a long ovipositor was not included in Walley's (1940) revision of *Dusona*.
Zachresta(!) *obesa* Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 361. ♀.
- occidentalis** (Davis). Southwestern B. C., w. Wash.
Campoplex occidentalis Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 361. ♂, ♀.
- ocellata** (Walley). Md., s. Tex.
Campoplegidea ocellata Walley, 1940. Sci. Agr. 20: 718. ♀.
- pallescens** (Walley). Eastern N. C., Tenn., S. C., Ga., s. Fla.
Campoplegidea pallescens Walley, 1940. Sci. Agr. 20: 722. ♀.

- pectoralis** (Walley). Que., Ont., n. Mich., s. Sask., n. and s. Alta., s. B. C. Host: *Deilinea bryantaria* (Tay.).
Campoplegidea pectoralis Walley, 1940. Sci. Agr. 20: 686. ♀.
- pilosa** (Walley). Colo., Ariz., s.w. B. C., Oreg., n. Calif. Host: *Enyppia packardata* Tay., *E. venata* (Grt.), *Melanolophia imitata* (Wlk.).
Campoplegidea pilosa Walley, 1940. Sci. Agr. 20: 733. ♂, ♀.
- planata** (Viereck). Que., N. Y., Md., Ont., Mich., Ill. Host: Noctuid.
Campoplegidea planata Viereck, 1925. Roy. Soc. Canada, Proc. and Trans. (3) 19 (5): 267. ♀.
- pulchella** (Walley). Southwestern Utah, n.w. Ariz., s. Calif.
Campoplegidea pulchella Walley, 1940. Sci. Agr. 20: 717. ♂, ♀.
- quebecensis** (Walley). Que., Mass.
Campoplegidea quebecensis Walley, 1940. Sci. Agr. 20: 731. ♀.
- relecta** (Davis). N. H., N. Y., s.e. B. C.
Campoplex relectum Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 361. ♀.
Campoplegidea egregiata Viereck, 1925. Roy. Soc. Canada, Proc. and Trans. (3) 19 (5): 266. ♀.
- Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 638 (syn.).
- robusta** (Walley). Mass., N. J., Pa., n. Ga., s. Ohio, s. Mich.
Campoplegidea robusta Walley, 1940. Sci. Agr. 20: 725. ♂, ♀.
- rotunda** (Walley). N. S., Que., Wash.
Campoplegidea rotunda Walley, 1940. Sci. Agr. 20: 697. ♀.
- rufescens** (Walley). Southern N. Y. w. to s. Mich. and Iowa, s. to n. Va., Mo., and n.e. Kans.
Campoplegidea rufescens Walley, 1940. Sci. Agr. 20: 720. ♂, ♀.
- rufigaster** (Walley). N. H. s. to s. Fla., w. to s. Mich. and w. Ky.
Campoplegidea rufigaster Walley, 1940. Sci. Agr. 20: 705. ♀.
- scalaria** (Provancher). Que., Alta., Wash.
Campoplex scalaris Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 84. ♀ (♂ misdet.).
Campoplex scalaris (!) Provancher, 1889. Addit. Corr. Faune Ent. Canada Hym., p. 449 (index).
Campoplegidea scalaris Walley, 1940. Sci. Agr. 20: 654, 706, 707. Emend.
- seamansi** (Viereck). Southern Man., Colo., s.w. Alta., s. B. C. Host: Geometrid, *Choristoneura conflictana* (Wlk.)?
Campoplegidea edmontonensis Viereck, 1925. Roy. Soc. Canada, Proc. and Trans. (3) 19 (5): 266. ♂.
Campoplegidea seamansi Viereck, 1925. Roy. Soc. Canada, Proc. and Trans. (3) 19 (5): 268. ♀.
- Amorphota bicoloripes* Viereck, 1926. Roy. Soc. Canada, Proc. and Trans. (3) 20 (5): 184. ♀.
- Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 639 (syn.).
- semirufa** (Provancher). Que., Vt., N. Y., Mich., Colo., s. B. C. Host: *Pheosia rimosa* Pack.
Campoplex semirufus Provancher, 1882. Nat. Canad. 13: 364. ♀.
Campoplegidea okanaganensis Viereck, 1925. Roy. Soc. Canada, Proc. and Trans. (3) 19 (5): 270. ♀.
- signata** (Viereck). N. B., Que., N. C., Ont., n. Mich., Man., Sask., n. B. C. Host: Noctuid.
Campoplegidea signata Viereck, 1925. Roy. Soc. Canada, Proc. and Trans. (3) 19 (5): 262. ♂, ♀.
- simulans arizonensis** (Walley). Southern Ariz.
Campoplegidea arizonensis Walley, 1940. Sci. Agr. 20: 709. ♂, ♀.
- Taxonomy: Townes and Townes, 1951. In Muesebeck et al., U. S. Dept. Agr., Agr. Monog. 2: 374 (status change).
- simulans simulans** (Walley). N. J., S. C.
Campoplegidea simulans Walley, 1940. Sci. Agr. 20: 704. ♂, ♀.

stricklandi (Viereck). Southwestern Alta.

Campoplegidea stricklandi Viereck, 1925. Roy. Soc. Canada, Proc. and Trans. (3) 19 (5): 269. ♂.

subtilis (Viereck). Southwestern Alta.

Campoplegidea (Viereckiana) subtilis Viereck, 1926. Roy. Soc. Canada, Proc. and Trans. (3) 20 (5): 176. ♀.

tepaneca (Cresson). Ariz.; Mexico, Guatemala? This species was not included in Walley's (1940) revision of *Dusona*.

Campoplex tepanecus Cresson, 1874. Acad. Nat. Sci. Phila., Proc. 25: 382. ♂, ♀.

texana (Ashmead). D. C., n. Ga., n.e. Kans., Tex., Wash.; Guatemala.

Casinaria texana Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 427. ♀.

Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 640 (syn. corrected).

townsendi (Walley). N. Mex. Apparently known only from the type series which was collected at an elevation of 8000 ft. in the White Mts.

Campoplegidea townsendi Walley, 1940. Sci. Agr. 20: 703. ♂, ♀.

tumida (Walley). Ariz., w. Oreg.

Campoplegidea tumida Walley, 1940. Sci. Agr. 20: 716. ♀.

turmalis (Walley). Southwestern Tex.

Campoplegidea turmalis Walley, 1940. Sci. Agr. 20: 711. ♀.

vara (Walley). N. S. w. to Sask., s. to N. J., Pa., and n. Mich.

Campoplegidea vara Walley, 1940. Sci. Agr. 20: 663. ♂, ♀.

variabilis (Franklin). N. S., Que., Maine, Mass. Host: *Ematurga amitaria* (Gn.). The record for *variabilis* as a parasite of *Synchlora rubrifrontaria* Pack. published by Schaffner and Griswold (1934) is based upon a misidentified specimen in the U. S. Natl. Museum collection. The specimen is now too badly damaged to be reidentified readily.

Campoplex variabilis Franklin, 1915. Ent. News 26: 356. ♀. Preocc. by *Campoplex variabilis* (Bridgman), 1886.

Biology: Schaffner and Griswold, 1934. U. S. Dept. Agr., Misc. Pub. 188: 148.

varicoxa (Viereck). Que., N. H., N. Y., Pa., Md., n. and w. Ont., s. Alta., s.w. B. C. Host:

Nemoria mimosaria (Gn.).

Campoplegidea (Viereckiana) varicoxa Viereck, 1926. Roy. Soc. Canada, Proc. and Trans.

(3) 20 (5): 180. ♂.

Campoplegidea (Viereckiana) reticulata Viereck, 1926. Roy. Soc. Canada, Proc. and Trans.

(3) 20 (5): 181. ♂.

Pseudocasinaria paenealia Viereck, 1926. Roy. Soc. Canada, Proc. and Trans. (3) 20 (5):

182. ♂.

vibecifera (Viereck). Ont.?, Mich.?, e. Sask. Host: Geometrid.

Campoplegidea vibecifera Viereck, 1925. Roy. Soc. Canada, Proc. and Trans. (3) 19 (5): 270. ♂.

vicina (Provancher). Que., Ont., Man. Host: *Semiothisa "granitata"* auct., *S. sexmaculata* (Pack.).

Campoplex vicinus Provancher, 1874. Nat. Canad. 6: 145. ♂, ♀.

villosa (Norton). Que. w. to s. B. C., s. to w. N. C., s. Mich., n.e. Kans., N. Mex., and Oreg. Host: *Pero* sp.

Campoplex villosus Norton, 1863. Ent. Soc. Phila., Proc. 1: 365. ♂, ♀.

vitticollis (Norton). Que. w. to s.e. Alaska, s. to n. Ga., n. Ala., Tex., N. Mex., and Ariz. Host:

Caripeta divisata Wlk., *Hypagyrtis piniata* (Pack.), *Phigalea titea* (Cram.), *Malacosoma dissitia* (Hbn.)?

Campoplex vitticollis Norton, 1863. Ent. Soc. Phila., Proc. 1: 365. ♀.

woody (Viereck). Que., Pa., Md., n. Va., Ont., s. Ohio.

Campoplegidea (Viereckiana) woody Viereck, 1926. Roy. Soc. Canada, Proc. and Trans. (3) 20 (5): 177. ♂.

Campoplegidea (Viereckiana) erythrosoma Viereck, 1926. Roy. Soc. Canada, Proc. and Trans. (3) 20 (5): 177. ♀.

wyomingensis (Viereck). N. S. w. to s. B. C., s. to s.w. Va., Ohio, and w. Wyo. In Walley's (1940) revision of *Dusona*, *wyomingensis* was incorrectly suppressed as a synonym of *diversa* (which see).

Campoplex wyomingensis Viereck, 1906. Amer. Ent. Soc., Trans. 32: 342. ♂.

Campoplegidea walleyi Viereck, 1925. Roy. Soc. Canada, Proc. and Trans. (3) 19 (5): 271. ♀.

Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 643 (*wyomingensis* resurrected).

Genus LEPTOCAMPOPLEX Horstmann

Leptocampoplex Horstmann, 1970. Bayer. Ent., Nachrichtenbl. 19: 78.

Type-species: *Nemeritis cremastoides* Holmgren. Monotypic and orig. desig.

A single Holarctic species is known. The genus appears to be closely related to *Menaka* Gupta and Gupta (1971), from which *Leptocampoplex* differs principally by lacking the second intercubitus. The name *Porizon* was incorrectly applied to *Leptocampoplex* by Townes (1965, 1970); see the introductory discussion of *Porizon*.

Taxonomy: Townes, 1965. Polskie Pismo Ent. 35: 410 (as *Porizon*). —Townes, 1970 (1969).

Amer. Ent. Inst., Mem. 13: 157, 167-168, 278 (as *Porizon*). —Gupta and Gupta, 1971.

Oriental Insects 5: 111-116 (related Indian genus).

cremastoides (Holmgren). Ont., Mich.; Europe. Host: *Ptilinus pectinicornis* (L.)? Townes (1970) gave the Nearctic range as "eastern North America" in referring to what he regarded as being an undescribed Nearctic species. Horstmann (1970) stated that he believed the Nearctic specimens he had seen (apparently borrowed from Townes) to represent only an undescribed subspecies of *cremastoides*, differing from the European one in having the underside of the scape pale (i.e. "helle"). In view of the fact that the known Nearctic range of *cremastoides* is not similar to that of most Holarctic ichneumonid species, proof that *cremastoides* is not adventive in North America should precede validation of a name for the Nearctic population. The host record cited with a query above pertains to a specimen acquired from A. W. Stelfox by the U. S. Natl. Museum; the specimen is labeled "? parasitic on *Ptilinus pectinicornis*!"

Nemeritis cremastoides Holmgren, 1860 (1858). Svenska Vetensk.-Akad. Handl. (n. f.) 2: 105. ♀.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 168, 278 (as "*Porizon moderator*," misdet.). —Horstmann, 1970. Bayer. Ent., Nachrichtenbl. 19: 79.

Genus PYRACMON Holmgren

Pyracmon Holmgren, 1859 (1858). Svenska Vetensk.-Akad., Ofvers. af ... Forhandl. 15: 326.

Type-species: *Porizon fumipennis* Zetterstedt. Monotypic and orig. desig.

This is a small Holarctic genus. Townes (1970) knew five species, one of them being an undescribed Nearctic species. Dr. John Barron has informed me (personal commun., 1977) that the latter has been reared from Elateridae and will be described by Mr. G. S. Walley. Dr. Klaus Horstmann will probably have published a revision of the European species prior to the appearance of this catalog.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 169.

sepiella (Holmgren). N. H., Mich.; Eurasia. Host: *Macropogon piceus* LeC. Numerous additional Nearctic localities will presumably be given by Mr. G. S. Walley in a forthcoming paper.

Limneria sepiella Holmgren, 1860 (1858). Svenska Vetensk.-Akad. Handl. (n. f.) 2 (8): 63. ♂, ♀.

Pyracmon sepiellum Townes, 1965. In Townes, Townes, and Gupta, Amer. Ent. Inst., Mem. 5: 283. Emend.

Genus RHIMPHOCTONA Foerster

Rhimphoctona Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 153.

Type-species: *Rhimphoctona rufipes* Tschek. By subsequent monotypy from inclusion by Tschek, 1871. The type-species is regarded as a junior synonym of *R. grandis* (Fonscolombe).

Xylophylax Kriechbaumer, 1878. Ent. Nachr. 4: 210.

Type-species: *Pyracmon* (*Parapyracmon*) *rufocoxalis* Clement. Monotypically included and desig. by Townes, 1970.

Helcostizidea Rohwer, 1913. Ent. Soc. Wash., Proc. 15: 185.

Type-species: *Cubocephalus atrocoxalis* Ashmead. Orig. desig.

Pyracmon subg. *Parapyracmon* Clement, 1924. Deut. Ent. Ztschr. (for 1924), p. 117-131.

Type-species: *Pyracmon* [*Parapyracmon*] *rufocoxalis* Clement. Desig. by Townes, 1970.

Pyracmonoides Viereck, 1925 (July). Canad. Ent. 57 (7): 177-178.

Type-species: *Pyracmonoides separatum* Viereck. Desig. by Viereck, 1925 (Dec.).

This is a small Holarctic genus.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 162-163 (generic syn. and referral of Nearctic spp.).

alaskensis (Ashmead). Alaska. More explicit locality data are presumably unavailable; one of the labels of each of the three syntypes says "U. S. N. M. Acc[ession] 25341," but it would be uncharacteristic for the Smithsonian Institution to have meaningful information pertaining to that number.

Cubocephalus alaskensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 203. ♀.

atrocoxalis (Ashmead). Que. w. to interior Alaska, s. to n. Calif.

Cubocephalus atrocoxalis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 203. ♀. Described from "Alaska" and "Easton, Wash." The only syntype I have found bears a label with the same U. S. N. M. accession number as on labels of the syntypes of *alaskensis* (which see).

lipoparia (Viereck). Ont.

Pyracmonoides lipoparium Viereck, 1925. Canad. Ent. 57 (7): 178 (key); 57 (12): 299. ♂.

macdunnoughi (Viereck). Que., Alta., interior Alaska, w. Oreg.

Pyracmon macdunnoughi Viereck, 1925; 1926. Canad. Ent. 57 (7): 180 (key); 58 (1): 5. ♀.

macrocephala (Provancher). Que. w. to Mont., s. to w. N. C. and Idaho.

Limneria macrocephala Provancher, 1874. Nat. Canad. 6: 149. ♀.

Pyrachmon (!) *aldrichi* Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 363. ♂, ♀.

Cubocephalus nigricornis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 203. ♀. Preocc. in *Cubocephalus* by Provancher, 1875.

Pyracmonoides succineum Viereck, 1925. Canad. Ent. 57 (7): 178 (key); 57 (12): 300. ♂.

Pyracmonoides trochantericum Viereck, 1925. Canad. Ent. 57 (7): 178 (key); 57 (12): 299. ♂.

separata (Viereck). Western Yukon.

Pyracmonoides separatum Viereck, 1925. Canad. Ent. 57 (7): 178 (key); 57 (12): 298. ♂, ♀.

vancouverensis (Harrington). Colo., s. Alta., Idaho, s.w. B. C., Wash., n. Calif.

Pyracmon vancouverensis Harrington, 1894. Canad. Ent. 26: 246. ♀.

xanthognatha (Rohwer). Westen Mont., Idaho, Wash., Oreg., n. Calif. Host: Cerambycid in bark of *Abies concolor*.

Helcostizidea xanthognatha Rohwer, 1914. Ent. Soc. Wash., Proc. 15: 186. ♀.

Genus NEMERITIS Holmgren

Nemeritis Holmgren, 1860 (1858). Svenska Vetensk.-Akad. Handl. (n. f.) 2 (8): 104.

Type-species: *Campoplex macrocentrus* Gravenhorst. Desig. by Viereck, 1914.

Pseudonemeritis Szepligeti, 1916. Mus. Natl. Hungarici, Ann. 14: 338.

Type-species: *Pseudonemeritis minor* Szepligeti. Desig. by Townes, 1970.

This is a Holarctic and Neotropical genus of small to moderate size. A number of species have been reared from Rhabdidiidae. Apparently hosts other than Rhabdidiidae are not known, which apparently explains the fact that in the New World *Nemeritis* is confined to western North America and Chile.

Revision: Horstmann, 1973. Opusc. Zool. 125: 1-14 (European spp.). — Horstmann, 1975. Polskie Pismo Ent. 45: 251-266 (elaboration).

macrurus (Viereck). Wyo., s. B. C., n. Calif.

Campoplex (*Campoplex*) *macrurus* Viereck, 1925; 1926. Canad. Ent. 57 (9): 226 (key); 58 (5): 146. ♀.

Genus BATHYPLECTES Foerster

Canidia Holmgren, 1860 (1858). Svenska Vetensk.-Akad. Handl. (n. f.) 2 (8): 103. Preocc. by Thomson, 1857.

Type-species: *Canidia pusilla* Holmgren. Desig. by Viereck, 1914.

Rhexineura Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 156.

Type-species: *Campoplex exiguus* Gravenhorst. Monotypically included and desig. by Townes, 1970.

Bathyplectes Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 156.

Type-species: *Campoplex exiguus* Gravenhorst. Monotypically included and desig. by Viereck, 1914.

Canidiella Ashmead, 1900. Canad. Ent. 32: 368. N. name for *Canidia* Holmgren.

Biolysia Schmiedeknecht, 1907. Hym. Mitteleuropas, p. 601.

Type-species: *Nepiesta marginella* Thomson. Monotypic.

This is a Holarctic genus of moderate size. Horstmann (1973, 1974) treated *Biolysia* as distinct from *Bathyplectes* to facilitate an easier distinction of the Palearctic genus *Nepiesta*. Because the species referable to *Biolysia* do not differ significantly in habits or life histories from other *Bathyplectes* species and because *Bathyplectes bryanti* Viereck is structurally intermediate, I prefer to treat *Bathyplectes* and *Biolysia* as synonymous. Known hosts include only weevils of the genus *Hypera*, but the majority of *Bathyplectes* species have not been reared. The native Nearctic species are poorly represented in collections, and the majority of them are undescribed.

Revision: Horstmann, 1974. Ent. Germ. 1: 58-81 (western Palearctic spp.).

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 164-165 (syn.). — Horstmann, 1973. Polskie Pismo Ent. 43: 729-731 (discussion and inclusion in generic key).

anurus contractus (Thomson). Central Calif.; s.w. U. S. S. R., Iran, s. Yugoslavia?, s. Germany, n. Italy, n. France, Ireland. Introduced. Host: *Hypera brunneipennis* Boh. Besides *a. contractus* and *a. anurus* (Thomson), Horstmann (1974) recognized *a. graecator* Aubert (treated here below); he knew *a. anurus* from southern Sweden (lectotype), The Netherlands, and northern and middle Germany. I am not convinced that these subspecies will be treated as valid taxa when more specimens have been collected and studied, but I here accept them as valid because my knowledge of western Palearctic zoogeography is not adequate for rejecting them for reasons of being insufficiently sound zoogeographically. Dr. Richard Dysart informed me (personal commun., 1977) of the establishment in Calif. of a population he thought most likely to be principally of Iranian origin. For that reason I have applied the name *a. contractus* to it.

Canidia contracta Thomson, 1887. Opusc. Ent. 11: 1113. ♀.

Taxonomy: Horstmann, 1974. Ent. Germ. 1: 61, 66-67.

Biology: Fisher, Schlinger, and van den Bosch, 1961. Jour. Econ. Ent. 54: 196, 197 (as *corvina*, misdet.; introductions and cocoon jumping behavior).

anurus graecator Aubert. Southern N. H., s. Vt., Mass., Conn., N. Y., N. J., Pa., Del., Md., Va., W. Va., N. C., S. C., s.e. Ont., Ohio, s. Mich., s. Ind., Ky., Tenn., Mo., w. S. Dak., Okla.; s. Yugoslavia, Greece, middle and s. Italy, s. France, n. Africa. Introduced. Host: *Hypera postica* (Gyll.). According to Dysart and Day (1976) the bulk of the *anurus* individuals released in eastern North America were of "French [apparently southern] origin," although small numbers came from Sicily and the U. S. S. R.

Bathyplectes anura graecator Aubert, 1970. Soc. Ent. de Mulhouse, Bul. 26: 68. ♂, ♀.

Taxonomy: Horstmann, 1974. Ent. Germ. 1: 61, 67.

Biology: Kaufman, 1939. Ztschr. f. Angew. Ent. 26: 421-422 (as *corvina*, misdet.). —Baccetti, 1958. Redia 43: 226-253 (as *corvina*, misdet.). —Brunson and Coles, 1968. U. S. Dept. Agr., Prod. Res. Rpt. 101: 3-4, 7 (releases). —Day, 1970. Jour. Econ. Ent. 63: 586-589 (value of jumping cocoons). —Morrison and Pass, 1974. Jour. Econ. Ent. 67: 141-142. —Dysart and Day, 1976. U. S. Dept. Agr., Prod. Res. Rpt. 167: 2-3, 9-14, 39, 44-45 (releases and recoveries). —Gordh and Hendrickson, 1976. Ent. News 87: 271-274 (sexual behavior). —Dysart and Bingham, 1977. Coop. Plant Protect. Rpt. 2: 24-26 (recoveries). —Yeargan and Latheef, 1977. Environmental Ent. 6: 31-34.

bryanti Viereck. Southern Alta. Known only from the holotype, which was collected at Bilby, Alta.

Bathyplectes bryanti Viereck, 1925; 1926. Canad. Ent. 57 (9): 225 (key); 58 (9): 223. ♀. In the 1926 part of Viereck's revision as "*Campoplex* (*Bathyplectes*) *bryanti*," nowhere in the 1925 part of the revision was *Bathyplectes* indicated to be a subgenus of *Campoplex*.

curculionis (Thomson). Southern Que. w. to s. Alta. and Wash., s. to n. Ga., n. Miss., Europe, n. Africa. Introduced. Host: *Hypera brunneipennis* Boh., *H. plantaginis* (DeG.), *H. postica* (Gyll.). The lectotype selected by Townes, Momoi, and Townes (1965) may not pertain to the present species (see Horstmann, 1974). Thomson probably had no reared material, but indicated that *curculionis* is the species which Holmgren (1860) had misidentified as *subcinctus* (Gravenhorst). Under *subcinctus*, Holmgren in turn referred to Ratzeburg (1852, p. 82; cf. Ratzeburg, 1848, p. 82) who cited hosts of reared specimens. Specimens reared from *H. postica* and *H. plantaginis* were identified by Horstmann (1974) as var. 1 of *B. curculionis*. *B. brevitator* Aubert (1974) was described as a species related to *curculionis*, the description of *brevitator* being based upon two Yugoslavian specimens reared from *H. plantaginis*. If *curculionis* var. 1 of Horstmann (1974) proves not to be conspecific with *curculionis*, it seems probable that *brevitator* will prove to be the correct name for it.

Candida curculionis Thomson, 1887. Opusc. Ent. 11: 1113. ♀. Aubert (1960) gave descriptive notes concerning a female in the Thomson collection which he regarded as being the lectotype, but he did not cite a locality or other information pertaining to the labeling of that specimen; Townes, Momoi, and Townes (1965) selected a female lectotype from Stehag, Skane, Sweden, which had been labeled as lectotype by Aubert.

Taxonomy: Holmgren, 1860 (1858). Svenska Vetensk.-Akad. Handl. (n. f.) 2 (8): 103-104. —Aubert, 1960. Vie et Milieu 11: 490. —Townes, Momoi, and Townes, 1965. Amer. Ent. Inst., Mem. 5: 252. —Aubert, 1966. Opusc. Ent. 31: 130. —Aubert, 1974. Soc. Ent. de Mulhouse, Bul. 30: 2 (*brevitator* described). —Horstman, 1974. Ent. Germ. 1: 62, 73, 74-75.

Biology: Ratzeburg, 1848; 1852. Ichn. d. Forstins., v. 2, p. 82; v. 3, p. 82. —Webster, 1912. U. S. Dept. Agr., Bur. Ent., Bul. 112: 38. —Hagan, 1919. Calif. Dept. Agr., Monthly Bul. 8: 470. —List and Wakeland, 1919. Colo. State Ent., Cir. 24: 34. —Wakeland, 1920. Colo. State Ent., Cir. 28: 28. —Chamberlin, 1924. U. S. Dept. Agr., Dept. Cir. 301: 4, 6. —Chamberlin, 1926. Jour. Econ. Ent. 19: 302-310. —Newton, 1933. Colo. Agr. Col., Bul. 399: 18. —Sorenson, 1934. Utah Acad. Sci., Proc. 11: 249-251. —Michelbacher and Essig, 1934. Jour. Econ. Ent. 27: 965. —Essig and Michelbacher, 1934. Calif. Univ., Agr. Expt. Sta., Bul. 567: 63-67. —Keifer, 1935. Calif. Dept. Agr., Monthly Bul. 24: 350. —Michelbacher, 1936. Calif. Dept. Agr., Monthly Bul. 25: 392. —Kaufman, 1939. Ztschr. f. Angew. Ent. 26: 422-424. —Michelbacher, 1940. Hilgardia 13: 81-99. —Michelbacher, 1940. Jour. Econ. Ent. 33: 892-895. —Schweis, 1942. Nev. State Dept. Agr., Bien. Rpt. (for 1940-1942), p. 33. —Michelbacher, 1943. Calif. Agr. Expt. Sta., Bul. 677: 5, 10-20. —Hamlin, McDuffie, Lieberman, and Bunn, 1943. U. S. Dept. Agr., Farmers Bul. 1930: 6-8. —Hamlin, Lieberman, Bunn, McDuffie, Newton, and Jones, 1949. U. S. Dept. Agr., Tech. Bul. 975: 41-55. —van den Bosch, 1953. Jour. Econ. Ent. 46: 161-162. —Milliron, 1956. Jour. Econ. Ent. 49: 443. —Hobbs, Nummi and Virostek, 1959. Canad. Ent. 91: 562, 564-565. —van den Bosch and Dietrick, 1959. Ent. Soc. Amer., Ann. 52: 609-616. —Fisher, Schlinger, and van den Bosch, 1961. Jour. Econ. Ent. 54: 196. —Puttler, Jones, and Coles, 1961. Jour. Econ. Ent. 54: 878-880. —Coles and Puttler, 1963. Jour. Econ. Ent. 56: 609. —van den Bosch, 1964. Jour. Econ. Ent. 57: 195-196. —Dysart and Puttler, 1965. Jour. Econ. Ent. 58:

- 1154-1155. —Butler and Ritchie, 1967. Jour. Econ. Ent. 60: 1239-1241. —M'Sadda, 1967. Rev. Zool. Agr. et Appl. 66: 13. —Salt and van den Bosch, 1967. Jour. Invert. Pathol. 9: 164-177. —Brunson and Coles, 1968. U. S. Dept. Agr., Prod. Res. Rpt. 101: 3, 8. —Horn, 1969. Jour. Econ. Ent. 61: 1469-1470. —Foster and Bishop, 1970. Idaho Agr. Expt. Sta., Res. Bul. 78: 2-20. —Richardson, Nelson, York, and Gryscio, 1972 (1971). Canad. Ent. 103: 1653-1658. —Arbrust, DeWitt, and Roberts, 1972. Environmental Ent. 1: 391-393. —Miller, Smith, and White, 1972. Environmental Ent. 1: 471-473. —Cross and Simpson, 1972. Environmental Ent. 1: 631-633 (cocoon construction). —Casagrande, 1973. Canad. Ent. 105: 1119-1128. —Miller and White, 1973. Ga. Ent. Soc., Jour. 8: 233-236. —Duodu and Davis, 1974. Environmental Ent. 3: 396-398, 549-552, 705-710. —Walstrom, 1974. Jour. Econ. Ent. 67: 309-310. —Hower, 1974. Jour. Agr. Sci. 21: 2-3. —Pike and Burkhardt, 1974. Kans. Ent. Soc., Jour. 47: 405-411. —Gibson and Berberet, 1974. Ent. Soc. Amer., Ann. 67: 588-590. —Puttler, 1974. Environmental Ent. 3: 881-882. —Davis, 1974. Environmental Ent. 3: 1031-1032. —Parrish, 1974. Forage Insect Res. Conf., Proc. 17: 18-19. —Flessel, 1975. Jour. Econ. Ent. 68: 585-586. —Arbrust, 1975. Environmental Ent. 4: 931-934. —Berberet and Gibson, 1976. Ent. Soc. Amer., Ann. 69: 205-208. —Dysart and Day, 1976. U. S. Dept. Agr., Prod. Res. Rpt. 167: 2-3, 46-47. —Bartell, Sanborn, and Wood, 1976. Environmental Ent. 5: 659-661. —Eklund and Simpson, 1977. Environmental Ent. 6: 69-71.
- exiguus** (Gravenhorst). Que. w. to s. B. C., s. to s. Va., central Mo., and central Oreg.; Europe. Adventive. Host: *Hypera nigrirostris* (F.), *H. punctata* (F.), *H. rumicosa* (L.). This species apparently became established in North America along with one of the accidentally introduced hosts (most likely *H. nigrirostris*), but the oldest North American record known to me for *exiguus* is that for one of Viereck's paratypes of the synonym *phytonomi*. It was collected in Prince Edward Co., Ont. in 1890, and although I have not seen the specimen, I have little reason to doubt that it is a specimen of *exiguus* because there are a number of *exiguus* specimens in the U. S. Natl. Museum collection which were collected at Toronto, Ont. in 1896. The oldest United States record known to me is that for Viereck's paratype of the synonym *etemankiakorum*, which he collected in New Haven, Conn. in 1904 and which is in the U. S. National Museum collection. The oldest record known to me for western North America is 1918 (Puyallup, Wash.; June 15; L. P. Rockwood). The entry of *B. exiguus* into western North America may have been independent of its establishment in the East, because the adventive thelytokous European species of *Gelis* studied by Caldwell and Wilson (1975), as a parasite of *B. curculionis* in Indiana, was reared from *B. exiguus* in northwestern Oreg. (Forest Grove and Seaside) in 1928 (cf. Rockwood, 1920); I have not seen specimens of it collected in eastern North America before 1957. Dr. K. W. R. Zwart told me (personal commun., 1976) that this species of *Gelis* is apparently undescribed.
- Campoplex subcinctus* Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 494. ♀.
- Campoplex exiguus* Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 499. ♀.
- Campoplex (Bathyplectes) etemankiakorum* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 263. ♂.
- Bathyplectes phytonomi* Viereck, 1925; 1926. Canad. Ent. 57 (9): 225 (key); 58 (9): 222. ♂, ♀. In the 1926 part of Viereck's paper as "*Campoplex (Bathyplectes) phytonomi*" (see discussion under *bryanti*).
- Taxonomy:** Horstmann, 1974. Ent. Germ. 1: 62, 73, 75.
- Biology:** Rockwood, 1920. Canad. Ent. 52: 39. —Detweiler, 1923. Cornell Univ. Agr. Expt. Sta., Bul. 420: 19. —Chamberlin, 1933. Ent. Soc. Wash., Proc. 35: 106. —Sechrist and Treece, 1963. Ohio Agr. Expt. Sta., Res. Bul. 956: 23. —Caldwell and Wilson, 1975. Environmental Ent. 4: 333-336 (*Gelis*).
- sessilis** (Provancher), revised status. Que. In 1974 I studied the holotype (see Barron, 1975) and found that *sessilis* had been incorrectly suppressed as a synonym of *exiguus* by Townes (1945).
- Limneria sessilis* Provancher, 1875. Nat. Canad. 7: 148. ♀.
- Taxonomy:** Townes, 1945. Amer. Ent. Soc., Mem. 11: 612. —Barron, 1975. Nat. Canad. 102: 566.

stenostigma (Thomson). Southern N. H., Mass., N. Y., n. Del.?, s.e. Ont., n.e. Ohio, w. Colo.; w. U. S. S. R., s. Sweden s. to s. Germany and n. France. Introduced. Host: *Hypera postica* (Gyll.). *B. stenostigma* differs from other *Bathyplectes* species with known biologies in that its final-instar larva emerges from the host larva before the latter spins its cocoon. It is interesting that this biological difference in *stenostigma* would appear to correlate with its habit of spinning a double cocoon (see Brunson and Coles, 1968). The introductions in western Colo. were apparently accompanied by the accidental release and unfortunate establishment of the thelytokous hyperparasite which I have identified as *Mesochorus nigripes* (Ratzeburg) (which see).

Canidia stenostigma Thomson, 1887. Opusc. Ent. 11: 1114. ♂ ? (♀ misdet.). Thomson failed to insert the sex symbols which usually preceded his statement of length, or range of lengths, for each species (in this case "Long. vix 4 mm."), or perhaps omission of the sex symbols was a printers error. From Thomson's description of the ovipositor it is apparent that he had a female. Neither Thomson's length measurement, nor anything else in his description indicate that he had a male specimen or a second specimen of either sex. Therefore, the validity of Aubert's (1970) selection of a male lectotype labeled "Germ." (and relegation of a female specimen to paralectotype status) would appear to rest solely upon whether or not it can be disproved that the male was found near Aachen by Foerster, the only source Thomson cited for his specimen (or specimens) of *stenostigma*.

Taxonomy: Aubert, 1970. Soc. Linn. de Lyon, Bul. Mens. 39: 276-277. —Horstmann, 1974. Ent. Germ. 1: 62, 70.

Biology: Brunson and Coles, 1968. U. S. Dept. Agr., Prod. Res. Rpt. 101: 5, 8 (as "sp. Bagged" and "n. sp."). —Dysart and Coles, 1971. Ent. Soc. Amer., Ann. 64: 1361-1367. —Dysart and Day, 1976. U. S. Dept. Agr., Prod. Res. Rpt. 167: 3, 14, 36, 39, 48-49 (releases and recoveries).

tristis (Gravenhorst). N. Y. w. to s. Mich. and e. Kans., s. to n.w. S. C. and n. Miss.; also central Calif.; s.w. Asia (U. S. S. R.), Europe. Introduced. Host: *Hypera punctata* (F.). The species is thelytokous, but males have been collected in N. J., Pa., Md., and Va. Possibly, males are even rarer in Europe because Horstmann (1974) had seen none.

Campoplex tristis Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 492. ♀ (♂ misdet.).

Canidia trochantella Thomson, 1887. Opusc. Ent. 11: 1114. ♀.

Taxonomy: Horstmann, 1974. Ent. Germ. 1: 76, 77-78.

Biology: Dicke, 1937. Jour. Econ. Ent. 30: 375-376. —Puttler and Coles, 1962. Jour. Econ. Ent. 55: 831-833. —Dysart and Puttler, 1966. Jour. Econ. Ent. 59: 425-427.

Genus CAMPOLETIS Foerster

Sagaritis Holmgren, 1859 (1858). Svenska Vetensk.-Akad., Ofvers. af ... Forhandl. 15: 325. Preocc. by Billberg, 1820 and Huebner, 1821.

Type-species: *Campoplex declinator* Gravenhorst. Monotypic and orig. desig. The type-species is regarded as a synonym of *C. dilatator* (Thunberg).

Ecphora Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 154. Preocc. by Conrad, 1843.

Type-species: *Campoplex viennensis* Gravenhorst. Desig. by Viereck, 1914 from three species included by Thomson, 1887.

Campoletis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 157.

Type-species: *Mesoleptus tibiator* Cresson. By subsequent monotypy from inclusion by Houghton, 1907.

Anilastus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 157.

Type-species: *Campoplex rapax* Gravenhorst. Desig. by Viereck, 1914 from 27 species included by Thomson, 1887.

Anilasta Thomson, 1887. Opusc. Ent. 11: 1053, 1168. Emend.

Ecphoropsis Ashmead, 1900. Canad. Ent. 32: 368. N. name for *Ecphora* Foerster.

Sagaritopsis Hincks, 1944. Roy. Ent. Soc. London, Proc., Ser. B: Taxonomy 13: 36. N. name for *Sagaritis* Holmgren.

This very large genus is known from all zoogeographic regions. The genus is rather difficult taxonomically, and there are no usable works treating the species of any large country or other major geographic area. Most of the species occur in unforested habitats and many of them parasitize Noctuidae; a species exceptional to both generalizations is *C. pyralidis* Walley.

Taxonomy: Walley, 1927. *Canad. Ent.* 59: 227-231 (key to spp. in Canadian National Collection).

apicata (Viereck). Ont.

Sagaritis apicata Viereck, 1925; 1926. *Canad. Ent.* 57 (8): 200 (key); 58 (5): 128. ♀. In the 1926 portion of Viereck's revision as *S. apicatus*.

aprilis (Viereck). Conn., N. Y., N. J., n. Mich., w. Ont., S. Dak., s. B. C., w. Wash. Host: *Polia purpurissata* (Grt.), *Xylomyges dolosa* Grt., *Enargia decolor* (Wlk.).

Sagaritis aprilis Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey "Bul. 22: 263. ♂.

Sagaritis bigelowi Viereck, 1925; 1926. *Canad. Ent.* 57 (8): 198 (key); 58 (2): 33. ♀

Sagaritis citrinus Viereck, 1925; 1926. *Canad. Ent.* 57 (8): 200 (key); 58 (5): 123. ♀.

argentifrons (Cresson). Que. w. to s. B. C., s. to Va., Mo., s. Tex., Colo., and n. Calif. Host: *Agrotis ipsilon* (Hufn.), *Anicla infecta* (Ochs.), *Lacinipolia renigera* (Steph.), *Crambus mutabilis* Clem., *C. zeelus* Fern.

Mesoleptus dubitatus Cresson, 1864. *Ent. Soc. Phila.*, Proc. 3: 259. ♀. Formerly preocc. in *Limnerium* by Holmgren, 1860.

Mesoleptus argentifrons Cresson, 1864. *Ent. Soc. Phila.*, Proc. 3: 261. ♂.

Mesoleptus vicinus Cresson, 1864. *Ent. Soc. Phila.*, Proc. 3: 268. ♀.

Limnerium provancheri Dalla Torre, 1901. *Cat. Hym.*, v. 3, p. 102. N. name for *M. dubitatus* Cresson.

Sesioplex heliaeformis Viereck, 1925. *Canad. Ent.* 57 (7): 177 (key); 57 (12): 298. ♀.

Sagaritis strigosus Viereck, 1925; 1926. *Canad. Ent.* 57 (8): 199 (key); 58 (3): 73. ♂, ♀.

Sagaritis evansi Viereck, 1925; 1926. *Canad. Ent.* 57 (8): 199 (key); 58 (3): 74. ♀.

Sagaritis englishi Viereck, 1925; 1926. *Canad. Ent.* 57 (8): 199 (key); 58 (3): 75; 58 (5): 129. ♀. On p. 129 in the 1926 part of his revision Viereck made a correction to his 1925 key which makes it uncertain that the lectotype he selected in 1926 (p. 75) applies to the name validated in the 1925 key.

Sagaritis conspicuosus Viereck, 1925; 1926. *Canad. Ent.* 57 (8): 200 (key); 58(5): 123. ♂.

Sagaritis interruptus Viereck, 1925; 1926. *Canad. Ent.* 57 (8): 200 (key); 58 (5): 127, 129. ♂.

The lectotype selected (in effect) by Viereck in 1926 (p. 127) does not apply with certainty to the name validated in the 1925 key because of errors in the latter which were corrected in 1926 (p. 129).

atkinsoni (Viereck). Southeastern Man., s. Sask., s. Alta., n. Idaho, e. Wash., w. Oreg.

Sagaritis atkinsoni Viereck, 1925; 1926. *Canad. Ent.* 57 (8): 199 (key); 58 (2): 38; 58 (5): 129.

Sagaritis teulonensis Viereck, 1925; 1926. *Canad. Ent.* 57(8): 200 (key); 58 (5): 124, 129. ♂, ♀. The lectotype selected (in effect) by Viereck in 1926 (P. 124) does not apply with certainty to the name validated in the 1925 key because of errors in the latter which were corrected in 1926 (p. 129).

Biology: King and Atkinson, 1928. *Ent. Soc. Amer.*, Ann. 21: 173-174, 185.

atypicus (Viereck). Que., Ont., s. Alta.

Sagaritis atypicus Viereck, 1925; 1926. *Canad. Ent.* 57 (8): 198 (key); 58 (2): 36. ♀.

Sesioplex canadensis Cushman, 1930 (1929). U. S. Natl. Mus., Proc. 76 (25): 8. ♂, ♀.

australis (Viereck). Southern Sask., Wyo., and N. Mex., w. to s. B. C. and w. Oreg. Host:

Euzoa ochrogaster (Gn.).

Limnerium australis Viereck, 1903. *In* Skinner, *Amer. Ent. Soc.*, Trans. 29: 91. ♀.

banksi (Viereck). Northern Va.

Camptoplex banksi Viereck, 1921. *Psyche* 28: 72. ♀.

californica (Holmgren). Calif.

Sagaritis californica Holmgren, 1869 (1868). *Eug. Resa*, pt. 2 (Zool.), sect. 1 (Ins.), p. 418. ♂.

Taxonomy: Townes, 1961. *Ent. Soc. Wash.*, Proc. 63: 112 (note on type specimen).

chlorideae Uchida. Japan, India. Introduced in southern Ga. in 1965 and possibly Ariz. in 1968 (personal commun., J. R. Coulson, 1977), presumably without becoming established. Host: *Phthorimaea operculella* (Zell.)?, *Heliothis armiger* (Hbn.), *H. assulta* Gn. The target species for the release in Ga. was presumably either *Heliothis virescens* (F.), or *H. zea* (Bod.). In some literature the species was misidentified as *Campoletis "perdistinctus"* (Viereck).

Campoletis chlorideae Uchida, 1957. Kyushu Imp. Univ., Ent. Lab., Mushi 30: 29. ♂, ♀.

Taxonomy: Carlson, 1972. Ent. News 83: 77 (as Asian sp., probably undescribed). —Gupta, 1974. Oriental Insects 8: 112-115.

Biology: Gangrade, 1964. Ent. Soc. Amer., Ann. 57: 570-574.

clavata (Provancher). Que. s. to s.e. S. C., w. to n.e. Kans. Host: *Heliothis zea* (Bod.)?

Limneria clavata Provancher, 1875. Nat. Canad. 7: 148. "♀" = ♂.

Sagaritis conjunctiformis Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 262. ♂.

Sagaritis xanthotaenius Viereck, 1925; 1926. Canad. Ent. 57 (8): 198 (key); 58 (2): 37. ♀.

Sagaritis latus Viereck, 1925; 1926. Canad. Ent. 57 (8): 198 (key); 58 (2): 37. ♀.

Sagaritis hexagonalis Viereck, 1925; 1926. Canad. Ent. 57 (8): 199 (key); 58 (2): 37; 58 (5): 129. ♂. The lectotype selected (in effect) by Viereck in 1926 (p. 37) does not apply with certainty to the name validated in the 1925 key because of errors in the latter which were corrected in 1926 (p. 129).

Sagaritis beaulieuvi Viereck, 1925; 1926. Canad. Ent. 57 (8): 199 (key); 58 (2): 38. ♂.

Sagaritis basalis Viereck, 1925; 1926. Canad. Ent. 57 (8): 201 (key); 58 (5): 128. ♂, ♀.

Sagaritis garretti Viereck, 1925; 1926. Canad. Ent. 57 (8): 201 (key); 58 (5): 129. ♀.

Sagaritis nigriscapopus var. *rufitrochanteralis* Walley, 1927. Canad. Ent. 59: 232. ♀.

Taxonomy: Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 89 (sex of *clavata* syntypes stated to be male not "female"). —Gahan and Rohwer, 1917. Canad. Ent. 49: 433 (female "lectotype" incorrectly selected for *clavata*). —Barron, 1975. Nat. Canad. 102: 451-452 (valid lectotype selected for *clavata*).

clitellaria (Walley). Southern B. C.

Sagaritis clitellarius Walley, 1927. Canad. Ent. 59: 232. ♂.

compacta (Provancher). Southern B. C., w. Wash.

Limneria compacta Provancher, 1884. In Taylor, Canad. Ent. 16: 91. Nomen nudum.

Limneria compacta Provancher, 1885. Canad. Ent. 17: 116. ♀.

Sagaritis downsi Viereck, 1926. Canad. Ent. 58 (2): 36. [male].

Sagaritis downsi(!) Viereck, 1926. Canad. Ent. 58 (2): 36.

conjuncta (Cresson). Ill.

Mesoleptus conjunctus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 262. ♂, ♀.

distincta (Provancher). Que., N. H., N. Y., Ont., n. Ill., Minn., s. Sask., s. B. C. Host: *Catocala* sp.

Limneria distincta Provancher, 1882. Nat. Canad. 3: 365. ♀. Suppressed as a synonym of *C. tibiator* (Cresson) by Townes (1945); resurrected by Townes and Townes (1951).

Walkley (1958) and Barron (1975) regarded *distincta* as unavailable by virtue of having been replaced by *Cymodusa provancheri* Viereck (which see), but I do not believe they were correct. Walkley treated the name *provancheri* (Viereck) as the valid name for *C. distincta*, overlooking the fact that *provancheri* was preocc. in *Campoletis* by Dalla Torre, 1901.

Sagaritis apicalis Viereck, 1925; 1926. Canad. Ent. 57 (8): 198 (key); 58 (2): 36. ♂.

Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 626. —Townes and Townes, 1951. In Muesebeck et al., U. S. Dept. Agr., Agr. Monog. 2: 367. —Walkley, 1958. In Krombein et al., U. S. Dept. Agr., Agr. Monog. 2, sup. 1, p. 59, 60. —Barron, 1975. Nat. Canad. 102: 462.

diversa (Viereck). Southwestern Alta.

Sagaritis diversus Viereck, 1925; 1926. Canad. Ent. 57 (8): 198 (key); 58 (2): 33. ♀.

flavicincta (Ashmead). Mass. and s.e. Ont. w. to s.w. B. C., s. to central Fla., s. Tex., s. Ariz., and s. Calif., Mexico s. to Uruguay. Host: *Agrotis ipsilon* (Hufn.), *Dargida procincta* (Grt.), *Feltia subterranea* (F.), *Heliothis virescens* (F.), *H. zea* (Bod.), *Lacinipolia stricta*

- (Wlk.), *Pseudaletia unipuncta* (Haw.), *Spodoptera eridania* (Cram.), *S. frugiperda* (J. E. S.), *S. ornithogalli* (Gn.), *Trichoplusia ni* (Hbn.), *Manduca quinquemaculata* (Haw.), *Ostrinia nubilalis* (Hbn.), *Udea ribigalis* (Gn.), *Pieris rapae* (L.).
- Limneria flavicincta* Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 436. ♂.
- Limnerium perdistinctus* Viereck, 1905. Kans. Acad. Sci., Trans. 19: 304. ♀.
- Amorphota nocturna* Viereck, 1905. Kans. Acad. Sci., Trans. 19: 308. ♂.
- Limnerium (Camptolepis) prodeniae* Viereck, 1911. U. S. Natl. Mus., Proc. 40: 190. ♂, ♀.
- Sagaritis trochanteralis* Viereck, 1925; 1926. Canad. Ent. 57 (8): 199 (key); 58 (3): 75. ♀.
- Sagaritis twinii* Viereck, 1925; 1926. Canad. Ent. 57 (8): 200 (key); 58 (3): 72. ♂, ♀.
- Sagaritis modestus* Viereck, 1925; 1926. Canad. Ent. 57 (8): 201 (key); 58 (5): 126. ♂.
- Taxonomy:** Carlson, 1972. Ent. News 83: 75-82.
- Biology:** Luginbill, 1928. U. S. Dept. Agr., Tech. Bul. 34: 61-63 (as *dubitatus*, misdet.).
—Vickery, 1929. U. S. Dept. Agr., Tech. Bul. 138: 36-39 (as *dubitatus*, misdet.). —Wene, 1943. Jour. Econ. Ent. 36: 333-334 (as *provancheri*, misdet.). —Grayson, 1944. Jour. Econ. Ent. 37: 712-713 (as *provancheri*, misdet.).
- gorhami** (Viereck). N. S.
Sagaritis gorhami Viereck, 1925; 1926. Canad. Ent. 57 (8): 199 (key); 58 (3): 73. ♀.
- heliae** (Ashmead). Va. Host: *Epizuxis aemula* (Hbn.).
Limneria heliae Riley, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 158. Nomen nudum.
Limneria heliae Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 194. ♂.
- hoppingi** (Viereck). Southern B. C., w. Wash.
Sagaritis hoppingi Viereck, 1925; 1926. Canad. Ent. 57 (8): 199 (key); 58 (3): 76. ♂.
- imperfecta** (Viereck). Ont.?, Sask.
Sagaritis imperfectus Viereck, 1925; 1926. Canad. Ent. 57 (8): 200 (key); 58 (5): 127, 129. ♀.
The lectotype selected (in effect) by Viereck in 1926 (p. 127) does not apply with certainty to the name validated in the 1925 key because of errors in the latter which were corrected in 1926 (p. 129).
- incompleta** (Viereck). Southeastern Ont.
Sagaritis incompletus Viereck, 1925; 1926. Canad. Ent. 57 (8): 199 (key); 58 (3): 71. ♂.
- intermedia** (Viereck). Utah, s. B. C., Wash., w. Oreg., n. Calif. Host: *Neuronina* sp.?
Sagaritis intermedius Viereck, 1925; 1926. Canad. Ent. 57 (8): 198 (key); 58 (2): 34. ♂.
Sagaritis trackas Viereck, 1925; 1926. Canad. Ent. 57 (8): 199 (key); 58 (3): 72. ♂.
Sagaritis taylora Viereck, 1925; 1926. Canad. Ent. 57 (8): 201 (key); 58 (5): 126. ♀.
- julia** (Viereck). Southwestern Alta., s.w. Oreg., n.e. Calif. Host: *Choreutis balsamorhizella* Bsk., *C. silphiella* (Grt.).
Sagaritis julius Viereck, 1925; 1926. Canad. Ent. 57 (8): 200 (key); 58 (5): 125. ♂.
- Taxonomy:** Townes, 1945. Amer. Ent. Soc., Mem. 11: 627. —Carlson, 1972. Ent. News 83: 76-77.
- kingi** (Viereck). Southern Sask.
Sagaritis kingi Viereck, 1925; 1926. Canad. Ent. 57 (8): 200 (key); 58 (3): 77; 58 (5): 129. ♀.
- linearis** (Viereck). Southern Sask.
Sagaritis linearis Viereck, 1925; 1926. Canad. Ent. 57 (8): 200 (key); 58 (3): 76. ♂.
- lipomerus** (Viereck). Mass., N. Y., Pa., Ont., s. Sask., s. Alta.
Sagaritis lipomerus Viereck, 1925; 1926. Canad. Ent. 57 (8): 198 (key); 58 (2): 32. ♂, ♀.
Sagaritis rufiscapus Viereck, 1925; 1926. Canad. Ent. 57 (8): 199 (key); 58 (3): 75. ♂.
- longiceps** (Roman). Greenland; n.e. U. S. S. R.
Ephoropsis longiceps Roman, 1926 (1914). Acad. Imp. des Sci. St. Petersburg, Mem. (8) 29 (7): 13. ♂. The copy of Roman's paper in the file of the Systematic Entomology Laboratory is labeled in Roman's handwriting as "Received July 1926, A. Rn." The copy in the library of the U. S. Natl. Museum was received by the Museum on April 8, 1927.
- maia** (Viereck). Southern B. C.
Sagaritis maius Viereck, 1925; 1926. Canad. Ent. 57 (8): 200 (key); 58 (5): 125, 129. ♂. The lectotype selected (in effect) by Viereck in 1926 (p. 125) does not apply with certainty to

the name validated in the 1925 key because of errors in the latter which were corrected in 1926 (p. 129). Doubt also stems from the fact that the lectotype was collected in April.

media (Viereck). Ont.

Sagaritis medius Viereck, 1925; 1926. Canad. Ent. 57 (8): 198 (key); 58 (2): 34. ♀.

melanocerus (Viereck). Southern Ont.

Sagaritis melanocerus Viereck, 1925; 1926. Canad. Ent. 57 (8): 200 (key); 58 (5): 123. ♂.

melanomerus (Viereck). N. H. Known only from the lectotype, which was collected in the alpine region of Mt. Washington.

Sagaritis melanomerus Viereck, 1925; 1926. Canad. Ent. 57 (8): 200 (key); 58 (5): 122. ♂.

nigricoxa (Viereck). Southern Alta.

Sagaritis nigricoxus Viereck, 1925; 1926. Canad. Ent. 57 (8): 199 (key); 58 (3): 74. ♀.

nigripes (Cresson). Ill., Sask., Alta.

Mesoleptus nigripes Cresson, 1864. Ent. Soc. Phila., Proc. 3: 267. ♀.

Mesoleptus hostilis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 267. ♂.

nigriscaposa (Viereck). Southern Sask.

Sagaritis nigriscaposa Viereck, 1925; 1926. Canad. Ent. 57 (8): 201; 58 (5): 128. ♂.

oxylus (Cresson). Que. w. to w. Wash., s. to s. Fla., Okla., and w. Oreg. Host: *Achatodes zaeae* (Harris), *Bellura densa* (Wlk.), *B. obliqua* (Wlk.), *Epiglaea apicata* (Grt.), *Nephelodes emmedonia* f. *violens* Gn., *Oligia fractilinea* (Grt.), *Papaipema lysimachiae* Bird, *P. nebris* (Gn.), *Pseudaletia unipuncta* (Haw.), *Spodoptera frugiperda* (J. E. S.).

Mesoleptus oxylus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 262. ♂, ♀.

Limneria occidentalis Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 432. ♀.

Limneria nephelodis Riley, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 158. Nomen nudum.

Limneria nephelodis Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 194. ♂.

Limneria lawrencei Viereck, 1906. Amer. Ent. Soc., Trans. 32: 178. ♀.

Sagaritis ruficoxalis Viereck, 1916. Biol. Soc. Wash., Proc. 29: 170. ♂, ♀.

Sagaritis nigrisignatus Viereck, 1925; 1926. Canad. Ent. 57 (8): 199 (key); 58 (3): 71. ♂, ♀.

Sagaritis stramineiscapus Viereck, 1925; 1926. Canad. Ent. 57 (8): 201 (key); 58 (3): 126. ♀.

Biology: Lowry, 1927. N. H. Agr. Expt. Sta., Tech. Bul. 34: 22. —Beckwith and Driggers, 1928. N. J. Agr. Expt. Sta., Ann. Rpt. 48: 139. —Beckwith, 1929. N. Y. Ent. Soc., Jour. 37: 415. —Guppy, 1967. Canad. Ent. 99: 100-101.

pacifica (Walley). Western Wash., w. Oreg., n. Calif.

Sagaritis ruficus var. *pacificus* Walley, 1927. Canad. Ent. 59: 233, 234. ♂.

parassignata (Walley). Southeastern Sask.

Sagaritis parassignatus Walley, 1927. Canad. Ent. 59: 232. ♀.

patsuiketorum (Viereck). Maine w. to s. B. C., s. to w. N. C., n. Ala., N. Mex., n. Utah, and n.

Calif.; s. Mexico? Host: *Loxostege sticticalis* (L.), *Phlyctaenia coronata tertialis* (Gn.), *P. extricalis* (Gn.), *Udea rubigalis* (Gn.), *Grapholitha molesta* (Bsk.). In the U. S. Natl.

Museum collection there is a male specimen labeled as being collected in Oaxaca, Mexico by L. O. Howard. It remains to be seen whether I have correctly identified this specimen and whether it is correctly labeled.

Sagaritis patsuiketorum Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 262. ♀.

Sagaritis unicolor Viereck, 1925; 1926. Canad. Ent. 57 (8): 198 (key); 58 (2): 33. ♂, ♀.

Sagaritis lipopus Viereck, 1925; 1926. Canad. Ent. 57 (8): 198 (key); 58 (2): 35. ♀.

Sagaritis cingulatus Viereck, 1925; 1926. Canad. Ent. 57 (8): 198 (key); 58 (2): 35. ♂.

Sagaritis melanosomus Viereck, 1925; 1926. Canad. Ent. 57 (8): 199 (key); 58 (3): 71. ♀.

plena (Provancher). Que., s.w. Alta.

Limneria plena Provancher, 1875. Nat. Canad. 7: 146. ♀.

Sagaritis chrystali Viereck, 1925. Canad. Ent. 57 (8): 200 (key); 58 (3): 77. ♀.

Taxonomy: Barron, 1975. Nat. Canad. 102: 532-533 (*plena* holotype).

pyralidis Walley. Que. s. to e. S. C., w. to s. Sask. and n.w. Ark. Host: *Tetralopha aplastella*

Hulst, *Acrobasis* sp. on *Myrica*, *A. betulella* Hulst, *A. caryocorella* Rag., *A. comptoniella*

Hulst, *A. juglandis* (LeB.), *Jacoma nyssaecolella* (Dyar), *Meroptera pravella* (Grt.), *Nephoteryx subfuscella* (Rag.), *Salebriaria engeli* (Dyar), *Aristotelia* sp. *Campoletis pyralidis* Walley, 1970. *Canad. Ent.* 102: 1528. ♂, ♀.

Morphology: Finlayson, 1967. *Canad. Ent.* 102: 1257-1258 (as *Campoletis* n. sp.).

rufosignata (Viereck). Southern Ont.

Sagaritis rufosignatus Viereck, 1925; 1926. *Canad. Ent.* 57 (8): 198 (key); 58 (2): 34. ♂.

septentrionalis (Viereck). Mont., s.w. Alta., and s. B. C., s. to central Utah, w. Nev., and n.

Calif. Host: *Euxoa pallipennis* Sm.

Sagaritis septentrionalis Viereck, 1925; 1926. *Canad. Ent.* 57 (8): 200 (key); 58 (3): 76. ♀.

Sagaritis aequalis Viereck, 1925; 1926. *Canad. Ent.* 57 (8): 200 (key); 58 (5): 122, 129. ♂, ♀.

The correction made by Viereck in 1926 (p. 129) suggests that the lectotype which he in effect selected in 1926 (p. 124) for *S. laevis* Viereck would apply to the name *aequalis* as validated in the 1925 key.

Sagaritis laevis Viereck, 1925; 1926. *Canad. Ent.* 57 (8): 200 (key); 58 (5): 124, 129. ♂, ♀.

The correction made by Viereck in 1926 (p. 129) suggests that the lectotype which he in effect selected in 1926 (p. 122) for *S. aequalis* Viereck would apply to the name *laevis* as validated in the 1925 key.

Sagaritis ruficrus Viereck, 1925; 1926. *Canad. Ent.* 57 (8): 201 (key); 58 (5): 127. ♂.

Sagaritis approximalis Walley, 1927. *Canad. Ent.* 59: 231. ♂.

Sagaritis vierecki Walley, 1927. *Canad. Ent.* 59: 233. ♂, ♀.

signata (Viereck). Southern B. C.

Sagaritis signatus Viereck, 1925; 1926. *Canad. Ent.* 57 (8): 199 (key); 58 (3): 72. ♀.

sonorensis (Cameron). Md., s. Ill., n. Colo., s.w. Alta., s.e. Wash., and n.w. Oreg., s. to e. S. C., n.

Fla., s. Tex., s. Ariz., and s. Calif.; Cuba and Mexico s. to Peru. Host: *Autographa californica* (Spey.), *Heliothis phloxiphaga* (G. and R.), *H. virescens* (F.), *H. zea* (Bod.), *Peridroma saucia* (Hbn.), *Plathypena scabra* (F.), *Spodoptera exigua* (Hbn.), *Trichoplusia ni* (Hbn.), *Anthracis midea* (Hbn.). In the earlier biological papers cited below, *sonorensis* was misidentified as *perdistincta*, now a synonym of *flavicincta* (which see). My 1972 paper was directed at eliminating the taxonomic confusion of *sonorensis* with *flavicincta*, but the unusual pattern of the distribution known for *sonorensis* in North America and the existence in the Canadian National Collection of a series of *sonorensis* specimens labeled as collected at an altitude of 7500 ft. (at Sunshine Lodge) in Banff Natl. Park, Alta. seem to indicate the need for further taxonomic study in connection with studies of host relations, etc.

Limneria sonorensis Cameron, 1886. *Biol. Cent.-Amer., Hym.*, v. 1, p. 307. [female].

Limnerium (Angitia) websteri Viereck, 1910. *U. S. Natl. Mus., Proc.* 38: 382. ♀.

Taxonomy: Carlson, 1972. *Ent. News* 83: 75-82.

Biology: Noble and Graham, 1966. *Jour. Econ. Ent.* 59: 1118-1120. —Lingren, Guerra, Nickelsen, and White, 1970. *Jour. Econ. Ent.* 63: 518-522. —Hollingsworth, Harstack, and Lingren, 1970. *Jour. Econ. Ent.* 63: 1758-1761. —Hoelscher and Vinson, 1971. *Ent. Soc. Amer., Ann.* 64: 1373-1376. —Lingren and Noble, 1972. *Jour. Econ. Ent.* 65: 104-107. —Guillot and Vinson, 1972. *Nature [London]* 235: 169-170. —Vinson, 1972. *Ent. Soc. Amer., Ann.* 65: 229-236. —Vinson, 1972. *Environmental Ent.* 1: 409-413. —Vinson, 1972. *Jour. Insect Physiol.* 18: 1501-1516. —Norton, Vinson, and Thurston, 1974. *Electron Micros. Soc. Amer., Proc.* 32d: 140-141. —Wilson, Ridgway, and Vinson, 1974. *Ent. Soc. Amer., Ann.* 67: 271-274. —Norton and Vinson, 1974. *Internatl. Jour. Insect Morph. and Embryol.* 3: 305-306, 309-311, 314-315. —Wilson and Ridgway, 1974. *Environmental Ent.* 3: 714-717. (cocoon spinning). —Schmidt, 1974. *Ent. Soc. Amer., Ann.* 67: 835-844. —Wilson and Ridgway, 1975. *Ent. Soc. Amer., Ann.* 68: 191-196. —Norton, Vinson, and Stoltz, 1975. *Cell Tissue Res.* 162: 195-208. —Vinson, 1975. *In Price, Evol. Strat. Paras. Insects and Mites*, p. 29, 30, 31, 32, 34. —Dahlman and Vinson, 1976. *Ent. Soc. Amer., Ann.* 69: 523-524. —Lingren, 1977. *Environmental Ent.* 6: 72-76.

striatipes (Ashmead). N. H., N. Mex. The type-locality (not mentioned by Ashmead) is "Top of [Las Vegas] range, [N. Mex.], betw[een] Sapello and Pecos Rivers, Ab[ou]t 11,000 ft.

[elevation]. Townes and Townes (1951) indicated that the species is also known from Mt. Madison, N. H.

Limneria striatipes Ashmead, 1901. Psyche 9: 148. ♀ (♂ misdet.).

taeniolata (Viereck). N. Mex. Known only from the holotype, which was collected at Beulah.

Limnerium taeniolata Viereck, 1903. In Skinner, Amer. Ent. Soc., Trans. 29: 92. ♂.

tibialis (Viereck). Southern B. C., w. Wash.

Sagaritis tibialis Viereck, 1925; 1926. Canad. Ent. 57 (8): 200 (key); 58 (3): 77. ♀.

tibiator (Cresson). Northern N. Y. s. to s.w. S. C. and n. Ala., w. to s.e. Iowa and n.e. Kans.

Host: *Rhodophora gaurae* (J. E. S.), geometrid on apple?

Mesoleptus tibiator Cresson, 1864. Ent. Soc. Phila., Proc. 3: 259. ♂.

Ischnoscopus taeniatus Viereck, 1905. Kans. Acad. Sci., Trans. 19: 305. ♀.

yakutatensis (Ashmead). Southeastern Alaska.

Ischnoscopus yakutatensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 236. ♂, ♀.

Genus CALLIDORA Foerster

Pantropa Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 155.

Type-species: *Limneria albovincta* Holmgren. By subsequent monotypy from inclusion by Townes, 1970. The designation of Townes (1970) reads: "(*Callidora annellata* Thomson) = *albovincta* Holmgren." Article 68 (c) of the International Code of Zoological Nomenclature indicates that *albovincta* is the type-species by monotypy in spite of the intentions of Townes, which apparently were that it be *annellata*.

Callidora Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 157.

Type-species: *Callidora annellata* Thomson. Desig. by Viereck, 1914 from two species included by Thomson, 1887. The type-species is regarded as a synonym of *C. albovincta* (Holmgren).

Neocallidora Ozols, 1966. Latv. Ent. 11: 49.

Type-species: *Campoplex analis* Gravenhorst. Monotypic and orig. desig.

This is a small Holarctic and Oriental genus. No hosts are known.

Revision: Tigner, 1969. Mich. Ent. 2: 36-39 (spp. of world).

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 165-166.

surata Tigner. Central Tenn., s.w. N. Dak., central S. Dak., s. Tex., e. Wyo., s. Alta., n. Utah.

Callidora surata Tigner, 1969. Mich. Ent. 2: 39. ♂, ♀.

tegularis Tigner. Northeastern Pa., s.e. Mich.

Callidora tegularis Tigner, 1969. Mich. Ent. 2: 38. ♂, ♀.

Genus CYMODUSA Holmgren

Cymodusa Holmgren, 1859 (1858). Svenska Vetensk.-Akad., Ofvers. af ... Forhandl. 15: 325.

Type-species: *Cymodusa leucocera* Holmgren. Monotypic and orig. desig.

Apparently the name *leucocera* is validated in this work by virtue of article 16 (a) (vi) of the Internatl. Code of Zool. Nomenclature, even though Holmgren indicated that he knew five Scandinavian species of *Cymodusa*.

Thersitia Schmiedeknecht, 1907. Hym. Mitteleuropas, p. 598.

Type-species: *Thersitia egregia* Schmiedeknecht. Monotypic. The type-species is regarded as a synonym of *leucocera* Holmgren.

This is a Neotropical, Holarctic, and Oriental genus of moderate size.

Revision: Gupta and Gupta, 1974. Oriental Insects 8: 1-14 (Oriental spp.).

distincta (Cresson). Maine w. to s. B. C., s. to n. Ga., n.e. Kans., Colo., and w. Oreg.

Mesoleptus subrubidus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 264. ♂.

Mesoleptus distinctus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 266. ♀.

Limnerium vigilis Viereck, 1906. Amer. Ent. Soc., Trans. 32: 179. ♂.

Idechthis biconjunctus Viereck, 1906. Amer. Ent. Soc., Trans. 32: 180. ♂.

Campoplex (Nepiera) amasecontorum Viereck, 1917 (1916). Conn. State Geol. and Nat.

History Survey Bul. 22: 266. ♂.

Cymodusa plesius Viereck, 1925; 1926. Canad. Ent. 57 (7): 180 (key); 58 (1): 4. ♀.

melanocera Viereck. N. H. w. to s. B. C., s. to w. N. C. and s. Idaho.

Cymodusa melanocera Viereck, 1925; 1926. Canad. Ent. 57 (7): 180 (key); 58 (1): 3. ♂.

Cymodusa gracilicornis Viereck, 1925; 1926. Canad. Ent. 57 (7): 180 (key); 58 (1): 4. ♀.

nigripes (Viereck). N. B., N. S.

Neonortonia nigripes Viereck, 1925. Canad. Ent. 57 (7): 179 (key); 57 (12): 300. ♂.

Formerly preocc. in *Campoplex* by Gravenhorst, 1829 and Brulle, 1846.

Neonortonia laevisissima Viereck, 1925. Canad. Ent. 57 (7): 179 (key); 57 (12): 301. ♂.

Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 598 (syn. and first revisor choice of names). —Walkley, 1958. In Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2, sup. 1, p. 59 (*uigripes* suppressed because of secondary homonymy). —Walkley, 1967. In Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2, sup. 2, p. 201 (transfer to *Cymodusa* as *laevisissima*).

partis (Viereck). Que.

Campoplex (Diadegma) partis Viereck, 1925; 1926. Canad. Ent. 57 (9): 227 (key); 58 (11): 280. ♂.

provancheri Viereck. N. S.

Cymodusa provancheri Viereck, 1925; 1926. Canad. Ent. 57 (7): 180 (key); 58 (1): 4. ♀. In 1926 (p. 4) Viereck, in effect, selected a lectotype for *provancheri* and, at the same place, wrote: "(*Limneria*) *Cymodusa provancheri* new name = *Cymodusa distincta* Provancher, not Cresson." Walkley (1958) treated *provancheri* as a replacement name for *Limneria distincta* Provancher, and Barron (1975) concurred with Walkley, stating that "Viereck's designation of a holotype for *provancheri* is disallowed (Int. Code Zool. Nom. art. 72 (d))." Article 72 (d), however, has no bearing on this case because Viereck did not originally (i.e. 1925, p. 180) propose *provancheri* expressly as a replacement for any prior name. Moreover, my knowledge of Viereck's idiosyncrasies leads me to believe that he most likely proposed the name *provancheri* for what he thought to be Provancher's misidentification of *distincta* (Cresson). Viereck frequently used the term "new name" in that context. Although Viereck was very inconsistent, I regard it as unlikely that he would have regarded a specimen that Provancher never saw as being the holotype if he had intended the name *provancheri* to be a replacement name (cf. Viereck's proposal of the replacement name *Ameloclonus taeniopus*). Also see discussion under *Campoletis distincta* (Provancher).

Taxonomy: Walkley, 1958. In Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2, sup. 1, p. 59, 60. —Barron, 1975. Nat. Canad. 102: 462.

Genus CYMODUSOPSIS Viereck

Cymodusopsis Viereck, 1912. U. S. Natl. Mus., Proc. 43: 588.

Type-species: *Cymodusopsis aristoteliae* Viereck. Monotypic and orig. desig.

This is a small Neotropical and Nearctic genus.

aristoteliae Viereck. N. J., Mo., S. Dak., n.e. Kans. Host: *Aristotelia pudibundella* (Zell.).

Cymodusopsis aristoteliae Viereck, 1912. U. S. Natl. Mus., Proc. 43: 588. ♂, ♀.

Genus SPUDASTICA Foerster

Spudastica Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 155.

Type-species: *Spudastica petiolaris* Thomson. By-subsequent monotypy from inclusion by Thomson, 1887. The type-species is regarded as a synonym of *kriechbaumeri* (Bridgman).

Townes (1970) indicated that this Holarctic genus appears to be represented by one species which has a number of geographic variants. However, there appear to be at least two distinct species in North America. I have seen specimens from Mass., N. J., Md., and Va. which appear to represent an undescribed species which apparently occurs in swampy areas. *S. kriechbaumeri* has been reared from species of the noctuid genus *Orthosia*.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 169.

canadensis Walley. Que., Ont., Colo. Ecology: A specimen which seems to agree with Walley's description of *canadensis* was reared from its cocoon which was collected under a stone at Garden of the Gods, El Paso Co., Colo.
Spudastica canadensis Walley, 1944. *Canad. Ent.* 76: 157. ♂, ♀.

Genus MELOBORIS Holmgren

- Meloboris* Holmgren, 1859 (1858). Svenska Vetensk.-Akad., Ofvers. af ... Forhandl. 15: 326.
 Type-species: *Meloboris gracilis* Holmgren. Monotypic. Apparently the name *gracilis* is validated in this work by virtue of article 16 (a) (vi) of the Internatl. Code of Zool. Nomenclature, even though Holmgren indicated that he knew three Scandinavian species of *Meloboris*.
Pseudocymodusa Habermehl, 1922. *Konowia* 1: 105.
 Type-species: *Cymodusa elachistae* Brischke. Monotypic. The type-species is regarded as a synonym of *M. alternans* (Gravenhorst).
Anoixis Townes, 1970 (1969). *Amer. Ent. Inst., Mem.* 13: 180. N. syn.
 Type-species: *Anoixis alophus* Townes. Monotypic and orig. desig.

This is a small Holarctic genus. There are a number of undescribed Nearctic species. Apparently there are no host records. Townes (1965, 1970) treated *Nepiera* as a synonym of *Meloboris*, but I believe *Nepiera* is sufficiently different from *Meloboris* to warrant separation of the two.

Taxonomy: Townes, 1965. *Polskie Pismo Ent.* 35: 413-414. —Townes, 1970 (1969). *Amer. Ent. Inst., Mem.* 13: 172-174, 180-181. —Horstmann, 1970. *Bayer. Ent., Nachrichtenbl.* 19: 81-82, 83.

- alopha* (Townes), n. comb. N. H., R. I., s. Ont., Mich. I have seen a pair of specimens in the Canadian Natl. Collection which have the nervellus intercepted by the discoidella (cf. Townes' fig. 170).
Anoixis alophus Townes, 1970 (1969). *Amer. Ent. Inst., Mem.* 13: 180. ♂, ♀.

Genus NEPIERA Foerster

- Asinamora* Foerster, 1868. *Naturh. Ver. Rheinlande, Verh.* 25: 155. N. syn.
 Type-species: *Ichneumon collector* Thunberg. By subsequent monotypy from inclusion by Townes, Momoi, and Townes, 1965. The designation of Townes, Momoi, and Townes (1965) reads: "(*Limneria concinna* Holmgren) = *collector* Thunberg." Article 68 (c) of the Internatl. Code of Zool. Nomenclature indicates that *collector* is the type-species by monotypy in spite of the intentions of Townes, Momoi, and Townes, which presumably were that it be *concinna*.
Nepiera Foerster, 1868. *Naturh. Ver. Rheinlande, Verh.* 25: 156.
 Type-species: *Limneria concinna* Holmgren. By subsequent monotypy from inclusion by Thomson, 1887. The type-species is regarded as a synonym of *N. collector* (Thunberg).

This is a genus of small to moderate size. It is known to me only from the Neotropic, Holarctic, and Australian Regions, but the placement of the Ethiopian species *Limneria helminda* Holmgren in *Meloboris* by Townes and Townes (1973) would presumably indicate that *helminda* is a species of *Nepiera*.

Taxonomy: Townes, 1965. *Polskie Pismo Ent.* 35: 414. —Townes, Momoi, and Townes, 1965. *Amer. Ent. Inst., Mem.* 5: 291. —Horstmann, 1970. *Bayer. Ent., Nachrichtenbl.* 19: 81-82, 83. —Townes and Townes, 1973. *Amer. Ent. Inst., Mem.* 19: 155.

- basilaris* (Provancher). Que.

Limneria basilaris Provancher, 1875. *Nat. Canad.* 7: 147. "♂" = ♀. The specimen indicated as being the lectotype by Gahan and Rohwer (1917) and the holotype by Barron (1975) was incorrectly stated by them as being a male. My notes on the holotype indicate that it is a female of the genus *Nepiera*, and that it is similar to and perhaps conspecific with *benevola* Gahan. My notes also indicate that the male in the Provancher collection does not have the hind coxa black; it thereby fails to agree with Provancher's original description. It represents an undescribed species of the genus *Meloboris*. In the U. S.

Natl. Museum collection there is a female specimen, apparently conspecific with the latter, which was identified as "*Nepiera basilaris*" by Dr. H. K. Townes in 1942. I presume that the distribution given for *basilaris* by Townes and Townes (1951) pertains to that undescribed species of *Meloboris*.

benevola Gahan. Southern N. Mex., n. Utah, n.e. Oreg. Host: *Cotias eurytheme* Bdv.

Nepiera benevola Gahan, 1914. U. S. Natl. Mus., Proc. 48: 157. ♂, ♀.

curticauda (Viereck). Southern B. C., w. Wash., w. Oreg., n. Calif.

Campoplex (Diadegma) curticauda Viereck, 1925; 1926. Canad. Ent. 57 (8): 227 (key); 58 (11): 280. ♀.

fuscifemora Graf. Western Wash. s. to s. Calif.; central Mexico. Host: *Phthorimaea operculella* (Zell.), *Argyrotaenia citrana* (Fern.), *Heliothis zea* (Bod.), *Peridroma saucia* (Hbn.), *Spodoptera exigua* (Hbn.), *Tricheplusia ni* (Hbn.), *Cynthia cardui* (L.).

Nepeira (!) *benevola* var. *fuscifemora* Graf, 1917 (Feb.). U. S. Dept. Agr., Bul. 427: 46, 47. ♀. In the first line of the paragraph on p. 46 headed "*Nepeira benevola* var. *fuscifemora* Cushman." Graf said: "this parasite (fig. 44)." Figure 44 is on p. 47, and the fact that the name in its legend is "*Nepeira benevola*" (omitting var. *fuscifemora*) is of no significance. Walkley (1966) attempted to show that Graf figured *benevola* rather than *fuscifemora* because "the figure shows the hind femora with the apices and bases dark," which she asserted "is true of *benevola* but not of *fuscifemora*." Walkley failed to observe that Graf figured the inner surfaces of the femora, not the outer ones, and the pattern of coloration shown in Graf's figure is altogether typical for the inner femoral surfaces of *fuscifemora*, but has not been observed by me in specimens of *benevola*.

Nepiera benevola var. *fuscifemora* Gahan, 1917 (May). U. S. Natl. Mus., Proc. 53: 208. ♂, ♀. Preocc. by Graf, 1917 (Feb.).

Taxonomy: Walkley, 1966. Ent. Soc. Wash., Proc. 68: 156.

marginata (Provancher). Que. w. to w. Wash., s. to w. N. C., Mo., s. N. Mex., and s. Calif. Host:

Actebia fennica (Tausch.), *Graphiphora smithi* (Snell.), *Pseudaletia unipuncta* (Haw.), *Cynthia cardui* (L.), *Vanessa atalanta* (L.), *Solenobia* sp.

Campoplex marginatus Provancher, 1874. Nat. Canad. 6: 146. ♂, ♀.

Limneria brevicauda Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym. p. 88. ♀.

Limnerium brevicaudum Dalla Torre, 1901. Cat. Hym., v. 3, p. 91. Emend.

Campoplex (Ameloctonus) intimus Viereck, 1925; 1926. Canad. Ent. 57 (9): 224 (key); 58 (10): 260. ♀.

Meloboris brevicauda Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 281. Nomen nudum.

Taxonomy: Gahan and Rohwer, 1917; 1918. Canad. Ent. 49: 433; 50: 29 (Provancher type specimens). —Barron, 1975. Nat. Canad. 102: 435, 504 (Provancher type specimens).

Biology: Guppy, 1961; 1967. Canad. Ent. 93: 569; 99: 96, 100.

oblonga (Viereck). Ont., n.w. Mich. Host: *Ostrinia nubilalis* (Hbn.).

Campoplex (Ameloctonus) oblongus Viereck, 1925; 1926. Canad. Ent. 57 (9): 224 (key); 58 (10): 260. ♀.

unica (Viereck). Southeastern Ont.

Angitia (Dioctes) unicus Viereck, 1926. Canad. Ent. 58 (7): 182. ♂.

Genus PHOBOCAMPE Foerster

Hypotherutes Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 156.

Type-species: *Hypotherutes* (!) *geometrae* Ashmead. By subsequent monotypy from inclusion by Ashmead, 1898.

Phobocampe Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 156.

Type-species: *Campoplex crassiusculus* Gravenhorst. Desig. by Viereck, 1914 from eight species included by Thomson, 1887.

Phobocampa Thomson, 1887. Opusc. Ent. 11: 1120. Emend.

This is a Neotropical, Holarctic, and Oriental genus of moderate size. It is hoped that completion of the task of preparing the present work will enable me to soon finish a long dormant revision of the Nearctic species. My partially completed manuscript treats 21 Nearctic species (including

one not indigenous), but several years ago I received specimens of one or two additional species. The number of Palearctic species appears to be somewhat smaller. The small amount of Neotropical material I have seen included four species.

Most species normally parasitize only macrolepidoptera which do not conceal themselves when feeding. Many of the new host records which are given here are from specimens deposited in the Canadian National Collection by the Canadian Forest Insect Survey.

Taxonomy: Finlayson, 1975. Ent. Soc. Canada, Mem. 94: 56-62 (final-instar larvae).

Morphology: Finlayson, 1964. Canad. Ent. 96: 1155-1158 (caudal appendages of some final-instar larvae).

bicingulata bicingulata (Gravenhorst). Newfoundland (Labrador), s.w. Alta., w. N. W. T., Yukon, n.w. B. C., interior Alaska; n.w. Asia (U. S. S. R.), Europe. Specimens agreeing in coloration with this subspecies also occur in southern B. C. (as do intermediate specimens), but because they are not the preponderant form there, southern B. C. is treated as being within the range of the subspecies *bicingulatus vernalis* (Viereck). An undescribed subspecies is known from Colo., N. Mex., and Ariz., and *bicingulata nipponensis* Momoi is known from Japan.

Campoplex bicingulatus Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 527. ♂, ♀.

Phobocampe bicingulata f. *ruficoxa* Aubert, 1962. Rev. Franc. d'Ent. 29: 146. ♂, ♀. N. syn.

bicingulata vernalis (Viereck), n. status. N. S. w. to n.e. Alta. and s. B. C., s. to s.w. S. C., n. Ala., e. Nebr., s. Sask., s.e. Alta., and s. Calif. Ecology: The only rearings have been from hosts (mostly Noctuidae) feeding on trees, but it is presumed that these rearings were from ecotones between forest and open areas; the habitat of *b. vernalis* appears to tend more toward the latter. The fact that *b. vernalis* is by far our most commonly collected form of *Phobocampe* appears to relate in part to the fact that it occurs in open weedy or grassy areas. Host: *Anomogyna* sp., *Lithophane* sp., *Palthis angularis* (Hbn.), *Syngrapha rectangularis nargenta* (Ottol.), *Ichthyura* sp., *Eupithecia fletcherata* Tay.

Campoplex (Hypotherutes) vernalis Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 264. ♀. Incorrectly suppressed as a synonym of *elyi* (Viereck) by Townes and Townes (1951).

Campoplex (Hyposoter) stenus Viereck, 1925; 1926. Canad. Ent. 57 (8): 204 (key); 58 (9): 220. ♂.

Campoplex (Ameloctonus) speciosus Viereck, 1925; 1926. Canad. Ent. 57 (9): 223 (key); 58 (10): 257. ♀.

Taxonomy: Townes and Townes, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 376.

clisiocampae (Weed). N. S. w. to central Alta. and s. B. C., s. to n.w. S. C., n.w. Ark., and n. Calif. Host: *Malacosoma americanum* (F.), *M. californicum* pluviale (Dyar), *M. disstria* Hbn., *Datana ministra* (Drury), *D. perspicua* (G. and R.), *Heterocampa* sp., *Schizura concinna* (J. E. S.), *S. ipomeae* (Dblly.), *S. semirufescens* (Wlk.), *S. unicornis* (J. E. S.), *Symmerista canicosta* Franc., *Paonias* sp., *Smerinthus jamaicensis* (Drury), *Sphinx* sp., *Operophtera brumata* (L.), *Actias luna* (L.). Specimens reared from *Operophtera brumata* which I have seen were abnormal, and it seems unlikely that it is a suitable host for *clisiocampae*.

Ameloctonus clisiocampae Weed, 1903. In Fiske, N. H. Agr. Expt. Sta. Tech. Bul. 6: 230. ♂, ♀.

Campoplex (Ameloctonus) congeneris Viereck, 1925; 1926. Canad. Ent. 57 (9): 223 (key); 58 (10): 259. ♀. N. syn.

Campoplex (Ameloctonus) certus Viereck, 1925; 1926. Canad. Ent. 57 (9): 223 (key); 58 (10): 257. ♀. N. syn.

Biology: Fiske, 1903. N. H. Agr. Expt. Sta. Tech. Bul. 6: 188, 206-208, 223, 226.

confusa (Thomson). N. B. w. to n.w. B. C., s. to n.w. Pa., Ohio, s. Sask., s. Alta., and n. Calif.; Europe. Host: *Nymphalis antiopa* (L.), *Polygonia faunus* (Ed.), *P. interrogationis* (F.), *P. satyrus* (Ed.).

Phobocampa confusa Thomson, 1887. Opusc. Ent. 11: 1122. ♀

elyi (Viereck). Newfoundland (s. Labrador) w. to n. B. C., s. to e. and n.w. S. C., e. Nebr., Colo., and n. Calif. Host: *Semiothisa* sp. on *Larix*, *S.* sp. on spruce and fir, *S. bicolorata* (F.), *S. bisignata* (Wlk.), *S. "granitata"* auct., *S. oweni* (Swett), *S. sexmaculata* (Pack.), *Lapara bombycoides* Wlk.

Hypotherentes elyi Viereck, 1912. U. S. Natl. Mus., Proc. 43: 590. ♀.

flavipes (Provancher). Que. w. to e.-central B. C., s. to n.w. S. C., Mich., s. Man., s. Sask.; s. Alta., and s. B. C. Host: *Alsophila pomataria* (Harris), *Phigalea titea* (Cram.), *Protoparmia porcellaria* (Gn.), *Dasychira* sp., *D. vagans* (B. and McD.)?, *Amphypyra pyramidoides* Gn., *Catocala* sp., noctuid, *Orthosia revicta* (Morr.), *Zale* sp.

Limneria flavipes Provancher, 1874. Nat. Canad. 6: 148. ♂.

Campoplex (*Hypotherentes*) *acceptus* Viereck, 1925; 1926. Canad. Ent. 57 (8): 204 (key); 58 (9): 224. ♀.

geometrae (Ashmead). N. S. w. to s. B. C., s. to n. Ga., n. Ala., n.e. Kans., w. S. Dak. and n.e. Calif. Host: *Alsophila pomataria* (Harris), *Biston betularia cognataria* (Gn.), *Caripeta divisata* Wlk., *Erranis tiliaria tiliaria* (Harris), *E. tiliaria vancouverensis* Hulst, *Palaearctia vernata* (Pack.). This species has been reared more frequently from *Erranis tiliaria* than from all other hosts combined.

Hypotherentes (!) *geometrae* Ashmead, 1898. In Dimmock and Ashmead, Ent. Soc. Wash., Proc. 4: 167. ♂.

Campoplex (*Hypotherentes*) *concisus* Viereck, 1925; 1926. Canad. Ent. 57 (8): 204 (key); 58 (9): 224. ♂, ♀.

Campoplex (*Ischnoscopus*) *angustus* Viereck, 1925; 1926. Canad. Ent. 57 (9): 223 (key); 58 (8): 198. ♀.

largo (Viereck), revised status. Que. w. to s. B. C., s. to w. N. C., Colo., and w. Oreg. Host: *Trichoptilus lobidactylus* (Fitch). Suppressed as a synonym of *geometrae* (Ashmead) by Townes (1945).

Campoplex (*Ischnoscopus*) *largo* Viereck, 1925; 1926. Canad. Ent. 57 (9): 223 (key); 58 (8): 198. ♀.

Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 647.

pallida (Cushman). Mass., Conn., N. Y., N. J., s.e. Pa., Md. Host: *Heterocampa guttivitta* (Wlk.). *Callidora pallida* Cushman, 1922. U. S. Natl. Mus., Proc. 60: 20. ♀.

pallipes (Provancher). Que. w. to n.w. B. C., s. to e. N. C., Iowa, s. Man., N. Mex., Ariz., and n. Calif. Host: Noctuid, *Syngrapha* sp., *S. alia interalia* (Ottol.), *S. rectangula nargenta* (Ottol.), *S. selecta* (Wlk.), *Orygia antiqua* (L.), *O. definita* (Pack.), *O. leucostigma* (J. E. S.), *O. pseudotsugata* McD.

Limneria pallipes Provancher, 1875. Nat. Canad. 7: 147. ♀.

Limnerium pallidipes Dalla Torre, 1901. Cat. Hym., v. 3, p. 101. Emend.

Campoplex (*Campoplex*) *arcanus* Viereck, 1925; 1926. Canad. Ent. 57 (9): 226 (key); 58 (6): 146. ♀.

tempestiva (Holmgren). Europe. Introduced in N. S. in 1955, 1957, 1961, and 1962 without becoming established. Host: *Operophtera brumata* (L.). The host cited was the target species for the introduction in N. S.; I have seen *tempestiva* specimens which were reared from other geometrid hosts, but none of the latter occur in North America. This species has frequently been misidentified as *crassiuscula* (Gravenhorst), the name under which the introductions in N. S. have been reported (e.g. McGugan and Coppel, 1962; Embree, 1971). Voucher material I have seen would appear to indicate that releases of *tempestiva* in N. S. were accompanied by releases of about equal numbers of an undescribed species of *Phobocampe* which I also know as a parasite of *Lymantria dispar* (L.) and which has been misidentified as *P. disparis* (Viereck) in Japan (see *unicincta* [Gravenhorst]).

Limneria tempestiva Holmgren, 1860 (1858). Svenska Vetensk.-Akad. Handl. (n. f.) 2 (8): 94. ♂, ♀.

Taxonomy: Aubert, 1972. Ent. Scand. 3: 149 (lectotype selection).

Biology: Wylie, 1960. Entomophaga 5: 120-121 (as "*crassiuscula*," presumably pertaining to spp., including *tempestiva*). — McGugan and Coppel, 1962. Commonwealth Inst. Biol.

Control, Tech. Commun. 2: 66, 171. —Embree, 1971. Commonwealth Inst. Biol. Control, Tech. Commun. 4: 170, 172, 174.

unicincta (Gravenhorst). Southeastern N. H., n.w. Mass., e.-central N. Y., n.e. Pa.; Europe.

Introduced. Host: *Lymantria dispar* (L.). The native range of this species extends into eastern Europe, but *unicincta* is not known to me from Asia or from any European locality east of Moscow, U. S. S. R. It has been recorded as a parasite of *Lymantria dispar* in Japan (as *Phobocampe disparis*), but those records pertain to the undescribed species referred to above in the discussion of *P. tempestiva*, and they probably also pertain in part to *Hyposoter vierecki* Townes. I suspect that *unicincta* does not occur in Japan. Muesebeck and Parker (1933) found *unicincta* to be a univoltine species, this fact apparently explaining the relative ease with which it was established in the United States.

Campoplex unicinctus Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 529. ♀ (♂ misdet.).

Lectotype here selected as the female in the Gravenhorst collection labeled as lectotype by Townes in 1964 and by me in 1969 and bearing Gravenhorst's small label marked "f" (see Townes, 1965, p. 405). In his description of *confusa*, Thomson (1887) indicated that he regarded Gravenhorst's description of the *C. unicinctus* male as applying to *confusa*, and Gravenhorst's description of the male seems to agree with Thomson's conclusion.

Hyposoter disparis Viereck, 1911. U. S. Natl. Mus., Proc. 40: 478. ♂, ♀. Lectotype here selected as the female in the U. S. Natl. Museum collection bearing Viereck's identification label and labels reading: "Gip Moth Lab No. 529 —07; 20 Aug.; Type No. 13074 U. S. N. M." Muesebeck and Parker (1933, p. 335) saw notes which indicated that the type locality is probably Kiev, U. S. S. R.

Taxonomy: Thomson, 1887. Opusc. Ent. 11: 1122. —Townes, 1965. Polskie Pismo Ent. 35: 403-407 (labeling in the Gravenhorst collection of Ichneumonidae).

Biology: Howard and Fiske, 1911. U. S. Dept. Agr., Bur. Ent., Bul. 91: 191. —Howard, 1914. Ent. Soc. Amer., Ann. 7: 87 (establishment). —Burgess and Crossman, 1929. U. S. Dept. Agr., Tech. Bul. 86: 49-54. —Muesebeck and Parker, 1933. Jour. Agr. Res. 46: 335-347. —Semevskiy, 1973. Ent. Obozr. 52: 44 (probably the sp. misdet. as *pulchella* [Thomson]).

Genus TRANOSEMA Foerster

Tranosema Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 157.

Type-species: *Tranosema arenicola* Thomson. Desig. by Viereck, 1914 from three species included by Thomson, 1887.

This is a small Holarctic genus. I know only two species, both of which have Holarctic distributions. The species *Limneria interrupta* Holmgren and *Campoplex (Angitia) rosanae* Viereck, which were placed in *Tranosema* by Townes (1970), are here regarded as species of *Diadegma* (*rosanae* being a synonym of *D. acronyctae* [Ashmead]).

Taxonomy: Walley, 1966. Canad. Ent. 98: 832-835 (treatment of the two identified spp. occurring in the Nearctic Region). —Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 176-177.

rostrale rostrale (Brischke). Que. w. to B. C., s. to n. N. Y., n. Mich., n. Minn., w. Mont., and w.

Wash.; Europe. Host: *Malacosoma californicum pluviale* Dyar?, *Aphelia alleniana* (Fern.), *Archips argyrospilus* (Wlk.), *A. rosanus* (L.), *Choristoneura fumiferana* (Clem.), *C. lambertiana* (Bsk.). *T. rostrale abulum* Momoi (1968) is known from Japan.

Limneria rostralis Brischke, 1880. Naturforsch. Gesell. Danzig, Schr. (n. f.) 4: 150. ♂, ♀.

Tranosema arenicola Thomson, 1887. Opusc. Ent. 11: 1138. ♂, ♀.

Tranosema arenicolum Dalla Torre, 1901. Cat. Hym., v. 3, p. 107. Emend.

Campoplex (Angitia) cacociae Viereck, 1924. Canad. Ent. 56: 76. ♀. N. syn.

Taxonomy: Momoi, 1968. Kontyu 36: 180-181. —Aubert, 1971. Soc. Ent. de Mulhouse, Bul. 27: 38 (syn.).

Biology: Zwoelfer, 1963. Ztschr. f. Angew. Ent. 51: 348. —Paradis and Leroux, 1965. Ent. Soc. Canada, Mem. 43: 49.

taeniopus (Viereck). Newfoundland (s. Labrador), P. E. I., Que., Ont., s.e. Alaska, s.e. B. C., w. Wash.; Europe.

Hypotherentes annulipes Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 236. ♀. Formerly *preocc.* in *Campoplex* by Cresson, 1864.

Campoplex (*Ameloctonus*) *taeniopus* Viereck, 1925. Canad. Ent. 57 (9): 223. N. name for *H. annulipes* Ashmead.

Genus DOLOPHRON Foerster

Dolophron Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 155.

Type-species: *Limneria pedella* Holmgren. Monotypically included and design. by Townes, 1970.

Townes (1970) said that this is a Holarctic genus including *pedella* and two undescribed species, one North American and one Japanese. *D. pedella* is the only species known to me; I have in the past identified as *Dolophron* a few Nearctic specimens which were sent to me for identification, but now regard those specimens as representing an unidentified species of *Synetaeris*.

pedella (Holmgren). Europe. Introduced in N. H. in 1931 without becoming established. Host: *Heterarthrus nemoratus* (Fall.). According to Dowden (1941) only 12 mated females were released in the attempt to establish *pedella* in N. H. on *H. nemoratus*.

Limneria pedella Holmgren, 1860 (1858). Svenska Vetensk.-Akad. Handl. (n. s.) 2 (8): 73. ♂, ♀.

Tranosema pedellum Dalla Torre, 1901. Hym. Cat., v. 3, p. 107. Emend.

Synetaeris albicoxis Schmiedeknecht, 1909. Opusc. Ichn., v. 4, p. 1670. ♀.

Taxonomy: Cushman, 1933. U. S. Natl. Mus., Proc. 82 (14): 16 (variation). —Hinz, 1964.

Entomophaga 9: 71 (lectotype selected). —Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 175 (syn.).

Biology: Dowden, 1941. U. S. Dept. Agr., Tech. Bul. 757: 8, 9, 11, 22-25, 51.

Genus SYNETAERIS Foerster

Synetaeris Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 155.

Type-species: *Synetaeris heteropus* Thomson. Design. by Viereck, 1914 from three species included by Thomson, 1887.

This is a small genus; it is known to me from the Holarctic and Ethiopian Regions. There are a number of unidentified or undescribed Nearctic species, some of which will probably prove to be Holarctic species that have already been described from Europe or Asia.

hyalina (Provancher), n. comb. Que.

Limneria hyalina Provancher, 1874. Nat. Canad. 6: 147. ♀ (♂ misdet.). Townes (1945) and Barron (1975) have applied this name to *Campoplex crassatus* (Viereck), contrary to the valid lectotype selection of Gahan and Rohwer (1918). Barron's rejection of the Gahan and Rohwer lectotype because of what he regarded as lack of agreement with the original description has no validity. Because Provancher stated that he had two females and one male, lack of agreement with the original description does not prove that the Gahan and Rohwer lectotype was not one of Provancher's syntypes. Gahan and Rohwer (1918) evidently thought the specimen agreed sufficiently well with the description to have been a syntype, and their lectotype selection stands as valid unless evidence of some other sort is found to prove that the specimen they selected was not a syntype.

Taxonomy: Gahan and Rohwer, 1918. Canad. Ent. 50: 28. —Townes, 1945. Amer. Ent. Soc., Mem. 11: 596-597. —Barron, 1975. Nat. Canad. 102: 484.

tenuifemur (Walley). N. B., Ont., e. B. C. Host: *Choristoneura fumiferana* (Clem.).

Synetaeris tenuifemur Walley, 1963. Canad. Ent. 95: 23. ♂, ♀.

Biology: Miller and Renault, 1963. Canad. Ent. 95: 24-28.

Genus PHILOSITUS Townes

Philositus Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 187.

Type-species: *Philositus enchophorus* Townes. Monotypic and orig. desig.

A single species is known.

enchophorus Townes. Maine, Conn., N. Y., N. J., Pa., s.e. Va., Ont. w. Wash. Host: *Tetralopha* sp., *T. aplastella* Clem., lepidopteran on poplar.

Philositus enchophorus Townes, 1970 (1969). Amer. Ent. Inst., Me. 13: 188. ♂, ♀.

Taxonomy: Barron and Bisdee, 1977. Ent. Soc. Amer., Ann. 70: 48-50 (final-instar larva).

Genus MACRUS Gravenhorst

Macrus Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 707.

Type-species: *Macrus filiventris* Gravenhorst. Desig. by Viereck, 1914.

Two species are known.

Revision: Horstmann, 1970. Bayer. Ent. Nachrichtenbl. 19: 80-81.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 178.

parvulus solenobiae (Ashmead). Maine, Mass., N. Y., N. J., Del., Mo. Host: *Solenobia walshella* Clem., *Grapholitha molesta* (Bsk.).

Limneria solenobiae Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 433. ♂.

Taxonomy: Horstmann, 1970. Bayer. Ent., Nachrichtenbl. 19: 80, 83 (status revised).

Genus ENYTUS Cameron

Dioctes Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 153. Preocc. by Menetries, 1849 and Reichenbach, 1850.

Type-species: *Campoplex exareolatus* Ratzeburg. Deig. by Viereck, 1914 from two species included by Schmiedeknecht, 1907. The type-species is regarded as a synonym of *E. apostata* (Gravenhorst).

Enytus Cameron, 1905. Invertebrata Pacifica 1: 132.

Type-species: *Enytus maculipes* Cameron. Monotypic.

Inareolata Ellinger and Sachtleben, 1928. Internatl. Corn Borer Invest., Sci. Rpts. 1: 117.

N. name for *Dioctes* Foerster.

This is a small to moderate-sized genus of Holarctic and Neotropical distribution. Contrary to the discussion of Horstmann (1970), *Enytus* can be recognized more or less as defined by Townes (1970).

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 177-178. — Horstmann, 1970.

Bayer. Ent., Nachrichtenbl. 19: 82-83.

albipes (Provancher). Que., Conn., R. I., N. Y. The species was inadvertently placed in *Casimaria* by Barron (1975).

Porizon albipes Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 364. ♀.

Nemeritis ocellatus Viereck, 1925; 1926. Canad. Ent. 57 (7): 178 (key); 58 (7): 179. ♂. In the 1926 part of Viereck's paper as "*Campoplex (Nemeritis) ocellatus*."

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 178 (transfer to *Enytus*).

— Barron, 1975. Nat. Canad. 102: 420-421.

alticola (Cushman), n. comb. N. H. Known only from the holotype, which was collected on Mt. Washington.

Zaporus alticola Ashmead, 1906. In Slosson, Ent. News 17: 324. Nomen nudum.

Dioctes alticola Cushman, 1922. U. S. Natl. Mus., Proc. 61 (8): 11. ♀.

eureka (Ashmead). Southwestern Idaho, B. C. s. to s. Calif. Host: *Archips argyrospilus* (Wlk.), *Argyrotaenia dorsallana* (Dyar), *Choristoneura rosaceana* (Harris), *Cnephasia longana* (Haw.), *Pandemis limitata* (Rob.), *Malacosoma californicum pluviale* Dyar?, *Acrobasis vaccinii* Riley.

Limneria eureka Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 436. ♂.

Enytus maculipes Cameron, 1905. Invertebrata Pacifica 1: 132. ♀.

Campoplex (Diocetes) rosaceanae Viereck, 1925; 1926. Canad. Ent. 57 (9): 227 (key); 58 (7): 181. ♀.

- montanus* (Ashmead), n. comb. N. B. w. to interior Alaska, s. to Maine, Mich., N. Mex., and n. Calif.; Greenland; Europe. Host: *Dioryctria* sp.?, *Zeiraphera* sp., *Z. fortunana* Kft., *Acleris variana* (Fern.), *Choristoneura fumiferana* (Clem.), *C. occidentalis* Free., leaf roller on poplar, leaf tier on *Vaccinium*.
- Ischnocerus montanus* Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 418. ♀.
- Nemeritis conodor* Viereck, 1925; 1926. Canad. Ent. 57 (7): 178 (key); 58 (7): 179. ♀. In the 1926 portion of Viereck's work as "*Campoplex (Nemeritis) concolor* [?]." N. syn.
- Angitia (Inareolata) laticeps* Roman, 1938. Ann. and Mag. Nat. Hist. (11) 1: 541. ♂, ♀.
- Formerly preocc. in *Diadegma* by Viereck, 1925. N. syn.
- Horogenes patens* Townes, 1945. Amer. Ent. Soc., Mem. 11: 659. N. name for *A. (I.) laticeps* Roman.
- Taxonomy: Horstmann, 1969; 1973. Beitr. z. Ent. 19: 441; 23: 132, 134.
- obliteratus** (Cresson). N. Y. and Ont. s. to n. Fla., w. to central Nebr. Host: *Grapholitha molesta* (Bsk.), *Paralobesia viteana* (Clem.), *Rhyacionia frustrana* (Comst.)?, *Anthophila pariana* (Clerck), *Homadula albizziae* Clarke, *Coleophora serratella* (L.), *Arogalea cristifasciella* (Cham.), *Acleris minuta* (Rob.), *Argyrotaenia velutinana* (Wlk.).
- Mesoleptus obliteratus* Cresson, 1874. Ent. Soc. Phila., Proc. 3: 260. ♀.
- Limneria elegans* Weed, 1887. Ill. State Lab. Nat. Hist., Bul. 3: 40. ♀.
- Limneria salicicola* Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 437. ♀. I believe that the data which Ashmead gave for the holotype may not apply to it (see discussion of the holotype of *Diadegma acronyctae* [Ashmead]).
- Limneria salicicolum* Dalla Torre, 1901. Cat. Hym., v. 3, p. 103. Emend.
- Thymaris slingerlandana* Ashmead, 1904. Canad. Ent. 36: 333. ♀.
- Nemeritis dolichourus* Viereck, 1925; 1926. Canad. Ent. 57 (7): 178 (key); 58 (7): 178. ♀.
- Biology: Boyce, 1947. Ent. Soc. Ont., Ann. Rpt. 77: 21, 22, 24, 27, 28, 29, 33. — Allen, 1962. U. S. Dept. Agr., Tech. Bul. 1265: 49-50. — Dustan and Boyce, 1966. Ent. Soc. Ont., Ann. Rpt. 96: 100, 101, 102.

- oculus** (Viereck), n. comb. Ont., s.w. Alta. Host: Geometrid?, *Operophtera bruceata* (Hulst)?
- The host records are queried because Geometridae seem unlikely to be hosts for members of this genus.
- Nemeritis oculus* Viereck, 1925; 1926. Canad. Ent. 57 (7): 178 (key); 58 (7): 179. ♂. In the 1926 portion of Viereck's paper as "*Campoplex (Nemeritis) oculus*."

Genus DIADEGMA Foerster

- Angitia* Holmgren, 1859 (1858). Svenska Vetensk.-Akad., Ofvers. af ... Forhandl. 15: 327. Preocc. by Walker, 1858.
- Type-species: *Angitia glabricula* Holmgren. Monotypic.
- Diadegma* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 153.
- Type-species: *Campoplex crassicornis* Gravenhorst. By subsequent monotypy from inclusion by Schmiedeknecht, 1907.
- Pectenella* Morley, 1915 (1916). Ichn. Britannica, v. 5, p. 65, 173, 174, 175, 183, 342, 364, 392. The preoccupied variant spelling *Pectinella* appeared on pages 65 and 183 (see Townes, 1965).
- Type-species: *Angitia latungula* Thomson. Monotypic.
- Areolina* Enderlein, 1921. Stettin. Ent. Ztg. 82: 41.
- Type-species: *Areolina imbecilla* Enderlein. Monotypic and orig. desig.
- Nothanomaloides* Viereck, 1925. Roy. Soc. Canada, Proc. and Trans. (3) 19 (5): 272.
- Type-species: *Nothanomaloides stenosomus* Viereck. Monotypic and orig. desig.
- Neoarthula* Rao, 1953. Indian Forest Rec., New Ser., Ent. 8: 179.
- Type-species: *Neoarthula pierisae* Rao. Monotypic and orig. desig.
- Diadegma* subg. *Neoangitia* Horstmann, 1969. Beitr. z. Ent. 19: 414.
- Type-species: *Angitia glabricula* Holmgren. Orig. desig.

This is a very large genus of worldwide distribution. Horstmann (1969) recognized three subgenera; he applied the name *Nythobia* Foerster to the largest subgenus. I am not convinced that the name *Nythobia* should be applied to anything other than its type-species, *N. pusio* (Holmgren).

Revision: Walley, 1967. *Canad. Ent.* 99: 925-943 (spp. of the "*stenosomus* complex").

—Horstmann, 1969; 1973. *Beitr. z. Ent.* 19: 413-472; 23: 131-150 (European spp.).

Taxonomy: Townes, 1965. *Polskie Pismo Ent.* 35: 413-415. —Townes, 1970 (1969). *Amer. Ent. Inst., Mem.* 13: 178-179. —Townes and Townes, 1973. *Amer. Ent. Inst., Mem.* 19: 155 (generic syn. revised).

acronyctae (Ashmead). Newfoundland (insular) w. to s. Sask., s. to w. N. C., n. Mich. and Colo. Host: *Ancylics comptana* (Froel.), microlepidoptera on *Salix*, *Acleris variana* (Fern.), *Archips rosanus* (L.).

Limneria acronyctae Ashmead, 1896. *Amer. Ent. Soc., Trans.* 23: 194. ♂. Ashmead cited no locality for the holotype, and the host data Ashmead cited are erroneous. Circumstantial evidence indicates that the data which Ashmead (1890) and Riley and Howard (1890) cited for the holotype of *Limneria salicicola* Ashmead (the latter say: "Inquinolus Lepid. Larvae in willow gall, London, Ontario, March 1872") apply also, if not exclusively, to the holotype of *acronyctae*. This appears to be supported by the fact that several *acronyctae* specimens in the Canadian Natl. Collection emerged from galls on willow. The latter were apparently referred to by Finlayson (1975).

Campoplex (Angitia) rosanae Viereck, 1924. *Canad. Ent.* 56: 68. ♀. N. syn.

Campoplex (Ischnoscopus) alterus Viereck, 1925; 1926. *Canad. Ent.* 57 (9): 223 (key); 58 (8): 196. ♀. N. syn.

Taxonomy: Townes, 1970 (1969). *Amer. Ent. Inst., Mem.* 13: 177 (placed *rosanae* in *Tranosema*). —Finlayson, 1975. *Ent. Soc. Canada, Mem.* 94: 63, 64-65, 121, 137.

Biology: Ashmead, 1890 (1889). *U. S. Natl. Mus., Proc.* 12: 437. —Riley and Howard, 1890. *U. S. Dept. Agr., Insect Life* 3: 158 (data for *Limneria salicicola* Ashmead).

acutum (Viereck). Idaho, B. C. s. to n. Calif. Host: *Platyptilia carduidactyla* (Riley). Other host records have been published, but I am reluctant to regard them as being correct without seeing specimens pertaining to them.

Campoplex (Hyposoter) vanouverensis Viereck, 1925; 1926. *Canad. Ent.* 57 (8): 203 (key); 58 (8): 200. ♀.

Campoplex (Hyposoter) acutus Viereck, 1925; 1926. *Canad. Ent.* 57 (8): 203 (key); 58 (8): 200. ♀.

Angitia platyptiliae Cushman, 1939. *Pan-Pacific Ent.* 15: 183. ♂, ♀.

Biology: Lange, 1941. *Calif. Agr. Expt. Sta., Bul.* 53: 22, 67.

aestivale (Viereck). N. S. w. to w. Ont., s. to n. Va. Host: *Psilocorsis* sp. on *Myrica gale*, *P. cryptolechiella* (Cham.), *P. reflexella* Clem.

Angitia aestivalis Viereck, 1921. *Psyche* 28: 71. ♀.

Taxonomy: Walley, 1967. *Canad. Ent.* 99: 926, 933-934.

albatae (Walley). Northern Alta.

Angitia albatae Walley, 1929. *Canad. Ent.* 61: 191. ♀.

albicinctum Walley. Colo. Known only from the holotype, which was collected near Bond at an elevation of 7000 ft.

Diadegma albicincta Walley, 1967. *Canad. Ent.* 99: 941. ♀.

antennaellae (Walley). N. Y., n. Va., Ont. Host: *Coleophora* sp. on rose, *C. alniella* Heinr., *C. serratella* (L.).

Campoplex (Angitia) antennaellae Walley, 1932. *Canad. Ent.* 64: 182. ♀ (♂ misdet.).

blackburni (Cameron). Northwestern Oreg., w. Calif.; Hawaii. Adventive? Host: *Phthorimaea opereulella* (Zell). I have seen six specimens from North America; three of them were collected in 1897 (two at Hood River, Oreg.; one at Baden, Calif.); two of them were reared from the host cited at Chino, Calif., apparently in 1920. Other hosts have been recorded in Hawaii by Swezey (1907, 1915). Reports of the occurrence of *blackburni* in Bermuda are almost certainly erroneous; they appear to pertain to *compressum* (Cresson). Species appearing to be related to *blackburni* are Oriental, suggesting that *blackburni* may be adventive in North America as well as in Hawaii.

Limneria blackburni Cameron, 1883. *Ent. Soc. London, Trans.* 31: 192. [female].

Limneria hawaiiensis Cameron, 1886. *Manchester Lit. and Phil. Soc., Mem. and Proc.* (3) 10: 241. [female].

- Biology: Swezey, 1907. Hawaii. Sugar Planters' Assoc., Expt. Sta., Bul., Ent. Ser. 5: 43-45; pl. 6, fig. 2. —Swezey, 1915. Hawaii. Ent. Soc., Proc. 3: 106-107.
- buckelli** (Viereck). Southern B. C.
Campoctonoides buckelli Viereck, 1925. Canad. Ent. 57 (7): 177 (key); 58 (12): 296. ♀.
- californicum** Walley. Western Wash., n.e. Calif.
Diadegma californica Walley, 1967. Canad. Ent. 99: 932. ♂, ♀.
- carolina** Walley. N. C.-Tenn. Known only from two localities situated on the border between N. C. and Tenn. in Gt. Smoky Mts. Natl. Park.
Diadegma carolina Walley, 1967. Canad. Ent. 99: 930. ♂, ♀.
- chrysostictum** (Gmelin). Que., Maine, Conn., N. Y., Ont., Mich., w. Wash., w. Oreg.; Eurasia. Adventive. Host: *Anagasta kuehniella* (Zell.), *Galleria mellonella* (L.), *Plodia interpunctella* (Hbn.)?, borer in *Iris* pod.
Ichneumon chrysostictus Gmelin, 1790. In Linnaeus, Syst. Nat., ed. 13, v. 1, p. 2721. ♀.
Campoplex (*Angitia*) *kiehtani* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 265. ♀.
Campoplex (*Angitia*) *woonandi* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 265. ♂.
Angitia galleriae Cushman, 1920. U. S. Natl. Mus., Proc. 58: 266. ♂, ♀. N. syn.
Campoplex (*Hyposoter*) *petiolatus* Viereck, 1925; 1926. Canad. Ent. 57 (8): 204 (key); 58 (9): 221. ♀.
Campoplex (*Hyposoter*) *curtus* Viereck, 1925; 1926. Canad. Ent. 57 (8): 204 (key); 58 (9): 221. ♀.
Campoplex (*Hyposoter*) *triangularis* Viereck, 1925; 1926. Canad. Ent. 57 (8): 204 (key); 58 (9): 222. ♀.
Campoplex (*Diadegma*) *costata* Viereck, 1925; 1926. Canad. Ent. 57 (9): 227 (key); 58 (11): 279. ♀.
Campoplex (*Eulimneria*) *bakeri* Viereck, 1925. Canad. Ent. 57 (10): 278. ♀.
Angitia incipiens Walley, 1929. Canad. Ent. 61: 192. ♀.
Horogones chrysosticta corsicator Aubert, 1961. Soc. Ent. de France, Ann. 130: 183. ♂, ♀.
Diadegma chrysosticta orientator Aubert, 1965. Soc. Ent. de Mulhouse, Bul. 17: 67. ♀.
- Taxonomy: Walley, 1959. In Fisher, Canad. Jour. Zool. 37: 429. —Horstmann, 1969; 1973. Beitr. z. Ent. 19: 462, 465, 467, 468; 23: 132.
- Biology: Thorpe, 1938. Roy. Ent. Soc. London, Proc., Ser. A: Gen. Ent. 13: 58-59. —Richards, 1949. Roy. Ent. Soc. London, Proc., Ser. B: Taxonomy 18: 31-32. —Fisher, 1959. Canad. Jour. Zool. 37: 429-446. —Fisher, 1961. Jour. Expt. Zool. 38: 267-275. —Fisher, 1962. Ecology 43: 314-316.
- combinatum** (Holmgren). Greenland?; Europe. The species was recorded from Greenland by Roman (1933), but Roman's identification would be questionable in view of Horstmann's (1969) finding that the Holmgren collection no longer contains any type material of *combinatum*.
Limneria combinata Holmgren, 1860 (1858). Svenska Vetensk.-Akad. Handl. (n. s.) 2: (2): 62. ♂, ♀.
Diadegma combinata alpinator Aubert, 1970. Soc. Ent. de Mulhouse, Bul. 26: 69. ♀.
- Taxonomy: Roman, 1933. Norges Svalbard-og Ishavs-undersokelser, Skrifter om Svalbard og Ishavet 53: 11. —Aubert, 1968. Schweiz. Ent. Gesell., Mitt. 41: 189. —Horstmann, 1969; 1973. Beitr. z. Ent. 19: 447-448; 23: 132, 137.
- compressum** (Cresson). Maine, S. Dak., and Utah, s. to Va., Tex., and s. Calif.; Bermuda, n. Mexico. Host: *Phthorimaea operculella* (Zell.), *Paralobesia viteana* (Clem.), *Frechinia helianthiales* (Murt.).
Mesoleptus compressus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 260. ♂.
Limneria ferrugineipes Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 432. ♂.
Idethist(?) paenerialis Viereck, 1906. Amer. Ent. Soc., Trans. 32: 216. ♂, ♀.
Campoplex (*Angitia*) *oedemiformis* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 265. ♂.
Campoplex (*Campoplex*) *ruficoxalis* Viereck, 1925; 1926. Canad. Ent. 57 (9): 226 (key); 58 (6): 144; 58 (7): 176. ♂.

- comptoniellae** (Viereck). Que. w. to Minn., s. to Pa. Host: *Acrobasis betulella* Hulst, *A. caryivorella* Rag., *A. comptoniella* Hulst, *A. rubrifasciella* Pack., *A. sylviella* Ely. Cushman indicated that four of his paratypes, which are labeled "ex tortricid," were reared from "*Gelechia trialbamaculella* Chambers or (*Olethreutes*) *Peronea permutana* Duponche." Therefore, neither of the present equivalents of those names can be cited with any certainty as a host.
- Campoplex (Hyposoter) comptoniellae* Viereck, 1925; 1926. *Canad. Ent.* 57 (8): 204 (key); 58 (9): 219. ♂, ♀.
- Campoplex digitatus* Cushman, 1926. U. S. Natl. Mus., Proc. 67 (23): 11. ♂, ♀.
- crassulum** Walley. N. S., Maine, N. Y., Ont. Host: *Coleophora asterosella* McD., *C. granifera* Braun.
- Diadegma crassula* Walley, 1967. *Canad. Ent.* 99: 935. ♂, ♀.
- discoocellellae** (Viereck). D. C. Host: *Chionodes violaceofusca* (Zell.).
- Limnerium (Horogenes) discoocellellae* Viereck, 1911. U. S. Natl. Mus., Proc. 39: 404. ♀.
- falciferum** Walley. Southwestern Alta.
- Diadegma falcifera* Walley, 1967. *Canad. Ent.* 99: 938. ♀.
- fenestrale** (Holmgren). Oreg.; Eurasia. Specimens in the U. S. Natl. Museum collection appear to indicate that *fenestrale* was released against and recovered from *Cnephasia longana* (Haw.) in Oregon in 1950. Host: *Cnephasia longana* (Haw.). My identification of the specimens reared from *Cnephasia longana* is based upon agreement with a specimen identified as *fenestrale* by Dr. Klaus Horstmann; the latter was in turn compared with the *fenestrale* lectotype in 1976 and differed from it only in having the hind tibia more strongly infuscate apically and basally. It should be mentioned here that the lectotype selected by Townes, Momoi, and Townes (1965) is invalid by virtue of the prior selection of another specimen by Hinz (1964). Horstmann (1969) mentioned having specimens in his collection which were reared from *Plutella xylostella* (L.) but gave no other host records. Walley (1929) stated that there were "five specimens [in the Canadian National Collection] from Ottawa, Ont., Sept., 1924 (A. Richardson) which answer to the description of *Angitia fenestralis* (Holmg.)." The occurrence of *fenestrale* in Ont. has not been confirmed.
- Limneria fenestralis* Holmgren, 1860 (1858). Svenska Vetensk.-Akad. Handl. (n. f.) 2 (8): 59. ♂, ♀.
- Taxonomy: Walley, 1929. *Canad. Ent.* 61: 193. —Boyd, 1934. *Soc. Brit. Ent.*, Trans. 1: 135-138 (variation and comparison with *eucrophagum* Horstmann, which was misdet. as "*Angitia cerophaga* [Gravenhorst]"). —Hinz, 1964. *Entomophaga* 9: 70. —Townes, Momoi, and Townes, 1965. *Amer. Ent. Inst.*, Mem. 5: 296-297. —Horstmann, 1969; 1973. *Beitr. z. Ent.* 19: 460-461; 23: 133. —Gupta, 1974. *Oriental Insects* 8: 104-105.
- Biology: Hardy, 1939. *Bul. Ent. Res.* 29: 352-355, 356, 357, 365, 371 (as compared with *eucrophagum* [= "*cerophaga*"]). —Lloyd, 1942. *Rev. Canad. de Biol.* 1: 633-634 (as compared with *eucrophagum* [= "*cerophaga*"]).
- glabriculum** (Holmgren). Newfoundland (n. Labrador), n. Que., n. Yukon; Europe.
- Angitia glabricula* Holmgren, 1859 (1858). Svenska Vetensk.-Akad., Ofvers. af ... Forhandl. 15: 327. ♂, ♀.
- Diadegma frigida* Walley, 1967. *Canad. Ent.* 99: 941. ♂, ♀.
- Taxonomy: Horstmann, 1969; 1973. *Beitr. z. Ent.* 19: 427-428; 23: 133, 141.
- groenlandicum** (Roman). Western Greenland. Horstmann (1969) placed *groenlandicum* as a synonym (with a query) of *D. trochanteratum* (Thomson). In 1976 I studied the *trochanteratum* lectotype and the *groenlandicum* holotype; I compared my homotype for the former with the holotype of the latter and do not think it possible that the two names are synonymous.
- Anilasta groenlandica* Roman, 1916. *Arkiv. for Zool.* 10 (22): 11. ♀.
- Taxonomy: Roman, 1934. *Ann. and Mag. Nat. Hist.* (10) 14: 610. —Horstmann, 1969. *Beitr. z. Ent.* 19: 456.

- hospitum** (Holmgren). Northwestern Calif. Known only from the lectotype which was almost certainly collected in the San Francisco vicinity, particularly in view of the fact that it was collected by Kinberg (see Persson, 1971, p. 169).
Limneria hospita Holmgren, 1869 (1868). Eug. Resa, pt. 2 (Zool.), sect. 1 (Ins.), p. 416. ♂.
- Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 110 (lectotype selection). —Persson, 1971. Ent. Tidskr. 92: 164-172 (discussion of Eug. Resa voyage).
- insulare** (Cresson). N. H. w. to s. B. C., s. to s. Fla., s. Tex., and s. Calif.; West Indies and Mexico s. to Venezuela; Hawaii. Host: *Hellula undalis* (F.), *Plutella armoraciae* Bsk., *P. xylostella* (L.).
Mesoleptus insularis Cresson, 1865. Ent. Soc. Phila., Proc. 4: 15. ♂.
Limneria polynesiensis Cameron, 1883. Ent. Soc. London, Trans. 31: 191. ♀.
Campoplex (*Angitia*) *hellulae* Viereck, 1912. U. S. Natl. Mus., Proc. 42: 631. ♀.
Angitia *plutellae* Viereck, 1912. U. S. Natl. Mus., Proc. 43: 583. ♀. N. syn.
Campoplex (*Hyposoter*) *pygmaeus* Viereck, 1925; 1926. Canad. Ent. 57 (8): 204 (key); 58 (9): 220. ♀. N. syn.
- Sagaritis congregator* Walley, 1926. Canad. Ent. 58 (9): 225; 58 (10): 240. ♂, ♀. Described on p. 225, but name deleted there through printer's error; name provided on p. 240. N. syn.
- Taxonomy: Timberlake, 1918. Hawaii. Ent. Soc., Proc. 3: 400. —Townes, 1945. Amer. Ent. Soc., Mem. 11: 653-654, 660.
- Biology: Marsh, 1917. Jour. Agr. Res. 10: 8. —Harcourt, 1960. Canad. Ent. 92: 420-421, 422, 423-426. —Harcourt, 1962. Ent. Soc. Ontario, Ann. Rpt. 93: 71. —Harcourt, 1963. In LeRoux, Ent. Soc. Canada, Mem. 32: 56, 57, 61-62, 64.
- interruptum pterophorae** (Ashmead). N. S. w. to interior Alaska, s. to Pa., Mich., and n. Calif. Host: *Archips rosanus* (L.), *Argyrotaenia citrana* (Fern.), *Choristoneura conflictana* (Wlk.), *C. rosaceana* (Harris), *Cnephasia longana* (Haw.), "*Tortrix*" on apple, "*Tortrix*" on filbert, olethreutid on rose, *Spilonota ocellana* (D. and S.), *D. interruptum* (Holmgren) is European, and I have not studied specimens of it other than the lectotype; therefore, I have little basis for judging the soundness of the subspecific distinction of the Nearctic population (see Townes, 1970). I am in agreement with Horstmann (1973) that placement of the present species in *Diadegma* is more justifiable than was Townes' (1970) placement of it in *Tranosema*, but I am not yet willing to accept Horstmann's suppression of *interruptum* as a synonym of *praerogator* (Linnaeus), in spite of his statement (1973) that the type of *praerogator* is a typical *interruptum* male. My confidence in the opinions of Dr. Horstmann ordinarily being complete, I would regard the question of the identity of *praerogator* as being settled were it not for the fact that he indicated that the type was labeled "*salicis*," but neglected to refute or otherwise discuss Linnaeus' indication that *praerogator* had been reared from the lymantriid *Leucoma salicis* (L.). The manner in which the *praerogator* type is mounted (see Roman, 1932) and the supposed deterioration of the specimen with time would seem to necessitate (1) consideration of the Linnaean host record and (2) comparison of the *praerogator* type with males of *Hyposoter* species which could be expected to parasitize *L. salicis*. This seems all the more necessary in view of the fact that I have seen specimens of a European species of *Hyposoter*, not colored unlike *interruptum*, which were reared from a lymantriid, and which have cocoons agreeing with Roman's description of the one mounted next to the *praerogator* type.
- Limneria pterophorae* Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 435. ♀. Contrary to Ashmead's statement, the label of the holotype reads: "From *Tortrix* on apple."
Campoplex (*Angitia*) *basizona* Viereck, 1924. Canad. Ent. 56: 67. ♂. *C. basizona* had been placed in *Hyposoter* by Townes (1945); the holotype was reared from *Archips rosanus* (L.) and agrees well with other material of *interruptum pterophorae* which I studied in the Canadian Natl. Collection. N. syn.
- Taxonomy: Roman, 1932. Ent. Tidskr. 53: 10 (type of *I. praerogator*). —Townes, 1945. Amer. Ent. Soc., Mem. 11: 660, 664. —Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 177. —Horstmann, 1973. Beitr. z. Ent. 23: 134-135 (generic placement, suppression of name *interruptum*).

johanseni (Viereck). Que., R. I., S. Dak.

Campoctonoides johanseni Viereck, 1925. Canad. Ent. 57 (7): 177 (key); 58 (12): 297. ♂, ♀.

laricinellum (Strobl). Europe. Introduced in Maine, N. H., Vt., Mass., Conn., N. Y., and Ont. between 1931 and 1939 and very recently in Idaho, without becoming established, at least at release sites in eastern North America. Host: *Coleophora laricella* (Hbn.). The host cited was the target species for all of the introductions in North America. In most publications the name *nana* (Gravenhorst) was applied to this species, but Horstmann (1969) stated that the type of *nana* was not found in the Gravenhorst collection, and he applied the name in accordance with specimens identified as *nana* in the Thomson collection.

Angitia laricinella Strobl, 1904. Naturw. Ver. f. Steiermark, Mitt. 40: 86. ♂, ♀.

Taxonomy: Horstmann, 1969; 1973. Beitr. z. Ent. 19: 439, 443; 23: 133-134.

Biology: Thorpe, 1933. Bul. Ent. Res. 24: 273-277, 288. —Dowden, 1934. Ent. Soc. Amer., Ann. 27: 601-602, 603. —Graham, 1944. Ent. Soc. Ontario, Ann. Rpt. 74: 48-52. —Dowden, 1962.

U. S. Dept. Agr., Agr. Handb. 226: 11 (releases only). —McGugan and Coppel, 1962.

Commonwealth Inst. Biol. Control, Tech. Commun. 2: 38, 42, 79-80, 162, 199.

laticeps (Viereck). Southwestern B. C.

Campoplex (Hyposoter) laticeps Viereck, 1925; 1926. Canad. Ent. 57 (8): 204 (key); 58 (9): 220. ♀.

lyonetae (Viereck). Southern B. C. Host: *Lyonetia speculella* Clem.

Nemeritis lyonetae Viereck, 1925; 1926. Canad. Ent. 57 (7): 178 (key); 58 (7): 178. ♂. In the 1926 portion of Viereck's revision as "*Campoplex (Nemeritis) lyonetae*."

minutum (Viereck). N. Y., N. C., Colo., B. C.

Campoplex (Hyposoter) minutus Viereck, 1925; 1926. Canad. Ent. 57 (8): 204 (key); 58 (9): 221. ♀. Preocc. by Holmgren, 1856 and also secondarily by Cushman, 1922; not renamed here because of uncertain synonymy.

mollipla (Holmgren). Rhodesia, South Africa, Mauritius. Introduced in Calif. in 1966, without becoming established. Host: *Phthorimaea operculella* (Zell.). The host cited was the target species for the release in Calif. I have used the spelling *mollipla* and regard *molliplum* as an unjustified emendation because *mollipla* is indecipherable; for that reason Holmgren's proposal of it with an upper case M must be accepted as indicating that it is a proper name, as was done by Dalla Torre (1901), who acted as first revisor in transferring the species to *Limnerium* as *mollipla*.

Limneria Mollipla Holmgren, 1869 (1868). Eug. Resa, pt. 2 (Zool.), sect. 1 (Ins.), p. 417. ♂.

Limnerium stellenboschense Cameron, 1905. So. African Phil. Soc., Trans. 15: 200. ♀.

Limnerium(!) iratum Cameron, 1905. Albany Mus., Rec. 1: 309. ♀.

Limnerium longiceps Cameron, 1906. So. African Mus., Ann. 5: 100. ♀.

Diadegma fasciannulata Morley, 1915. Ann. and Mag. Nat. Hist. (8) 16: 340. Nomen nudum.

Diadegma molliplum Townes and Townes, 1973. Amer. Ent. Inst., Mem. 19: 156. Emend.

Taxonomy: Dalla Torre, 1901. Cat. Hym., v. 3, p. 99. —Townes and Townes, 1973. Amer. Ent. Inst., Mem. 19: 156 (syn. and lectotype selections).

Biology: Edwards, 1939. Mauritius Dept. Agr., Sci. Ser., Bul. 13: 7. —Oatman and Platner, 1966. Environmental Ent. 3: 264 (release only).

obliteratellum (Viereck). Southern B. C.

Campoplex (Hyposoter) oblitteratella Viereck, 1925; 1926. Canad. Ent. 57 (8): 204 (key); 58 (9): 222. ♀.

obscurum (Cresson). Que. w. to s. B. C., s. to Ind., Iowa, and Colo. Host: *Crambus trisectus* (Wlk.), *Ostrinia obumbratalis* (Led.).

Mesoleptus obscurum Cresson, 1864. Ent. Soc. Phila., Proc. 3: 261. ♀.

Campoplex (Hyposoter) convergens Viereck, 1925; 1926. Canad. Ent. 57 (8): 203 (key); 58 (8): 200. ♀.

Campoplex (Ischnoscopus) vinalis Viereck, 1925; 1926. Canad. Ent. 57 (9): 223 (key); 58 (8): 197. ♀.

- openangorum** (Viereck). Maine w. to s. B. C., s. to N. J., s. Tex., and s. Calif. Host: *Homoeosoma electellum* (Hulst), *Zophodia convolutella* (Hbn.), "Tortrix" on gooseberry. *Campoplex* (*Angitia*) *openangorum* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 265. ♂.
- paenesessile** (Viereck). Southeastern Ont.
Campoplex (*Hyposoter*) *paenesessilis* Viereck, 1925; 1926. Canad. Ent. 57 (8): 204 (key); 58 (9): 222. ♀.
- parviforme** (Viereck). Mass. w. to s. B. C., s. to s. Miss. and central Tex. Host: *Gelechia triabamaculella* Cham., *Acrobasis caryae* Grt., *A. juglandis* (LeB.), *A. vaccinii* Riley. *Campoplex* (*Angitia*) *parviformis* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 265. ♀.
- parvum** (Provancher). Que.
Limneria parva Provancher, 1874. Nat. Canad. 6: 147. ♀.
- pattoni** (Ashmead). Southeastern N. Y., s. Mich., Ill., Kans. and n. Ariz., s. to s. Fla., s. Tex., and s. Calif.; West Indies and Mexico s. to El Salvador; Hawaii. Host: *Herpetogramma phaeopteralis* (Gn.), *Loxostege rantis* (Gn.), *Loxostege sticticalis* (L.), *Udea rubigalis* (Gn.).
Limneria Pattoni Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 434. ♂.
Limneria eurycreontis Ashmead 1890 (1889). U. S. Natl. Mus., Proc. 12: 434. ♀.
Limneria mississippiensis Ashmead, 1894. U. S. Dept. Agr., Insect Life 7: 243. ♀.
Amorphota paenexareolata Viereck, 1905. Kans. Acad. Sci., Trans. 19: 309. ♂.
Amorphota confluens Viereck, 1906. Amer. Ent. Soc., Trans. 32: 217. ♀.
Cymodsa simplicicornis Viereck, 1916. Biol. Soc. Wash., Proc. 29: 168. ♀.
- pendulum** Walley. Southeastern N. Y., n.w. S. C., s. Mich.
Diadegma pendula Walley, 1967. Canad. Ent. 99: 937. ♀.
- psilocorsis** Walley. Conn., N. Y., N. J., Md., n. Va., e. N. C., Ont., Mich., Mo. Host: *Psilocorsis* sp., *P. cryptolechiella* (Cham.), *P. quercicella* Clem.
Diadegma psilocorsis Walley, 1967. Canad. Ent. 99: 934. ♂, ♀.
- pulicalvariae** Walley. P. E. I. w. to s. B. C., s. to e. N. C., n.w. S. C., and e.-central Ill. Host: *Coleotechnites* sp., *C. apiciripunctella* (Clem.), *Eucordylia atripictella* Dietz, *Pulicalvaria martini* Free., *P. thujaella* (Kft.).
Diadegma pulicalvariae Walley, 1967. Canad. Ent. 99: 928. ♂, ♀.
- solum** (Viereck). B. C., Wash.
Nemeritis solus Viereck, 1925; 1926. Canad. Ent. 57 (7): 179 (key); 58 (7): 180. ♀. In the 1926 portion of Viereck's revision as "*Campoplex* (*Nemeritis*) *solus*."
- stenosomum** (Viereck). Que. w. to s. B. C., s. to w. N. C., n. Ohio, and n.w. Oreg. Host: *Carcina quercana* (F.).
Nothanomaloides stenosomus Viereck, 1925. Roy. Soc. Canada, Proc. and Trans. (3) 19 (5): 272. ♀.
- trachas** (Viereck). Southern Alta.
Nemeritis trachas Viereck, 1925; 1926. Canad. Ent. 57 (7): 179 (key); 58 (7): 180. ♀. In the 1926 portion of Viereck's revision as "*Campoplex* (*Nemeritis*) *trachas*."
- truncatum** (Viereck). Arctic N. W. T.
Campoplex (*Hyposoter*) *truncatum* Viereck, 1925; 1926. Canad. Ent. 57 (8): 203 (key); 58 (8): 200. ♀.
- ungavae** Walley. Newfoundland (n. Labrador), n. Que., Colo. Ecology: The specimens from Colo. were collected at elevations of 11,700 ft. and 12,000 ft. in the Rocky Mts.
Diadegma ungavae Walley, 1967. Canad. Ent. 99: 939. ♂, ♀.

Genus ERIBORUS Foerster

Zaporus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 152.

Type-species: *Campoplex dorsalis* Gravenhorst. By subsequent monotypy from inclusion by Schmiedeknecht, 1907.

Eriborus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 153.

Type-species: *Campoplex perfidus* Gravenhorst. Desig. by Morley, 1913 from two species included by Schmiedeknecht, 1907.

Bosmina Cameron, 1899. Manchester Lit. and Phil. Soc., Mem. and Proc. 43 (3): 120. Preocc. by Baird, 1845.

Type-species: *Bosmina spinipes* Cameron. Monotypic.

Hymenobosmina Dalla Torre, 1901. Wien. Ent. Ztg. 20: 52. N. name for *Bosmina* Cameron.

Neobosmina Cameron, 1906. Entomologist 39: 250. Probably a lapsus for *Hymenobosmina* Dalla Torre, as evidenced by Cameron's inclusion of *Bosmina mandibularis* Cameron and by the fact that he gave no indication that he was describing a new genus; possibly not treatable as a lapsus without more definite proof.

Type-species: *Neobosmina pilosella* Cameron. Desig. by Viereck, 1914.

This is a large genus of the Old World. The number of Palearctic species appears to be small, and it is my impression that more *Eriborus* species occur in the Oriental Region than in other tropical and subtropical parts of the Old World.

Revision: Momoi, 1970. Pacific Insects 12: 384-388 (spp. of Ryukyu Archipelago).

Taxonomy: Townes, Townes, and Gupta, 1961. Amer. Ent. Inst., Mem. 1: 243 (syn.). —Oehlke, 1964. Ent. Abhandl. 29: 571 (footnote). —Horstmann, 1969. Beitr. z. Ent. 19: 414, 415.

molestae (Uchida). Korea, Japan. Introduced between 1932 and 1953 at 321 localities from Mass. w. to Ill., s. to Ga. and Ark., according to Allen (1962); there was temporary establishment at least from many of the releases between 1932 and 1937, but the species has apparently not persisted anywhere in the United States. The host cited was the target species for releases in the United States.

Diocetes molestae Uchida, 1933. Wash. Acad. Sci., Jour. 23: 148. ♀.

Biology: Garman, 1939. Conn. (State) Agr. Expt. Sta., Bul. 428: 65-66, 67. —Allen, Holloway, and Haeussler, 1940. U. S. Dept. Agr., Cir. 561: 51-52. —Haeussler, 1940. U. S. Dept. Agr., Tech. Bul. 728: 21-24, 48-49, 59. —Allen, 1954. Jour. Econ. Ent. 47: 278. —Allen, 1962. U. S. Dept. Agr., Tech. Bul. 1265: 120.

terebrans (Gravenhorst). Mass. and Ont. w. to N. Dak., s. to Md., Ill., and Iowa; Eurasia.

Introduced. Host: *Ostrinia nubilalis* (Hbn.), lepidopteran in red pine shoot? One specimen in the U. S. Natl. Museum collection is labeled as having been reared from a red pine tip infested by *Rhyacionia buoliana* (D. and S.).

Campoplex terebrans Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 503. ♂, ♀.

Angitia (*Diocetes*) *gigantea* Szepligeti, 1916. Mus. Natl. Hungarici, Ann. 14: 373. ♀.

Eugnomus pyraustae Okamoto, 1921. Hokkaido Agr. Expt. Sta., Rpt. 12: 15. ♂.

Angitia (*Diocetes*) *punctoria* Roman, 1923. Ent. Tidskr. 44: 171. ♂, ♀.

Taxonomy: Aubert, 1964. Soc. Linn. de Lyon, Bul. Mens. 33: 64 (syn.). —Townes, 1965.

Poliskie Pismo Ent. 35: 410 (syn.). —Townes, Momoi, and Townes, 1965. Amer. Ent. Inst., Mem. 5: 304 (syn.). —Horstmann, 1969. Beitr. z. Ent. 19: 453-454.

Biology: Clark, 1934. U. S. Dept. Agr., Tech. Bul. 455: 9, 11, 20-21, 28, 31. —Ellinger and Sachtleben, 1929. Biol. Reichsanst. f. Land-u. Forstw., Arb. 17: 327. —Clark and Carter, 1943. Jour. Econ. Ent. 36: 120. —Baker, Bradley, and Clark, 1949. U. S. Dept. Agr., Tech. Bul. 983: 74, 75-90, 91.

Genus LATHROSTIZUS Foerster

Lathrostizus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 154.

Type-species: *Lathrostiza sternocera* Thomson. Desig. by Viereck, 1914 from two species included by Thomson, 1887.

Lathrostiza Thomson, 1887. Opusc. Ent. 11: 1153. Emend.

This is a small Holarctic genus. The known hosts include nematine sawflies of the genera *Pontania*, *Euura*, and *Hoplocampa*.

Revision: Horstmann, 1971. Deut. Ent. Gesell., Mitt. 30 (1): 8-12; 30 (2): 16-18 (European spp.).

euurae (Ashmead). Western Mont., s.w. Idaho, Utah., s. Ariz., w. Nev., s. Calif. Host: *Euura* sp. *Pontania* sp. I suspect that the species studied by Caltagirone (1964) and Finlayson (1975) is not *euurae*.

Limneria euurae Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 433. ♂, ♀. The type locality is Pahreah, Kane Co., Utah.

Biology: Caltagirone, 1964. Ent. Soc. Amer., Ann. 57: 287-289 (possibly not *euurae*).

—Finlayson, 1975. Ent. Soc. Canada, Mem. 94: 80-81, 132, 137 (possibly not *euurae*).

modestus (Brues). Arctic N. W. T.

Diocles modestus Brues, 1919. Rpt. Canad. Arctic Exped. 1913-18, v. 3, pt. G, p. 23. ♂, ♀.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 187 (generic placement).

Genus OLESICAMPE Foerster

Limneria Holmgren, 1859 (1858). Svenska Vetensk.-Akad., Ofvers. af ... Forhandl. 15: 326. Preocc. by Adams, 1851.

Type-species: *Campoplex longipes* Gravenhorst. Desig. by Viereck, 1912. The type-species is Gravenhorst's identification of *Ichneumon longipes* Mueller.

Olesicampe Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 153.

Type-species: *Campoplex longipes* Gravenhorst. Desig. by Viereck, 1912 from 26 species included by Thomson, 1887. The type-species is Gravenhorst's identification of *Ichneumon longipes* Mueller.

Omoborus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 154.

Type-species: *Omoborus kincaidi* Davis. By subsequent monotypy from inclusion by Davis, 1898.

Holocremnus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 157.

Type-species: *Limneria cothurnata* Holmgren. Desig. by Viereck, 1914 from 22 species included by Thomson, 1887.

Olesicampa Thomson, 1887. Opusc. Ent. 11: 1053, 1139. Emend.

Holocremna Thomson, 1887. Opusc. Ent. 11: 1053, 1176. Emend.

Limnerium Ashmead, 1900. Canad. Ent. 32: 368. N. name for *Limneria* Holmgren.

Zaplatystoma Viereck, 1925. Canad. Ent. 57 (7): 177, 180, 181.

Type-species: *Zaplatystoma typicum* Viereck. By orig. indication and also subsequent desig. of Viereck, 1926.

This is a large genus. As presently defined in the structural sense, it appears to include species from all zoogeographic regions, but by far the greatest number of species occur in the Holarctic Region. From our knowledge of the habits of a considerable number of the species occurring in the Holarctic Region there has developed the supposition that parasitism of sawfly larvae clearly distinguishes *Olesicampe* from *Hyposoter* (parasites of Lepidoptera larvae). Structural differentiation of the two genera is rather arbitrary, however, particularly when one looks at the world fauna, in which case the differentiation of *Olesicampe* from *Lemophagus* also appears arbitrary. Although it seems certain that some of the species currently placed in *Olesicampe* will prove not to be parasites of sawflies, it appears equally as certain that nearly all of the Nearctic and Palearctic species of *Olesicampe* are parasites of sawflies. In all cases known to me, *Olesicampe* species kill the host after it has spun its cocoon and emerge as adults from the host cocoon.

alaskensis (Ashmead). N. H., s.e. Alaska, B. C., Wash., Oreg.

Olesicampa alaskensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 235. ♂.

annulata (Provancher). Que.

Pyracmon annulatum Provancher, 1879. Nat. Canad. 11: 182. ♀.

atypica (Viereck). Western B. C.

Pyracmonoides atypicum Viereck, 1925. Canad. Ent. 57 (7): 177 (key); 57 (12): 300. ♂.

banffensis (Viereck). Southeastern Man., s.w. Alta., Wash.

Campoplex (Amelctoonus) paucifilius Viereck, 1925; 1926. Canad. Ent. 57 (9): 224 (key); 58 (11): 278. ♀.

Campoplex (Amelctoonus) banffensis Viereck, 1925; 1926. Canad. Ent. 57 (9): 224 (key); 58 (11): 278. ♀.

- barbata** (Provancher). Que., Conn., N. Y., N. J., Pa.
Mesoleptus barbatus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 98. ♀.
Campoplex (Holocremnus) metacomet Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 264. ♀.
- beginii** (Ashmead). Que.
Prionopoda beginii Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 198. ♀.
- benefactor** Hinz. N. S., N. B., Maine, s.-central Pa., n. Minn., s. Man.; Europe. Introduced. Host: *Pristiphora erichsonii* (Htg.). The host cited was the target species for releases of *benefactor* in North America, and *benefactor* is not known to parasitize other species of sawflies in Europe.
Olesicampe benefactor Hinz, 1969. Canad. Ent. 101: 181. ♂, ♀.
- Biology: Muldrew, 1967. Canad. Ent. 99: 312-321 (as "sp. near *nematorum*" [Tschek]).
 —Turnock and Muldrew, 1971. Commonwealth Inst. Biol. Control, Tech. Commun. 4: 182-186, 187-193. —Pschorn-Walcher and Zinnert, 1971. Commonwealth Inst., Biol. Control, Tech. Bul. 14: 24-28. —Embree and Underwood, 1972. Canad. Ent. 104: 89-96.
 —Pschorn-Walcher, 1972. Studienrichtung Forst-u. Holzwirtschaft, v. 4, p. 461-464, 465, 467.
 —Kulman, Thompson, and Witter, 1974. Gt. Lakes Ent. 7: 23-25.
- brachyura** (Ashmead). N. Y., Mich.
Limneria brachyura Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 431. ♀.
Limnerium brachyurum Dalla Torre, 1901. Cat. Hym., v. 3, p. 91. Emend.
- californica** (Cresson). Southern Calif.
Limneria californica Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 369. ♂.
- cushmani** (Viereck). N. Y., N. C., Ont., Sask., Wash.
Campoplex (Ameloctonus) diversus Viereck, 1925; 1926. Canad. Ent. 57 (9): 224 (key); 58 (11): 277. ♀. Preocc. by Norton, 1863.
Campoplex (Ameloctonus) cushmani Viereck, 1926. Canad. Ent. 58 (11): 279. N. name for *C. (A.) diversus* Viereck.
- decora** (Viereck). Southern B. C.
Zaplatystoma decorum Viereck, 1925; 1926. Canad. Ent. 57 (7): 181 (key); 58 (2): 31. ♀.
- delicata** (Viereck). Ont.
Campoplex (Ameloctonus) delicatus Viereck, 1925; 1926. Canad. Ent. 57 (9): 224 (key); 58 (11): 278. ♀.
- dentata** (Provancher). Que.
Macrus dentatus Provancher, 1874. Nat. Canad. 6: 150. ♀. The "lectotype" selected by Gahan and Rohwer (1918) was rejected by Barron (1975) in favor of a specimen which agrees with the original description and appears to be the holotype.
 Taxonomy: Gahan and Rohwer, 1918. Canad. Ent. 50: 28. —Barron, 1975. Nat. Canad. 102: 460, 548.
- egregia** (Viereck). Ont.
Zaplatystoma egregium Viereck, 1925; 1926. Canad. Ent. 57 (7): 181 (key); 58 (2): 30. ♀.
- extrema** (Holmgren). Greenland.
Limneria extrema Holmgren, 1872. Svenska Vetensk.-Akad., Ofvers. af ... Forhandl. 29 (6): 98. ♀.
 Taxonomy: Roman, 1930. Ann. and Mag. Nat. Hist. (10) 5: 287.
- flavilypeus** (Viereck). Que., R. I., N. Y., Va.
Limneria sericea Provancher, 1875. Nat. Canad. 7: 148. ♂. Apparently preocc. in *Olesicampe* by *Campoplex sericeus* Holmgren, 1856.
Holocremnus flavilypeus Viereck, 1921. Psyche 28: 75. ♂.
- flavirictus** (Cresson). Que., N. H., R. I., Conn., N. Y., Pa., S. Dak.
Mesoleptus flavirictus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 263. ♀.
Zaplatystoma cinereum Viereck, 1925; 1926. Canad. Ent. 57 (7): 181 (key); 58 (1): 7. ♀.
- fossata** (Viereck). Ont.
Pyracmon fossatum Viereck, 1925; 1926. Canad. Ent. 57 (7): 180 (key); 58 (1): 6. ♂.
- johnsoni** (Viereck). N. H.
Zaplatystoma johnsoni Viereck, 1925; 1926. Canad. Ent. 57 (7): 181 (key); 58 (2): 32. ♀.

kincaidi (Davis). Western Wash.

Omoborus kincaidi Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 363. ♂.

Omoborus kincaidii Dalla Torre, 1901. Cat. Hym., v. 3, p. 118. Emend.

lata (Viereck). Southeastern Man., s.w. Alta.

Zaplatystoma simplex Viereck, 1925; 1926. Canad. Ent. 57 (7): 181 (key); 58 (2): 30. ♀.

Zaplatystoma latum Viereck, 1925; 1926. Canad. Ent. 57 (7): 181 (key); 58 (1): 7. ♂.

lophyri (Riley). Que. s. to n. Fla., w. to Minn. and n.e. Iowa. Host: *Neodiprion abbotii* (Leach), *N. lecontei* (Fitch), *N. pinetum* (Nort.), *N. suainei* Midd., *N. sp. in virginiana* complex.

Limneria lophyri Riley, 1877. Mo. State Ent., Ann. Rpt. 9: 32. ♂, ♀.

Biology: Tripp, 1961. Canad. Ent. 93: 51-52, 55 (also fig. final-instar larva). — Riordan, 1963. Canad. Jour. Zool. 41: 1242.

macellator (Thunberg). Europe. Introduced in N. S., N. B., Que., Vt., and Ont. between 1933 and 1940, without becoming established. Host: *Gilpinia frutetorum* (F.), *G. polytoma* (Htg.). The hosts cited were apparently the ones from which rearings were made of individuals released in North America, and most of the rearings were apparently from *G. polytoma*. The target species for the releases in North America was *G. hercyniae* (Htg.), and *hercyniae* was not recorded as a host of *macellator* by Oehlke (1966). Oehlke apparently did not study type specimens other than that of *Campoplex relictus* Hartig, and his suppression of *relictus* as a synonym of *macellator* is apparently based upon Roman's (1912) suppression of *Holocremna frutetorum* Thomson as a synonym of *macellator*. My notes on the lectotype of *frutetorum* indicate that it probably pertains to the present species, but there is a definite need for careful study by one revisor of all three of the types in question. A specimen matched by me with one in the Holmgren collection labeled as lectotype of *Limneria cothurnata* Holmgren (But possibly not yet selected by publication) indicates that *cothurnata* is erroneously treated as a synonym of *macellator* by Oehlke (1966) and Aubert (1973).

Ichneumon macellator Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 265; 9: 320. [male].

Campoplex relictus Hartig, 1838. Jahresber. Fortschr. Forstwiss. Forstl. Naturk. 1: 272. ♀.

Holocremna frutetorum Thomson, 1887. Opusc. Ent. 11: 1178. ♂, ♀.

Olesicampe ratzeburgi auct., 1936-1975. *Limneria ratzeburgi* Tschek (1871) was suppressed with a query as a synonym of *macellator* by Oehlke (1966), but Aubert (1973) indicated that synonymy to be incorrect.

Taxonomy: Tschek, 1871. Zool.-Bot. Gesell. Wien, Verh. 21: 64-65 (description of *L. ratzeburgi*). — Roman, 1912. Zool. Bidr. Uppsala 1: 266, 291 — Oehlke, 1966 (1965). Beitr. z. Ent. 15: 865-867. — Aubert, 1973. Soc. Linn. Lyon, Bul. Mens. 42: 23. — Finlayson, 1975. Ent. Soc. Canada, Mem. 94: 78, 79-80, 131, 137 (final-instar larva).

Biology: Finlayson and Reeks, 1936. Canad. Ent. 68: 160-166. — Morris, Cameron, and Jepson, 1937. Bul. Ent. Res. 28: 364-367. — Lovaszy, 1939. Ent. Soc. Fenn., Ann. 5: 226-228.

— Finlayson and Finlayson, 1958. Canad. Ent. 90 (9): 558; 90 (10): 587, 589. — Dowden, 1962. U. S. Dept. Agr., Agr. Handb. 226: 15 (release only). — McGugaan and Coppel, 1962. Commonwealth Inst. Biol. Control, Tech. Commun. 2: 39, 92, 98, 161-162.

mimetica (Viereck). Southwestern Alta., Wash., Oreg.

Zaplatystoma mimeticum Viereck, 1925; 1926. Canad. Ent. 57 (7): 181 (key); 58 (2): 31. ♀.

nematicida (Viereck). Southern B. C. Host: Sawfly on *ribes* sp.

Campoplex (Ameloctonus) nematicidus Viereck, 1925; 1926. Canad. Ent. 57 (9): 224 (key); 58 (10): 258. ♀.

nigridorsis (Viereck). Southeastern Ont.

Campoplex (Ameloctonus) nigridorsis Viereck, 1925; 1926. Canad. Ent. 57 (9): 224 (key); 58 (11): 277. ♀.

obscuripes (Viereck). N. Mex.

Limnerium obscuripes Viereck, 1903. In Skinner, Amer. Ent. Soc., Trans. 29: 91. ♀.

ocellata (Viereck). Southeastern Ont.

Zaplatystoma ocellatum Viereck, 1925; 1926. Canad. Ent. 57 (7): 181 (key); 58 (1): 8. ♂.

patula (Viereck). Southeastern Man.

Pyraconon patulum Viereck, 1925; 1926. *Canad. Ent.* 57 (7): 180 (key); 58 (1): 5. ♀.

peraffinis (Ashmead). Tex.

Limneria peraffinis Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 435. ♀.

petiolata (Viereck). Ont.

Zaplatystoma petiolatum Viereck, 1925; 1926. *Canad. Ent.* 57 (7): 181 (key); 58 (2): 31. ♂.

pikonemae Walley, N. S., N. B. Que., Ont., n. Minn., s.e. B. C. Host: *Pikonema alaskensis* (Roh.), *P. dimmockii* (Cr.).

Olesicampe pikonemae Walley, 1942. *Canad. Ent.* 74: 193. ♂, ♀.

pterionideae (Rohwer). Northern Va. Host: *Nematus erythrogaster* Nort.

Homalomma pterionideae Rohwer, 1915. U. S. Natl. Mus., Proc. 49: 219. ♂.

ruficornis (Provancher), revised status. Que.

Limneria ruficornis Provancher, 1875. *Nat. Canad.* 7: 147. ♀. My notes on the holotype of *ruficornis* indicate that it is not conspecific with the holotype of *O. dentata* (see discussion of *dentata*); *ruficornis* had been suppressed as synonym of *dentata* by Provancher (1879); the holotype of *ruficornis* was found by Barron (1975).

Taxonomy: Provancher, 1879. *Nat. Canad.* 11: 181. —Barron, 1975. *Nat. Canad.* 102: 538.

typica (Viereck). Que., N. Y.

Zaplatystoma typicum Viereck, 1925; 1926. *Canad. Ent.* 57 (7): 181 (key); 58 (1): 7. ♂, ♀.

virginiensis (Viereck). N. Y., n. Va.

Holocremnus virginiensis Viereck, 1921. *Psyche* 28: 76. ♀.

Genus LEMOPHAGUS Townes

Lemophagus Townes, 1965. *Polskie Pismo Ent.* 35: 415.

Type-species: *Lemophagus curtus* Townes. Monotypic and orig. desig.

Species so far referred to this small genus are native to Japan, Europe, and northern Africa and are parasites of Chrysomelidae. The egg is laid in the larva of the host which is killed after it has constructed its pupal cell.

curtus Townes. N. Y., w. Pa., w. W. Va., Ohio, s. Mich., n. Ind.; Europe. Introduced. Host:

Oulema melanopus (L.). The host cited was the target species for releases of *L. curtus* in North America. Data on recoveries and establishment of *L. curtus* was furnished by Mr. T. L. Burger. Establishment in W. Va. may still be uncertain, but in other states the species has been recovered in Counties other than those in which it was released; recoveries have been made at distances as great as 68 miles from any known release point.

Lemophagus curtus Townes, 1965. *Polskie Pismo Ent.* 35: 415. ♂, ♀.

Taxonomy: Montgomery and DeWitt, 1975. *Ent. Soc. Amer., Ann.* 68: 574-578 (egg and larva).

Biology: Stehr, Gage, Burger, and Montgomery, 1974. *Environmental Ent.* 3: 453-454 (initial recoveries).

Genus HYPOSOTER Foerster

Rhythmonotus Foerster, 1868. *Naturh. Ver. Rheinlande, Verh.* 25: 151, 220. The variant spelling "Rhythmonotus" appeared on p. 220.

Type-species: *Rhythmonotus singularis* Schmeideknecht. By subsequent monotypy from inclusion by Schmiedeknecht, 1909.

Hyposoter Foerster, 1868. *Naturh. Ver. Rheinlande, Verh.* 25: 152.

Type-species: *Limnerius (Hyposoter) parorgyiae* Viereck. Monotypically included and desig. by Viereck, 1910.

Ischnoscopus Foerster, 1868. *Naturh. Ver. Rheinlande, Verh.* 25: 152.

Type-species: *Ischnoscopus synchlora* Ashmead. By subsequent monotypy from inclusion by Ashmead, 1898.

Ameloclonus Foerster, 1868. *Naturh. Ver. Rheinlande, Verh.* 25: 157.

Type-species: *Banchus fugitivus* Say. Desig. by Viereck, 1914 from two species included by Ashmead, 1900.

Ebiicha Seyrig, 1935. Paris, Mus. d'Hist. Nat., Mem. 4: 88.

Type-species: *Ebiicha crocata* Seyrig. Monotypic and orig. desig.

Neozachresta Blanchard, 1949. In Havrylenko and Winterhalter, Insectos del Parque Nac. Nahuel Huapi, Buenos Aires, p. 46. Nomen nudum (fig. only).

This very large genus is known from all zoogeographic regions. The hosts are larval Lepidoptera, in nearly all cases those which do not conceal themselves when feeding (i.e. predominantly macrolepidoptera). It seems to me that *Hyposoter*, as presently defined, includes as bewildering a diversity of forms as any genus in the family. It would appear that the task of breaking the genus into smaller ones that are more meaningful phyletically will require a great deal of research that is not likely to be accomplished soon.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 181-182 (syn.). —Townes and Townes, 1973. Amer. Ent. Inst., Mem. 19: 157 (syn. revised).

affinis (Cresson). Mass., N. Y., Ill.

Mesoleptus affinis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 263. "♂" = ♀. Preocc. by Holmgren, 1856, but not renamed here because of the possibility that a synonym has been described.

annulipes (Cresson). N. S. w. to w. N. W. T. and s. B. C., s. to central Fla., s. Tex., n. Utah, and s. Calif. Host: *Agrotis ipsilon* (Hufn.), *Anicla infecta* (Ochs.), *Autographa precationis* (Gn.), *Catocala* sp., *C. antinympha* (Hbn.), *Ceramica picta* (Harris), *Eupsilia* sp. on oriental cherry, *Heliothis zea* (Bod.)?, *Pseudaletia unipuncta* (Haw.), *Pyrrhia umbra* (Hufn.), *Spodoptera exigua* (Hbn.), *S. frugiperda* (J. E. S.), *S. ornithogalli* (Gn.), *Syngrapha epigaea* (Grt.), *Vanessa atalanta* (L.), geometrid on *Rhododendron*, *Eustixia pupula* Hbn.

Mesoleptus annulipes Cresson, 1864. Ent. Soc. Phila., Proc. 3: 257. ♀.

Hyposoter interjectus Gahan, 1914. U. S. Natl. Mus., Proc. 48: 156. ♀. *H. interjectus* was incorrectly suppressed as a synonym of *nigrolineatus* (Viereck) by Townes (1945); although the name *interjectus* could perhaps be used subspecifically for the *annulipes* population in the southeastern United States, I have decided that this should not be done before the relationship between *annulipes* and *exiguae* (Viereck) is reassessed. It should be noted that specimens similar in coloration to those found in the southeast occasionally are found as far north as Mass. and Mich.; whether or not the holotype of *Campoplex eurythemeae* Viereck is such a specimen remains to be seen (see synonymy for *exiguae*). N. syn.

Campoplex (Ischnoscopus) mitralis Viereck, 1925; 1926. Canad. Ent. 57 (9): 223 (key); 58 (8): 197. ♀.

Campoplex (Ischnoscopus) truncatellus Viereck, 1925; 1926. Canad. Ent. 57 (9): 223 (key); 58 (8): 197. ♀.

Campoplex (Ameloctonus) confusus Viereck, 1925; 1926. Canad. Ent. 57 (9): 224 (key); 58 (11): 277. ♀.

Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 663-664, 668-669 (syn.). —Finlayson, 1975. Ent. Soc. Canada, Mem. 94: 73, 74, 127, 128, 137 (final-instar larva).

Biology: Wood and Nielson, 1960. Canad. Ent. 92: 761. —Guppy, 1967. Canad. Ent. 99: 96, 100.

asper (Viereck). Southwestern Alta.

Campoplex (Ameloctonus) asper Viereck, 1925; 1926. Canad. Ent. 57 (9): 224 (key); 58 (10): 259. ♀.

degrysei (Viereck). Southern Sask.

Campoplex (Ameloctonus) degrysei Viereck, 1925; 1926. Canad. Ent. 57 (9): 224 (key); 58 (10): 259. ♀.

Taxonomy: Finlayson, 1975. Ent. Soc. Canada, Mem. 4: 72-73, 126, 137 (final-instar larva).

dimidiatus (Ashmead). Western Ky., n. Ala., s.w. Miss.

Zachresta dimidiata Ashmead, 1894. U. S. Dept. Agr., Insect Life 7: 243. ♀.

- disippi** (Viereck). Que., N. J., Ont., Ohio, Mich., Ariz., w. Wash., n. Calif. Host: *Limenitis archippus* (Cram.), *Euchloe olympia* Ed.
Campoplex (*Ameloctonus*) *disippi* Viereck, 1925; 1926. Canad. Ent. 57 (9): 224 (key); 58 (11): 276. ♀.
- erythrinus** (Viereck). Md., s. Sask., s. e. B. C.
Campoplex (*Hyposoter*) *erythrinus* Viereck, 1925; 1926. Canad. Ent. 57 (8): 203 (key); 57 (8): 199. ♀.
- exiguae** (Viereck). Southern Sask.?, n. Utah, Ariz., Calif.; Mexico; Hawaii. Host: *Autographa californica* (Spey.), *Catabena esula* (Druce), *Heliothis phloxiphaga* (G. and R.), *H. zea* (Bod.), *Peridroma saucia* (Hbn.), *Pseudaletia unipuncta* (Haw.), *Spodoptera exigua* (Hbn.), *S. praeifica* (Grt.), *Trichoplusia ni* (Hbn.), *Manduca quinquemaculata* (Haw.), *M. sexta* (L.), *Cynthia cardui* (L.)?, *Ascia monuste* (L.), *Colias eurytheme* (Bdv.)?
Campoplex (*Hypothereutes*) *exiguae* Viereck, 1912. U. S. Natl. Mus., Proc. 42: 638. ♀.
Campoplex (*Ameloctonus*) *eurythemeae* Viereck, 1925; 1926. Canad. Ent. 47 (9): 223 (key); 58 (10): 258. ♂, ♀. Viereck's type specimens were reared from *Colias eurytheme* at Kinistino, Sask. Townes (1945) suppressed *C. eurythemeae* as a synonym of *exiguae*, perhaps incorrectly (see synonymy for *annulipes*).

Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 665.

Biology: Swezey, 1927. Hawaii. Ent. Soc., Proc. 6: 404-407. — Williams, 1931. Handb. Ins. ... Hawaii. Sug. Cane Fields, p. 268-269. — Blanchard and Conger, 1932. Jour. Econ. Ent. 25: 1065. — Michelbacher and Essig, 1938. Calif. Agr. Expt. Sta. Bul. 625: 21. — Puttler and van den Bosch, 1959. Jour. Econ. Ent. 52: 327-329. — Puttler, 1961. Ent. Soc. Amer., Ann. 54: 25-30. — Smilowitz, 1973. Ent. Soc. Amer., Ann. 66: 93-99. — Smilowitz and Iwantsch, 1973. Environmental Ent. 2: 759-763. — Smilowitz, 1974. Ent. Soc. Amer., Ann. 67: 317-320. — Smilowitz and Iwantsch, 1975. Canad. Ent. 107: 689-694. — Jowyk and Smilowitz, 1975. N. Y. Ent. Soc., Jour. 83: 262-263. — Iwantsch and Smilowitz, 1975. Canad. Ent. 107: 927-934. — Iwantsch and Smilowitz, 1975. Jour. Insect Physiol. 21: 1151-1157. — Beegle and Oatman, 1976. Ent. Expt. et Appl. 20: 77-80.

- frigidus** (Lundbeck). Eastern Greenland. Host: *Anarta* sp., "*Hadena*" sp.
Limneria frigida Lundbeck, 1897 (1896). Dansk Naturhist. For. Kjobenhavn, Vidensk. Meddel. (for 1896), p. 236. ♂, ♀.

Taxonomy: Roman, 1934. Ann. and Mag. Nat. Hist. (10) 14: 610-611.

- fugitivus** (Say). N. S. w. to w. Wash., s. to central Fla., s. e. Tex., and central Calif. Host: *Malacosoma americanum* (F.), *Malacosoma californicum ab simile* (Dyar), *M. c. californicum* (Pack.), *M. c. fragile* (Str.), *M. c. pluviale* (Dyar), *M. c. recenseo* Dyar, *M. constrictum* (Hy. Ed.), *M. disstria* Hbn., *Euchaetias egle* (Drury), *Hyphantria cunea* (Drury), *Anisota consularis* Dyar, *A. senatoria* (J. E. S.), *A. stigma* (F.), *A. virginien sis pellucida* (J. E. S.), *A. v. virginien sis* (Drury), *Dryocampa rubicunda rubicunda* (F.), *Datana integerrima* G. and R., *D. ministra* (Drury), *Schizura concinna* (J. E. S.), *Orgyia definita* (Pack.), *O. pseudotsugata* (McD.), *Automeris io* (F.), *Hemileuca maia* (Drury). *Banchus fugitivus* Say, 1836. Boston Jour. Nat. Hist. 1: 247. ♂, ♀.
Limneria Guignardi Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 87. ♂, ♀.
Limneria oedemasiae Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 436. ♂, ♀.
Limnerium Guignardii Dalla Torre, 1901. Cat. Hym., v. 3, p. 97. Emend.
Hyposoter fugitivus var. *pacificus* Cushman, 1919. Ent. Soc. Wash., Proc. 21: 119. ♂, ♀. N. syn.

Taxonomy: Cushman and Gahan, 1921. Ent. Soc. Wash., Proc. 23: 159. — Viereck, 1925. Canad. Ent. 57: 104. — Cushman, 1925. Ent. Soc. Wash., Proc. 27: 164-166.

Biology: Fiske, 1903. N. H. Agr. Expt. Sta., Tech. Bul. 6: 200, 202-206. — Bogavac, 1956. Zastita Bilja 7: 29-46. — Langston, 1957. Calif., Univ., Pubs. Ent. 14: 21-22, 23.
— Barrows, 1976. Ent. News 87: 101-102 (sexual behavior).

- fuscitarsis** (Viereck). Que., Ont., Mich., n. Minn., n. N. Dak., w. Wash., n. Calif.; Europe. Host: *Biston betularia cognataria* (Gn.), *Erranis tiliaria* (Harris), *Paleacrita vernata* (Pack.),

- Phigalea titea* (Cram.), brown looper with stripes, *Malacosoma disstria* Hbn. I have seen European specimens at the American Entomological Institute.
- Campoplex (Amelocnusus) fuscitarsis* Viereck, 1925; 1926. *Canad. Ent.* 57 (9): 224 (key); 58 (11): 279. ♀.
- galvestonensis** (Viereck). Southeastern Tex.
Amorphota galvestonensis Viereck, 1906. *Amer. Ent. Soc., Trans.* 32: 219. ♀.
- grahami** (Viereck). Que., Conn., Pa., Md., w. N. C., Ala., Tex.
Campoplex (Holocremnus) grahami Viereck, 1925; 1926. *Canad. Ent.* 57 (8): 203 (key); 58 (7): 182. ♀.
- luctus** (Davis). N. H., arctic N. W. T. Ecology: In N. H. presumably occurring only in the alpine region of Mt. Washington.
Candia luctus Davis, 1898 (1897). *Amer. Ent. Soc., Trans.* 24: 364. ♀.
Zachrestoides intermedia Viereck, 1925; 1926. *Canad. Ent.* 57 (7): 179 (key); 58 (1): 3. ♂.
- nirolineatus** (Viereck). Colo., n.e. N. Mex. Host: *Faronta diffusa* (Wlk.).
Hypothereutes nirolineatus Viereck, 1912. *U. S. Natl. Mus., Proc.* 43: 590. ♀.
- noctuae** (Ashmead). Conn., Va., s. Ont., n. Mich. Host: *Elaphria versicolor* (Grt.).
Limneria noctuae Ashmead, 1890 (1889). *U. S. Natl. Mus., Proc.* 12: 437. ♂. Notes in the U. S. Natl. Museum indicate that the holotype was reared from a larva of *E. versicolor*, a number of which had been found in Va. on birch, walnut, and dead leaves of oak on July 5, 1884; the date "12/7/84" which is on the label of the holotype is indicated in the notes as July 12, 1884, the emergence date of the specimen.
- Hyposoter diversicolor* Viereck, 1912. *U. S. Natl. Mus., Proc.* 43: 590. ♀.
- Angitia triops* Walley, 1929. *Canad. Ent.* 61: 191. ♂. N. syn.
- notatus** (Gravenhorst). Interior Alaska; Europe. The specimen upon which the Alaskan record is based is in the collection of the American Entomological Institute; it was identified by Dr. Henry K. Townes. I thank Dr. Townes for allowing me to publish the record.
Campoplex notatus Gravenhorst, 1829. *Ichn. Europaea*, v. 3, p. 570. ♂, ♀.
- occidentali** (Viereck). Southeastern Alta. Host: *Oidaematophorus occidentalis* Wlsm.
Campoplex (Hyposoter) occidentali Viereck, 1925; 1926. *Canad. Ent.* 57 (8): 204 (key); 58 (9): 219. ♀.
- parorgyiae** (Viereck). Que., Maine, Mass., Ont., Mich., Wis. Host: *Dascychira* sp. on fir, *D. obliquata* (G. and R.), *D. plagiata* (Wlk.). Finlayson (1966) discussed the intriguing false cocoon which is spun by this species, the true cocoon being situated inside the skin of the host larva.
Limnerium (Hyposoter) parorgyiae Viereck, 1910. *U. S. Natl. Mus., Proc.* 38: 382. ♂, ♀.
- Biology: Finlayson, 1966. *Canad. Ent.* 98: 139.
- Taxonomy: Finlayson, 1975. *Ent. Soc. Canada, Mem.* 94: 70, 72, 126, 137 (final-instar larva).
- pectinatus** (Thomson). Eastern Greenland; Europe. Host: *Gynaephora groenlandica* (Hom.).
Anilasta pectinata Thomson, 1887. *Opusc. Ent.* 11: 1171. ♀.
- Limneria Deichmanni* Nielsen, 1907. *Meddel. om Gronland* 29: 386. ♂, ♀.
- Taxonomy: Roman, 1930. *Ann. and Mag. Nat. Hist.* (10) 5: 287.
- Biology: Johansen, 1910. *Meddel. om Gronland* 43: 44, 46. — Nielsen, 1910. *Meddel. om Gronland* 43: 56.
- planatus** (Viereck). Northern Idaho, s. B. C.
Campoplex (Diadegma) planata Viereck, 1925; 1926. *Canad. Ent.* 57 (9): 227 (key); 58 (11): 281. ♀. In the 1926 portion of Viereck's revision as "*Campoplex (Ecphora) planata*."
- plesius** (Viereck). Ont.
Campoplex (Hyposoter) plesius Viereck, 1925; 1926. *Canad. Ent.* 57 (8): 203 (key); 58 (8): 201. ♀.
- popofensis** (Ashmead). Que. w. to interior and s.w. Alaska, s. to Md., N. Mex., and n. Calif.; Europe. The European record is based upon my identification of a single male from the Netherlands in the U. S. Natl. Museum collection.
Amelocnusus popofensis Ashmead, 1902. *Wash. Acad. Sci., Proc.* 4: 237. ♀.
- Campoplex (Diadegma) ruficruris* Viereck, 1925; 1926. *Canad. Ent.* 57 (9): 227 (key); 58 (11): 280. ♀.

rivalis (Cresson), n. comb. N. S. w. to Man. and w. Wash., s. to s. Ala., central Tex., s. Ariz., and s. Calif.; Mexico s. to Costa Rica. Host: *Apanteles* sp., *Diacrisia virginica* (F.), *Estigmene acrea* (Drury), *Euchaetias egle* (Drury), *Hyphantria cunea* (Drury), *H. textor* (Harris), *Leptarctia californiae* (Wlk.).

Limneria rivalis Cresson, 1872. Amer. Ent. Soc., Trans. 41: 173. "♂" = ♀ ? (♀ misdet.). I regard Cresson's (1916) statement — type No. 1588, U. S. N. M., "male abdomen gone" as fixing as lectotype that specimen which Cresson regarded as the male of *rivalis* and which has been labeled as such in what appears to be the hand of R. A. Cushman. There is nothing in Cresson's introductory remarks to indicate that it was his intention only to select lectotypes for species having syntypes in the Academy of Natural Sciences, but Cushman (1925) regarded Cresson's statement about the type of *rivalis* as "not to be taken as type selection, for he is here merely quoting from Crawford and Rohwer's statement regarding the condition of the Cresson types in the National Museum." Cushman found that both syntypes lacked abdomens, but because the female symbol on Cresson's identification label appears to have been put there by Cresson, Cushman had no doubt about which of the two specimens Cresson had referred to as the male, and there are no grounds for his contention that Cresson did not select a lectotype. Therefore, Cushman's selection of Cresson's female as lectotype is invalid. The female is a specimen of *Hyposoter grahami* (Viereck), a species having the ovipositor much longer than typical species of *Hyposoter*. I am undecided about the sex of the *rivalis* lectotype, but Cresson's characterization of the abdomen (apparently of both sexes) as "subcompressed at tip" and his color description of the abdomen of the "male" would appear to indicate that the lectotype is a female.

Limneria pilosula Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 89. ♂, ♀. N. syn.

Limneria ephestiae Riley, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 158. Nomen nudum.

Limneria ephestriae Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 195. ♂, ♀. The type specimens bear labels with Riley's number 239x; the only notes pertaining to number 239x read: "*Campoplex* sp. ... parasitic on something feeding on wax — perhaps *Ephesia zee*." The discrepancies in the dates cited by Ashmead and by Riley and Howard (1890), would appear to indicate that Riley got his notes mixed up. N. syn.

Amorphota perrivalis Viereck, 1905. Kans. Acad. Sci., Trans. 19: 307. ♂, ♀. N. syn.

Campoplex (Hypothereutes) clarus Viereck, 1925; 1926. Canad. Ent. 57 (8): 204 (key); 58 (9): 224. ♀. N. syn.

Campoplex (Ameloctonus) cuneae Viereck, 1925; 1926. Canad. Ent. 57 (9): 223 (key); 58 (10): 257. ♀. N. syn.

Taxonomy: Cresson, 1916. Amer. Ent. Soc., Mem. 1: 1-2, 51. — Cushman, 1925. Ent. Soc. Wash., Proc. 27: 166.

Biology: Timberlake, 1912. U. S. Dept. Agr., Bur. Ent., Tech. Ser. 19: 72, 90-91. — Dustan, 1921. Ent. Soc. Nova Scotia, Proc. 6: 81-88. — Tothill, 1922. Canada Dept. Agr., Bul. (n. s.) 3: 59-74. — Baerg, 1928. Ark. Agr. Expt. Sta. Bul. 224: 23, 24. — Swain, 1937. Colo.-Wyo. Acad. Sci., Jour. 3 (2 and 3): 43. — Swain, Green, and Portman, 1938. Kans. Ent. Soc., Jour. 11: 7-9. — Daviault, 1942. La Foret Quebecoise 4: 398.

rubiginosus Cushman. Mass., Conn. Host: *Dasychira basiflava* (Pack.), *D. obliquata* (G. and R.). The final-instar larva constructs a false cocoon like that of *parorgyiae*; the true cocoon is spun inside the skin of the host larva.

Hyposoter rubiginosus Cushman, 1924. U. S. Natl. Mus., Proc. 64 (4): 11. ♂, ♀.

synchlora (Ashmead). N. H., Mass., N. Y., N. J., Pa., Md., w. N. C., Mich., Ill.? Host: *Synchlora* sp., *S. aerta* (F.).

Limneria rufa Riley, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 157. Nomen nudum.

Limneria rufa Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 193. ♂. Preocc. by Bridgman, 1882. N. syn. Townes (1945) incorrectly indicated that the syntypes are female and not male. Ashmead stated the type locality is Mo., but Riley and Howard (1890) indicated that the specimens are from South Pass, Ill. Riley's notes indicate that the specimens

were reared from larvae of what is now called *Synchlora aerta* which had been sent by T. A. E. Holcomb of South Pass, Ill. I have not been able to determine that there is or ever was a South Pass in Ill., and the matter merits further research because the syntypes of *rufa* were reared together with those of *Aplodes rubivora* Riley, presently a synonym of *Synchlora aerta*.

Ischnoscopus synchlora Ashmead, 1898. In Dimmock and Ashmead, Ent. Soc. Wash., Proc. 4: 168. ♂.

Limmerium Sarntheinii Dalla Torre, 1901. Cat. Hym., v. 3, p. 104. N. name for *L. rufa* Ashmead. N. syn.

Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 672.

xanthocerus (Viereck). N. H. s. to Va., w. to Mich.

Ameloctonus xanthocerus Viereck, 1921. Psyche 28: 70. ♀.

Genus BENJAMINIA Viereck

Benjaminia Viereck, 1912. U. S. Natl. Mus., Proc. 42: 633.

Type-species: *Charops fuscipennis* Provancher. Monotypic and orig. desig.

Zachrestoides Viereck, 1925. Canad. Ent. 57: 177.

Type-species: *Zachrestoides euphydryadis* Viereck. Orig. desig.

This is a small Holarctic genus. The species *B. fumigator* Aubert and *B. polonica* Sawoniewicz were rather recently described from Europe. The North American species which have been reared parasitize Nymphalidae of the genera *Euphydryas* and *Melitaea*. I have seen material that appears to represent three undescribed Nearctic species.

fuscipennis (Provancher). Southwestern Alta.?, w. Nev., n.e. and s. Calif. Host: *Euphydryas chalcedona* (D. and H.).

Charops fuscipennis Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 365. ♀.

euphydryadis (Viereck). Que., Mass. Host: *Euphydryas phaeton* (Drury), *Melitaea harrisii* Scud.

Zachrestoides euphydryadis Viereck, 1925; 1926. Canad. Ent. 57 (7): 179 (key); 58 (1): 3. ♀.

Genus ECHTHRONOMAS Foerster

Echthronomas Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 151.

Type-species: *Casinaria ochrostoma* Holmgren. By subsequent monotypy from inclusion by Schmiedeknecht, 1908.

This is a small genus of Holarctic and Oriental distribution.

Revision: Walley, 1944. Canad. Ent. 76: 158-159.

ochreofrons lexiaphaga Walley. Que. w. to s. B. C., s. to Md., W. Va., and Mich. Host:

Crambidia casta (Pack.), *Tigrioides bicolor* (Grt.).

Echthronomas ochreofrons lexiaphaga Walley, 1944. Canad. Ent. 76: 159. ♂, ♀.

Taxonomy: Finlayson, 1975. Ent. Soc. Canada, Mem. 94: 82, 83, 134, 137 (final-instar larva).

ochreofrons ochreofrons Cushman. Md. w. to n.e. Kans., s. to n. Fla.

Echthronomas ochreofrons Cushman, 1924. U. S. Natl. Mus., Proc. 64 (4): 12. ♀.

Genus CAMPOCTONUS Viereck

Campoctonus Viereck, 1912. U. S. Natl. Mus., Proc. 42: 633.

Type-species: *Limneria corrupta* Cresson. Monotypic and orig. desig.

Campoctonoides Viereck, 1925. Canad. Ent. 57: 177.

Type-species: *Campoctonoides currani* Viereck. Orig. desig.

This is a Neotropical and Nearctic genus of small to moderate size. No hosts are known. Mr. G. S. Walley has completed a revision of the Nearctic species which undoubtedly will be published before the appearance of this catalog.

belfragei (Ashmead). R. I. w. to s. Mich., s. to e. N. C. and Tex.

Limneria Belfragei Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 435. ♂.

- carinatus* (Provancher). Que. w. to n.w. Wis., s. to W. Va. and Mo.
Campoplex carinatus Provancher, 1879. Nat. Canad. 11: 150. ♀.
Campoctonoides beaulnei Viereck, 1925. Canad. Ent. 57 (7): 177 (key); 57 (12): 297. ♀.
- corruptus** (Cresson). Central Tex., Colo.
Limneria corrupta Cresson, 1872. Amer. Ent. Soc., Trans. 4: 172. ♀.
- currani** (Viereck). Que., Maine, N. H., N. Y., Pa., Ont., Mich.
Campoctonoides currani Viereck, 1925. Canad. Ent. 57 (7): 177 (key); 57 (12): 296. ♂, ♀.
- harringtoni** (Viereck). Que., N. H., Vt., Conn., Ont., Mich.
Campoctonoides harringtoni Viereck, 1925. Canad. Ent. 57 (7): 177 (key); 57 (12): 297. ♀.

Genus XANTHOCAMPOPLEX Morley

Xanthocampoplex Morley, 1913. Fauna Brit. India, Hym., v. 3, pt. 1, p. 445.

Type-species: *Xanthocampoplex orientalis* Morley. Monotypic and orig. desig. The type-species is regarded as a synonym of *X. nigromaculatus* (Cameron).

This is a large genus which is distributed throughout the world, but with species most numerous in the tropics. The hosts are lepidopterous caterpillars which do not conceal themselves when feeding.

Revision: Gupta and Gupta, 1971. Oriental Insects 5: 153-164 (Indian spp.).

orbitalis (Walley). Southern Mich., n.e. Kans., s. Sask., Alta.

Nepiera albomaculata Ashmead, 1922. In Crevecoer, Kans. Acad. Sci., Trans. 30: 387.

Nomen nudum.

Campoctonus orbitalis Walley, 1944. Canad. Ent. 76: 160. ♀.

Taxonomy: Townes, 1970 (1969). Amer. Ent. Inst., Mem. 13: 190 (generic placement).

Genus MICROCHAROPS Roman

Microcharops Roman, 1910. Ent. Tidskr. 31: 178.

Type-species: *Limneria taitica* Holmgren. Monotypic and orig. desig.

Charopsimorpha Viereck, 1912. U. S. Natl. Mus., Proc. 42: 635.

Type-species: *Charops tibialis* Cresson. Orig. desig.

Paracharops Blanchard, 1940. In Kreibohm de la Vega, Tucuman Estac. Expt. Agr., Rev. Indus. y Agr. 3: 170. Nomen nudum (fig. only).

Paracharops Blanchard, 1942. Soc. Cient. Argentina, An. 134: 107.

Type-species: *Paracharops annulatus* Blanchard. Monotypic and orig. desig.

This is a genus of small to moderate size which is not known with certainty to occur outside of the New World. The occurrence of *M. taitica* (Holmgren) in Tahiti has apparently not been confirmed by the collection of additional specimens, and it may be that the holotype is mislabeled.

bimaculata (Ashmead). Mo., Tex.; West Indies and Mexico s. to Argentina. Host: *Alabama argillacea* (Hbn.), *Plathypena scabra* (F.).

Charops bimaculata Ashmead, 1895. Zool. Soc. London, Proc. 65: 778. ♀.

Charops uninctus Ashmead, 1900. Ent. Soc. London, Trans. 48: 272. ♀.

Paracharops annulatus Blanchard, 1940. In Kreibohm de la Vega, Tucuman Estac. Expt. Agr., Rev. Indus. y Agr. 3: 170. Nomen nudum (fig. only).

Paracharops annulatus Blanchard, 1942. Soc. Cient. Argentina, An. 134: 107. "♂" = ♀.

Taxonomy: Townes and Townes, 1966. Amer. Ent. Inst., Mem. 8: 155 (syn.).

tibialis (Cresson). Conn., Va., Ga., s. Mich., Ill., n.e. Kans., Tex.; Mexico, Cuba, Costa Rica, Brazil. Host: *Symmerista albifrons* (J. E. S.), *S. canicosta* Franc., *Asterocampa celtis* (B. and L.), *A. clyton* (B. and L.).

Charops tibialis Cresson, 1872. Amer. Ent. Soc., Trans. 4: 173. ♂.

Limneria? insolens Cresson, 1874 (1873). Acad. Nat. Sci. Phila., Proc. 25: 386. ♂, ♀.

Charops apaturae Riley, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 155. Nomen nudum.

Charops apaturae Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 193. ♂.

Angitia (Unareolata) brasiliensis Lima, 1935. O Campo (for June, 1935), p. 20. ♂, ♀.

Preocc. in *Microcharops* by Szepligeti, 1906.

UNPLACED TAXA OF CAMPOPLEGINI

Pyrachmon(!) *idahoensis* Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 363. ♀. Northern Idaho. Neither of the two syntypes has been found.

SUBFAMILY CREMASTINAE

Members of this subfamily are internal parasites of Lepidoptera and, to a lesser extent, Coleoptera which are concealed while feeding (i.e. leaf rollers, borers, etc.). Dr. Clement Dasch is preparing a revision of the Nearctic species.

Genus XIPHOSOMELLA Szepligeti

Xiphosomella Szepligeti, 1905. In Wytsman, Gen. Ins., Fasc. 34, p. 4.

Type-species: *Xiphosomella brasiliensis* Szepligeti. Monotypic.

Pristomerus subg. *Areolopristomerus* Cushman, 1920. U. S. Natl. Mus., Proc. 58: 274.

Type-species: *Pristomerus* (*Areolopristomerus*) *smithi* Cushman. Orig. desig.

This large genus is mostly Neotropical. In addition to the two Nearctic species listed below, I know a third one from Florida which is apparently undescribed.

Revision: Johnson, 1969. Mich. Ent. 2: 27-28.

dubia (Brues). Mass., s.e. Ont., and Mich., s. to Fla. and Tex.

Pristomeridia? *dubia* Brues, 1911. Psyche 18: 24. ♀.

Pristomerus (*Areolopristomerus*) *smithi* Cushman, 1920. U. S. Natl. Mus., Proc. 58: 274. ♀.

setoni Johnson. N. C., Ky., S. C., Fla.

Xiphosomella setoni Johnson, 1969. Mich. Ent. 2: 27. ♂, ♀.

Genus PRISTOMERUS Curtis

Pristomerus Curtis, 1836. Brit. Ent., v. 13, no. 624.

Type-species: *Pachymerus vulnerator* Gravenhorst. Monotypic and orig. desig. The type-species designation is Gravenhorst's identification of *Ichneumon vulnerator* Panzer.

Pristomeridia Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 100.

Type-species: *Porizon agilis* Cresson. Monotypic and orig. desig.

Pristocelus Szepligeti, 1905. In Wytsman, Gen. Ins., fasc. 34, p. 48.

Type-species: *Pristocelus atriceps* Szepligeti. Monotypic.

Neopristomerus Viereck, 1912. U. S. Natl. Mus., Proc. 43: 592.

Type-species: *Pristomerus appalachianus* Viereck. Orig. desig.

Nesanomalon Morley, 1913. Rev. Ichn. Brit. Mus., v. 2, p. 56.

Type-species: *Nesanomalon dimidiatum* Morley. Monotypic.

Revision: Cushman, 1920. U. S. Natl. Mus., Proc. 58: 272-280.

austrinus Townes and Townes. Mass. s. to Ga., w. to Ind. and Tex.; Mexico, Guatemala. Host:

Acrobasis caryivorella Rag., *A. vaccinii* Riley, *Epiblema scudderianum* (Clem.), *Grapholitha molesta* (Bsk.), *Gretchena bolliana* (Sling.), *Gypsonoma haimbachiana* (Kft.), *Laspeyresia pomonella* (L.).

Porizon? *agilis* Cresson, 1872. Amer. Ent. Soc., Trans. 4: 175. ♀. Preocc. by Holmgren, 1860.

Pristomerus austrinus Townes and Townes, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 386. N. name for *Porizon agilis* Cresson.

Biology: Franklin and Morse, 1914. Mass. Agr. Expt. Sta., Bul. 150: 56. — Franklin, 1915; 1916; 1917. Mass. Agr. Expt. Sta., Bul. 160: 109; 168: 39-40; 180: 229.

baumhoferi Cushman. Ont., S. Dak. w. to Ida., s. to Tex. and Ariz. Host: *Rhyacionia frustrana bushnelli* (Bsk.), *Periploca ceanothiella* (Cosens).

Pristomerus baumhoferi Cushman, 1930 (1929). U. S. Natl. Mus., Proc. 76 (25): 9. ♂, ♀.

euryptychiae Ashmead. N. Y. s. to Alab., w. to Wis., Kans., and Tex. Host: *Ancylistis comptana* (Froel.), *Ecdytolopha insiticiaria* Zeller, *Epiblema otiosanum* (Clem.), *E. strenuanum* (Wlk.), *Grapholitha molesta* (Bsk.), *Gypsonoma haimbachiana* (Kft.), *Laspeyresia*

- pomonella* (L.), *Proteoteras willingana* (Kft.), *Acrobasis caryivorella* Rag., *A. juglandis* (LeB.), *Vanessa atalanta* (L.).
- Pristomerus mellaethorax* Riley, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 156. Nomen nudum.
- Pristomerus euryptychiae* Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 192. ♀. The type locality is Kirkwood, Mo.; Ashmead erroneously stated that it is D. C.
- Pristomerus* (*Pristomerus*) *ocellatus* Cushman, 1920. U. S. Natl. Mus., Proc. 58: 277. ♂, ♀.
- Biology: Pepper and Driggers, 1934. Ent. Soc. Amer., Ann. 27: 596. —Haden, 1935. Del. Agr. Expt. Sta., Bul. 194: 12-41. —Rice, 1937. Jour. Econ. Ent. 30: 112. —Allen, Holloway, and Haeussler, 1940. U. S. Dept. Agr. Cir. 561: 12, 58.
- laticeps** Cushman. Conn., N. Y., N. J., Ont., Va.
- Pristomerus* (*Pristomerus*) *laticeps* Cushman, 1920. U. S. Natl. Mus., Proc. 58: 277. ♀.
- Pristomerus* (*Pristomerus*) *idei* Viereck, 1925. Canad. Ent. 57: 74. ♀.
- minutus** Cushman. Calif. Host: *Coleotechnites milleri* (Bsk.).
- Pristomerus* (*Pristomerus*) *minutus* Cushman, 1920. U. S. Natl. Mus., Proc. 58: 279. ♀.
- olamonus** Viereck. Mass. s. to D. C., w. to S. Dak. and Kans. Ecology: Occurs on flowers of *Solidago* in late summer and fall.
- Pristomerus aciculatus* Ashmead, 1900 (1899). In Smith, N. J. State Bd. Agr., Ann. Rpt. 27, Sup., p. 584. Nomen nudum.
- Pristomerus olamonus* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 274. ♀.
- Pristomerus* (*Pristomerus*) *fuscipennis* Cushman, 1920. U. S. Natl. Mus., Proc. 58: 275. ♂, ♀.
- spinator** (Fabricius). Mass. s. to Fla., w. to Alta. and Calif.; Mexico, Virgin Islands, Honduras, Guyana?, Brazil; Hawaii. Host: *Acrobasis caryivorella* Rag., *A. vaccinii* Riley, *Canarsia* sp., *Elasmopalpus lignosellus* (Zell.), *Lorostege sticticalis* (L.), *Heliothis virescens* (F.), *H. zea* (Bod.), *Spodoptera frugiperda* (J. E. S.), *S. praefica* (Grt.), *Trichoplusia ni* (Hbn.), *Phthorimaea operculella* (Zell.), *Colias eurytheme* Bdv.
- Ophion spinator* Fabricius, 1804. Systema Piezatorum, p. 138. ♀. Temporarily preocc. in *Ichneumon* by Fabricius, 1798.
- Ichneumon femorator* Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 261; 9: 311. N. name for *O. spinator* Fabricius. Preocc. by Kirby, 1802.
- Pristomerus pacificus* Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 370. ♀.
- Pristomerus appalachianus* Viereck, 1905. Kans. Acad. Sci., Trans. 19: 299. ♂, ♀.
- Pristomerus coloradensis* Brues, 1911. Psyche 18: 23. ♀. N. syn.
- Pristomerus* (*Neopristomerus*) *melleus* Cushman, 1920. U. S. Natl. Mus., Proc. 58: 279. ♂, ♀. N. syn.
- Pristomerus Bollowi* Enderlein, 1921. Stettin. Ent. Ztg. 82: 9. ♂. N. syn.
- Neopristomerus woodworthi* Viereck, 1921. Ent. News 32: 172. ♂, ♀. N. syn.
- Taxonomy: Townes and Townes, 1966. Amer. Ent. Inst., Mem. 8: 158 (Syn.).
- Biology: Luginbill, 1928. U. S. Dept. Agr., Tech. Bul. 34: 65. —Vickery, 1929. U. S. Dept. Agr., Tech. Bul. 138: 39. —Leuck, 1966. Jour. Econ. Ent. 59: 800.

Genus DIMOPHORA Foerster

- Dimophora* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 155.
- Type-species: *Dimophora robusta* Brischke. Desig. by Viereck, 1914 from three species included by Brischke, 1880.
- Dimophorus* Thomson, 1890. Opusc. Ent. 14: 1356. Emend.
- Oligotmema* Cushman, 1920. U. S. Natl. Mus., Proc. 58: 280.
- Type-species: *Oligotmema prima* Cushman. Monotypic and orig. desig.
- prima** (Cushman). Ont., Colo., Idaho, Utah, Ariz. The type locality is Fort Collins, Colo.
- Oligotmema prima* Cushman, 1920. U. S. Natl. Mus., Proc. 58: 281. ♀.
- Taxonomy: Cushman, 1922. U. S. Natl. Mus., Proc. 60 (21): 22.

Genus EIPHOSOMA Cresson

Eiphosoma Cresson, 1865. Ent. Soc. Phila., Proc. 4: 52.

Type-species: *Eiphosoma annulatum* Cresson. Desig. by Viereck, 1914.

Xiphosoma Marshall, 1892. Soc. Ent. de France, Ann. 61: 65. Emend.

Brachixiphosoma Viereck, 1912. U. S. Natl. Mus., Proc. 42: 147.

Type-species: *Eiphosoma pyralidis* Ashmead. Monotypic and orig. desig.

Chartionedys Enderlein, 1921. Stettin. Ent. Ztg. 82: 3.

Type-species: *Chartionedys compressum* Enderlein. Orig. desig.

Hanauella Enderlein, 1921. Stettin. Ent. Ztg. 82: 6.

Type-species: *Hanauella armillata* Enderlein. Monotypic and orig. desig.

This is a very large genus of the New World, most of the species being Neotropic. Pyraloidea appear to be the principle hosts.

Revision: Cushman, 1920. U. S. Natl. Mus., Proc. 58: 269-272.

dentator (Fabricius). Southern Tex.; West Indies; Mexico s. to Argentina. Host: *Minorista flavidissimalis* (Grt.), *Ufa rubidinella* (Zell.).

Ophion dentator Fabricius, 1804. Systema Piezatorum, p. 138. [female].

Eiphosoma annulata Cresson, 1865. Ent. Soc. Phila., Proc. 4: 54. ♂, ♀.

Eiphosoma bruesi Cushman, 1920. U. S. Natl. Mus., Proc. 58: 272. ♀. N. syn.

Eiphosoma Saueri Lima, 1953 (1951). [Rio de Janeiro] Mus. Nac., Arq. 42: 188. ♂, ♀.

Taxonomy: Townes and Townes, 1966. Amer. Ent. Inst., Mem. 8: 162 (syn.).

nigrolineatum (Brulle). Fla.; Mexico, Guatemala, French Guiana, Guyana, Peru, Paraguay.

Collyria nigro-lineata Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 178. ♀.

Eiphosoma mexicana Cresson, 1874 (1873). Acad. Nat. Sci. Phila., Proc. 25: 380. ♀.

Taxonomy: Townes and Townes, 1966. Amer. Ent. Inst., Mem. 8: 163 (syn.).

pyralidis Ashmead. N. Y. s. to N. C., w. to Kans. Host: Pyralid on *Solidago*.

Eiphosoma pyralidis Riley, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 156. Nomen nudum.

Eiphosoma pyralidis Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 191. ♂.

septentrionale Brues. Conn. s. to S. C., w. to Ill. and Ala.

Eiphosoma septentrionale Brues, 1911. Psyche 18: 22. ♀.

texanum Cresson. Tex., Utah, Ariz.; Mexico, Trinidad, Guyana, Brazil.

Eiphosoma texana Cresson, 1872. Amer. Ent. Soc., Trans. 4: 176. ♀.

Genus PSEUDERIPTERNUS Viereck

Casinaria subg. *Pseuderipternus* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 269.

Type-species: *Podogaster radiolatus* Provancher. Monotypic.

This genus may occur in both South and North America; a USNM specimen of a large undescribed species was caught by the U. S. Public Health Service aboard an airplane which had arrived at Miami, Fla. from Buenos Aires, Argentina via Lima, Peru and Guayaquil, Ecuador. The species are collected among coarse grasses along lake shores or in salt marshes. Schoenobiine pyralids may be the usual hosts.

Revision: Cushman, 1917. U. S. Natl. Mus., Proc. 53: 505-508.

brevicauda Cushman. N. H., N. Y., Ont., Mich., Ohio. Host: *Schoenobius melinellus* (Clem.).

Pseuderipternus brevicauda Cushman, 1917. U. S. Natl. Mus., Proc. 53: 506. ♂, ♀.

elongatus (Davis). Mass., N. J., Ga. Ecology: Occurs in salt marshes on *Spartina*.

Ateleuti (!) *elongatus* Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 362. ♀.

Pseuderipternus gracilipes Cushman, 1917. U. S. Natl. Mus., Proc. 53: 507. ♂, ♀.

radiolatus (Provancher). Que. s. to Md.

Podogaster radiolatus Provancher, 1875. Nat. Canad. 7: 329. ♀.

Genus TANYCHELA Townes

Tanychela Townes, 1971. Amer. Ent. Inst., Mem. 17: 19.

Type-species: *Tanychela aurea* Townes. Monotypic and orig. desig.

The type-species occurs in southeastern Brazil. An undescribed species occurs in California; it has been reared from a stream-dwelling pyralid, *Argyraetis* sp.

Genus CREMASTUS Gravenhorst

Cremastus Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 730.

Type-species: *Cremastus spectator* Gravenhorst. Desig. by Westwood, 1840.

Celor Kokujev, 1901. Soc. Ent. Rossicae, Horae 35: 210.

Type-species: *Celor semenowi* Kokujev. Monotypic.

Pseudocremastus Szepligeti, 1905. In Wytsman, Gen. Ins., fasc. 34, p. 50.

Type-species: *Pseudocremastus radialis* Szepligeti. Monotypic.

Zaleptopygus Viereck, 1911. U. S. Natl. Mus., Proc. 41: 294.

Type-species: *Zaleptopygus obereae* Viereck. Monotypic and orig. desig.

According to Townes (1971) this is a large Holarctic genus for which the usual hosts are coleopterous stem borers or gall makers, although there are also rearings recorded from lepidopterous larvae.

Taxonomy: Townes, 1958. Insects of Micronesia, v. 2, no. 2, p. 65. —Townes, 1971. Amer. Ent. Inst., Mem. 17: 16.

anomalus Cushman. Colo.

Cremastus (Zaleptopygus) anomalus Cushman, 1917. U. S. Natl. Mus., Proc. 53: 542. ♀.

bilineatus Cushman. N. J., Mich.

Rhythmnotus bilineatus Ashmead, 1900 (1899). In Smith, N. J. State Bd. Agr., Ann. Rpt. 27, Sup., p. 581. Nomen nudum.

Cremastus (Zaleptopygus) bilineatus Cushman, 1917. U. S. Natl. Mus., Proc. 53: 545. ♂, ♀.

californicus (Provancher). Calif. Barron (1975) placed this species in *Cremastus*.

Porizon californicum Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 364. ♂.

Taxonomy: Barron, 1975. Nat. Canad. 102: 438-439.

champlaini Cushman. N. Y., Pa., Va., Mich., S. Dak. Host: "*Elaphidion*" sp.

Cremastus (Zaleptopygus) champlaini Cushman, 1922. U. S. Natl. Mus., Proc. 60 (21): 22. ♂, ♀.

cressoni Kerrich. Colo.

Porizon albipennis Cresson, 1865. Ent. Soc. Phila., Proc. 4: 287. ♀. Preocc. by Zetterstedt, 1838.

Cremastus cressoni Kerrich, 1959. Ann. and Mag. Nat. Hist. (13) 2: 50. N. name for *P. albipennis* Cresson.

dorcaschetae Cushman. N. Y. Host: *Dorcaschema nigrum* (Say).

Cremastus (Zaleptopygus) dorcaschetae Cushman, 1920. U. S. Natl. Mus., Proc. 58: 287. ♂, ♀.

Biology: Blackman and Stage, 1924. N. Y. State Col. Forestry, Tech. Pub. 17: 182.

egregiacolor (Viereck). Kans., Colo., N. Mex.

Thersilochus egregiacolor Viereck, 1905. Kans. Acad. Sci., Trans. 19: 302. ♀.

Cremastus (Zaleptopygus) terebratus Cushman, 1917. U. S. Natl. Mus., Proc. 53: 539. ♀.

fuscipennis (Cresson). Kans., Tex., Colo.

Porizon fuscipennis Cresson, 1865. Ent. Soc. Phila., Proc. 4: 287. ♀.

Porizon audax Cresson, 1872. Amer. Ent. Soc., Trans. 4: 174. ♂.

gallaecola Cushman. Ont., Va., Tex. Host: *Gnorimoschema gallaesolidaginis* (Riley).

Cremastus (Zaleptopygus) gallaecola Cushman, 1917. U. S. Natl. Mus., Proc. 53: 546. ♂, ♀.

hyalinipennis (Cresson). N. J. s. to Fla., w. to S. Dak. and Tex.

Porizon hyalinipennis Cresson, 1872. Amer. Ent. Soc., Trans. 4: 174. ♂, ♀.

incompletus (Provancher). Que. s. to N. C., w. to Man.

Mesoleptus incompletus Provancher, 1875. Nat. Canad. 7 (9): 270. ♂, ♀.

Atractodes fusiformis Provancher, 1875. Nat. Canad. 7 (11): 332. ♀.

Morphology: Peck, 1937. Canad. Jour. Res., Sect. D. (Zool. Sci.) 15: 245, 246, 149, 250.

mordellistenae (Cushman). Colo. Host: *Mordellistena aemula* LeC., *M. morula* LeC.
Cremastus mordellistenae Ashmead, 1895. In Baker, Ent. News 6: 29. Nomen nudum.
Cremastus (Zaleptopygus) mordellistenae Cushman, 1917. U. S. Natl. Mus., Proc. 53: 539.
 ♂, ♀.

Taxonomy: Cushman, 1927. U. S. Natl. Mus., Proc. 72 (13): 20-21.

nigriclypealis Cushman. N. Mex.

Cremastus (Zaleptopygus) nigriclypealis Cushman, 1917. U. S. Natl. Mus., Proc. 53: 543.
 ♀.

nordi Townes. Mich. Host: *Oberea shaumii* LeC.

Cremastus nordi Townes, 1965. Mich. Acad. Sci., Arts, and Letters, Papers 50: 105. ♂, ♀.

orbitalis (Cresson). Md., Ala., Tex.

Porizon orbitalis Cresson, 1872. Amer. Ent. Soc., Trans. 4: 174. ♂, ♀.

orbis (Davis). Conn., N. Y., Pa., Mich., Ill., La. Host: *Oberea tripunctata* Swed.

Leptopygus orbis Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 365. ♂, ♀.

Zaleptopygus obereae Viereck, 1911. U. S. Natl. Mus., Proc. 41: 295. ♂, ♀.

Taxonomy: Cushman, 1920. U. S. Natl. Mus., Proc. 58: 284.

quintilis (Viereck). Kans. Walkley (1967) apparently saw no specimens of this species before deciding to place it with a query in *Cremastus* rather than *Trathala*; it may prove to belong in the latter genus.

Thersilochus mimeticus Viereck, 1905. Kans. Acad. Sci., Trans. 19: 300. ♀.

Thersilochus quintilis Viereck, 1905. Kans. Acad. Sci., Trans. 19: 301. ♂.

Taxonomy: Walkley, 1967. In Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2, Sup. 2, p. 207.

rohweri Cushman. Pa.

Cremastus (Zaleptopygus) rohweri Cushman, 1917. U. S. Natl. Mus., Proc. 53: 541. ♀.

snowi (Viereck). Kans. Walkley (1967) apparently saw no specimens of this species before deciding to place it with a query in *Cremastus* rather than *Trathala*; it may prove to belong in the latter genus.

Thersilochus snowi Viereck, 1905. Kans. Acad. Sci., Trans. 19: 299. ♀.

Taxonomy: Walkley, 1967. In Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2, Sup. 2, p. 207.

vierecki (Cockerell). N. Mex.

Porizon vierecki Cockerell, 1903. Ann. and Mag. Nat. Hist. (7) 12: 200. ♂.

Genus DOLICHOPSELEPHUS Ashmead

Dolichopselephus Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 23.

Type-species: *Dolichopselephus cockerelli* Ashmead. Monotypic.

cockerelli Ashmead. Sask., Colo.

Dolichopselephus cockerelli Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 23. ♀.

Genus TRATHALA Cameron

Trathala Cameron, 1899. Manchester Lit. and Phil. Soc., Mem. and Proc. 43: 122.

Type-species: *Trathala striata* Cameron. Monotypic.

Epicremastus Szepliget, 1905. In Wytzman, Gen. Ins., fasc. 34, p. 51.

Type-species: *Epicremastus concolor* Szepliget. Monotypic.

Paurolexis Cameron, 1906. Bombay Nat. Hist. Soc., Jour. 17: 282.

Type-species: *Paurolexis flavus* Cameron. Monotypic.

Haristaeus Cameron, 1910 (1909). Amer. Ent. Soc., Trans. 35: 442.

Type-species: *Haristaeus nigrifrons* Cameron. Monotypic.

This large genus is worldwide in distribution.

Taxonomy: Townes, 1958. Insects of Micronesia, v. 2, no. 2, p. 66. —Townes, 1971. Amer. Ent. Inst., Mem. 17: 17-18.

aciculata (Davis). Mass., Conn., Mich., Ga.

Cremastus aciculatus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 364. ♂.

brunneipennis (Walley), n. comb. Ont.

Cremastus (Zaleptopygus) brunneipennis Walley, 1933. Canad. Ent. 65: 253. ♂, ♀.

cleridivora (Cushman). N. C., Ga., Mo., Kans., Idaho. Host: *Enoclerus quadriguttatus* (Oliv.), *E. sphegus* (F.), *Temnochila virescens* (F.).

Cremastus (Zaleptopygus) cleridivorus Cushman, 1917. U. S. Natl. Mus., Proc. 53: 534. ♀.

delicata (Cresson). Tex.

Porizon? delicatus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 176. ♂.

flavoorbitalis (Cameron). Japan s. to Australia, w. to India; Hawaii. Introduced between 1929 and 1933 in Mass., R. I., Conn., N. Y., Ont., and Ohio and in 1935 and 1936 in Va.; recoveries were made in Mass., R. I., Ont., Ohio, and Va., but the species apparently has not persisted anywhere in North America. Host: *Ostrinia nubilalis* (Hbn.), *Grapholitha molesta* (Bsk.). The hosts listed were the target species for releases of *T. flavoorbitalis* in North America.

Tartia flavo-orbitalis Cameron, 1907. Bombay Nat. Hist. Soc., Jour. 17: 589. ♀.

Cremastus hymeniae Viereck, 1911. U. S. Natl. Mus., Proc. 40: 189. ♂, ♀.

Diaparsis coreanus Uchida, 1928. Hokkaido Imp. Univ., Faculty Agr., Jour. 21: 285. ♂, ♀.

Diaparsis coreanus var. *kondonis* Uchida, 1928. Hokkaido Imp. Univ., Faculty Agr., Jour. 21: 286. ♂, ♀.

Taxonomy: Cushman, 1933. Ent. Soc. Wash., Proc. 35: 73.

Biology: Bradley and Burgess, 1934. U. S. Dept. Agr. Tech. Bul. 441: 1-15.

Morphology: Peck, 1937. Canad. Jour. Res., Sect. D (Zool. Sci.) 15: 245-247.

granulata (Davis). Mich.

Cremastus granulatus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 365. ♂, ♀.

Taxonomy: Cushman, 1920. U. S. Natl. Mus., Proc. 58: 284 (lectotype selection).

hartii (Ashmead). N. J., D. C.?, Ky.?, Ill.

Cremastus hartii Ashmead, 1895. Ill. State Lab. Nat. Hist., Bul. 4: 277. ♂, ♀.

Taxonomy: Hart, 1895. Ill. State Lab. Nat. Hist., Bul. 4: 271 (collecting locality and date).

—Cushman, 1930 (1929). U. S. Natl. Mus., Proc. 76 (25): 11 (discussion of syntypes, excluding those in Ashmead collection).

latithorax (Cushman). Tex.

Cremastus (Zaleptopygus) latithorax Cushman, 1920. U. S. Natl. Mus., Proc. 58: 286. ♀.

nemoralis (Davis). Mass., N. Y., Mich.

Cremastus nemoralis Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 364. ♂, ♀.

Taxonomy: Cushman, 1920. U. S. Natl. Mus., Proc. 58: 284. (discussion of syntypes).

obesa (Cushman). Md.

Cremastus (Zaleptopygus) obesus Cushman, 1920. U. S. Natl. Mus., Proc. 58: 285. ♀.

plesia (Cushman). Mich.

Cremastus (Zaleptopygus) plesius Cushman, 1917. U. S. Natl. Mus., Proc. 53: 535. ♀.

protracta (Cushman), n. comb. Wash. Ecology: The host of the holotype was reared from *Aster eastoni*. Host: *Coleophora* sp.

Cremastus protractus Cushman, 1935. Wash. Acad. Sci., Jour. 25: 563. ♀.

retiniae (Cresson). N. Y., Md.?, D. C.?, Va.?, Host: *Rhyacionia rigidana* (Fern.).

Cremastus retiniae Cresson, 1880. In Comstock, U. S. Dept. Agr., Ann. Rpt. for 1879, p. 238. ♂. Notes in the U. S. Natl. Museum indicate that Comstock reared two specimens, one of which was placed in the Cresson collection and may actually be the one upon which Cresson based his description. The notes refer to a letter dated June 9, 1880 which Comstock received from Cresson and a letter dated June 23, 1880 which Comstock sent to Cresson.

Taxonomy: Cushman, 1917. U. S. Natl. Mus., Proc. 53: 537 (discussion of the broken specimen presumed to be the holotype and its comparison with specimens which apparently were not reared from *Rhyacionia rigidana*).

rosae (Cushman). N. J., Va.

Cremastus (Zaleptopygus) rosae Cushman, 1917. U. S. Natl. Mus., Proc. 53: 536. ♀.

- rostrata** (Cushman). Mass., Conn., N. Y., Pa., Md. Ecology: Occurs on flowers of *Solidago*.
Cremastus (Zaleptopygus) rostratus Cushman, 1917. U. S. Natl. Mus., Proc. 53: 532. ♀.
- similis** (Cushman). R. I., Conn., N. J., Pa., N. C., Idaho.
Cremastus (Zaleptopygus) similis Cushman, 1917. U. S. Natl. Mus., Proc. 53: 535. ♀.
- tetralophae** (Cushman). Fla.
Cremastus (Zaleptopygus) tetralophae Cushman, 1917. U. S. Natl. Mus., Proc. 53: 537. ♂, ♀.

Genus NELEOTHYMUS Foerster

Neleothymus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 200.

Type-species: *Neleothymus* (?) *rufo-ornatus* Cameron. By subsequent monotypy from inclusion by Cameron, 1905.

According to Townes (1971) only two species are known.

Taxonomy: Townes, 1958. Insects of Micronesia, v. 2, no. 2, p. 68. —Townes, 1971. Amer. Ent. Inst., Mem. 17: 16-17.

attenuatus (Cushman). S. C., Tex. Townes (1971) said that *N. attenuatus* may be only subspecifically distinct from the type-species.

Cremastus (Zaleptopygus) attenuatus Cushman, 1920. U. S. Natl. Mus., Proc. 58: 286. ♂, ♀.

Genus NEOCREMASTUS Cushman

Neocremastrus Cushman, 1917. U. S. Natl. Mus., Proc. 53: 509.

Type-species: *Porizon stigmaterus* Cresson. Monotypic and orig. desig.

Townes (1971) said he has seen specimens of five Nearctic species, three of them being undescribed. He also speculated that the genus probably occurs in Eurasia.

Taxonomy: Townes, 1958. Insects of Micronesia, v. 2, no. 2, p. 66. —Townes, 1971. Amer. Ent. Inst., Mem. 17: 18.

mellipes (Provancher). Que., N. Y., N. J.

Atractodes mellipes Provancher, 1875. Nat. Canad. 7: 332. ♀.

stigmaterus (Cresson). Tex.

Porizon stigmaterus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 174. ♂, ♀.

Genus TEMELUCHA Foerster

Temelucha Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 148.

Type-species: *Porizon macer* Cresson. Desig. by Perkins, 1962 from four species included by Ashmead, 1900.

Paracremastus Szepliget, 1900. Termes. Fuzetek 23: 28.

Type-species: *Paracremastus genalis* Szepliget. Monotypic.

Tarytia Cameron, 1907. Bombay Nat. Hist. Soc., Jour. 17: 587.

Type-species: *Tarytia basimacula* Cameron. Desig. by Viereck, 1914.

Androna Cameron, 1911. Transvaal Mus., Ann. 2: 185. Syn. uncertain.

Type-species: *Androna fuscicornis* Cameron. Desig. by Viereck, 1914.

Cremastus subg. *Cremastidea* Viereck, 1912. U. S. Natl. Mus., Proc. 43: 587.

Type-species: *Cremastidea (Cremastidea) chinensis* Viereck. Monotypic and orig. desig. The type-species is regarded as a synonym of *T. biguttula* (Matsumura).

Neocremastrus Meyer, 1930. Rev. Russe d'Ent. 24: 67. Preocc. by Cushman, 1917; syn. uncertain.

Type-species: *Neocremastrus asiaticus* Meyer. Monotypic.

This very large genus is worldwide in distribution. The species typically parasitize lepidopterous larvae which conceal themselves in feeding.

Revision: Cushman, 1917. U. S. Natl. Mus., Proc. 53: 509-532 (as *Cremastus*, subg. *Crematus*).

Taxonomy: Townes, 1958. Insects of Micronesia, v. 2, no. 2, p. 68.

brevicauda (Cushman). N. Mex.

Cremastus (*Cremastus*) *brevicauda* Cushman, 1917. U. S. Natl. Mus., Proc. 53: 528. ♂, ♀.

brevinervis (Cushman). Ariz.

Cremastus (*Cremastus*) *brevinervis* Cushman, 1920. U. S. Natl. Mus., Proc. 58: 282. ♀.

brevipetiolus (Cushman). N. Y., N. J., Pa., Md., Va.

Cremastus (*Cremastus*) *brevipetiolus* Cushman, 1917. U. S. Natl. Mus., Proc. 53: 525. ♂, ♀.

Temelucha brevipetiolata (!) Walkley, 1967. In Krombein et al., U. S. Dept. Agr., Agr. Monog. 2, Sup. 2, p. 208.

bruneiceps (Cushman). D. C.

Cremastus (*Cremastus*) *bruneiceps* Cushman, 1920. U. S. Natl. Mus., Proc. 58: 283. ♀.

carpocapsae (Cushman). Ohio. Host: *Grapholitha molesta* (Bsk.), *Laspeyresia pomonella* (L.).

Cremastus carpocapsae Cushman, 1930 (1929). U. S. Natl. Mus., Proc. 76: 11. ♂, ♀.

chilonis (Cushman). Mich., Sask., Alta. Host: *Stenochilo forbesellus* (Fern.).

Cremastus chilonis Cushman, 1935. Wash. Acad. Sci., Jour. 25: 562. ♂, ♀.

Biology: Frohne, 1939. Amer. Micros. Soc., Trans. 58: 233, 325, 347.

cookii (Weed). N. Y. w. to Idaho, s. to Va., Kans. and Ariz. Host: *Ancylics comptana* (Froel.).

Cremastus cookii Weed, 1888. Ent. Amer. 4: 150. ♂, ♀.

Cremastus cookii var. *rufus* Weed, 1888. Ent. Amer. 4: 151. ♂.

Temelucha websteri Ashmead, 1900 (1899). In Smith, N. J. State Bd. Agr., Ann. Rpt. 27, Sup., p. 584. Nomen nudum.

Biology: Fink, 1932. Jour. Agr. Res. 44: 555, 556. —Haden, 1935. Univ. Del. Agr. Expt. Sta., Bul. 194: 29-42. —Summerland, 1938. Kans. Acad. Sci., Trans. 40: 165.

epagoges (Cushman). N. J. s. to S. C., w. to Wis. and Kans. Host: *Archips cerasivoranus*

(Fitch), *Sparganothis sulfureana* (Clem.), *Epiblema strenuanum* (Wlk.), *Grapholitha molesta* (Bsk.), *Laspeyresia pomonella* (L.), *Rhyacionia frustrana* (Comst.), *R. frustrana bushnellii* (Bsk.), *Mompha eloisella* (Clem.), "Phalonia" *oenotherana* (Riley).

Cremastus (*Cremastus*) *epagoges* Cushman, 1917. U. S. Natl. Mus., Proc. 53: 531. ♂, ♀.

Biology: Isely and Ackerman, 1923. Ark., Univ., Agr. Expt. Sta. Bul. 189: 47. —Cushman, 1927. Jour. Agr. Res. 34: 618. —Haden, 1935. Del. Agr. Expt. Sta. Bul. 194: 22-41. —Rice, 1937. Jour. Econ. Ent. 30: 108-115.

evetriae (Cushman). N. Mex., Ariz. Host: *Rhyacionia frustrana bushnellii* (Bsk.).

Cremastus (*Cremastus*) *evetriae* Cushman, 1917. U. S. Natl. Mus., Proc. 53: 530. ♀.

facilis (Cresson). Mass., Ont., and Iowa, s. to Fla., Tex., and N. Mex. Host: *Crambus topiarius* Zell., *Hellula undalis* (F.), *Ostrinia obumbratalis* (Led.), *O. penitatis* (Grt.), *Isophrictis similisella* (Chamb.).

Porizon facilis Cresson, 1872. Amer. Ent. Soc., Trans. 4: 175. ♂, ♀.

Porizon macer Cresson, 1872. Amer. Ent. Soc., Trans. 4: 175. ♂, ♀.

Biology: Franklin, 1921. Mass. Agr. Expt. Sta. Bul. 206: 159.

ferruginea (Davis). Mass., S. Dak., and Idaho, s. to Fla. and N. Mex. Host: *Diatraea crambidoides* Grt.

Cremastus ferrugineus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 364. ♂, ♀.

Atrometus angitoides Viereck, 1905. Kans. Acad. Sci., Trans. 19: 311. ♀.

Cremastus (*Cremastus*) *graciliventris* Cushman, 1917. U. S. Natl. Mus., Proc. 53: 522. ♀.

Taxonomy: Cushman, 1920. U. S. Natl. Mus., Proc. 58: 282.

flaviceps (Cushman). Tex., Colo.

Cremastus (*Cremastus*) *flaviceps* Cushman, 1917. U. S. Natl. Mus., Proc. 53: 521. ♂, ♀.

forbesi (Weed). Mass. s. to S. C., w. to S. Dak. and Colo. Host: *Argyrotaenia velutinana* (Wlk.),

Acleris minuta (Rob.), *Sparganothis sulfureana* (Clem.), *Epiblema strenuanum* (Wlk.),

Episimus argutus (Clem.), *Grapholitha molesta* (Bsk.), *Rhopobota naevana* (Hbn.),

Aroga trialbamaculella (Chamb.), *Filatima persicaeella* (Murtf.), *Coleophora*

fuscedinella Zell.

Cremastus forbesi Weed, 1887. Ill. State Lab. Nat. Hist., Bul. 3: 42. ♀.

Cremastus forbesii Dalla Torre, 1901. Cat. Hym., v. 3, p. 34. Emend.

Cremastus (*Cremastus*) *tortricidis* Cushman, 1917. U. S. Natl. Mus., Proc. 53: 528. ♀.

- Taxonomy: Walkley, 1958. *In* Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2, Sup. 1, p. 61 (syn.).
- Biology: Driggers, 1930. N. J. Agr. Expt. Sta. Bul. 510: 17. —Haden, 1935. Del. Agr. Expt. Sta. Bul. 194: 16-35.
- gracilipes** (Cushman). Ont., Pa., Tex. Host: *Dicymolomia julianalis* (Wlk.), *Epiblema strenuatum* (Wlk.).
- Cremastus* (*Cremastus*) *gracilipes* Cushman, 1917. U. S. Natl. Mus., Proc. 53: 520. ♀.
- Taxonomy: Cushman, 1930 (1929). U. S. Natl. Mus., Proc. 76 (25): 10.
- gracilis** (Cushman). N. J., Ky.
- Cremastus* (*Cremastus*) *gracilis* Cushman, 1917. U. S. Natl. Mus., Proc. 53: 519. ♀.
- hamiltonensis** (Viereck). Kans.
- Thersilochus hamiltonensis* Viereck, 1905. Kans. Acad. Sci., Trans. 19: 301. ♂.
- grapholithae** (Cushman). N. J. s. to Fla., w. to Kans. and Tex. Host: *Grapholitha molesta* (Bsk.), *Laspeyresia caryana* (Fitch).
- Cremastus grapholithae* Cushman, 1935. Wash. Acad. Sci., Jour. 25: 561. ♂, ♀.
- interruptor** (Gravenhorst). Conn., N. Y., N. J., Ont., Mich.; Europe. Ecology: Arthur *et al.* (1964) have shown that *T. interruptor* is cleptoparasitic upon *Orgilus obscurator* (Nees). Introduced. Host: *Rhyacionia buoliana* (D. and S.). *R. buoliana* was the target host for introductions in North America; it was not learned until after *T. interruptor* was established that it almost exclusively oviposits into *R. buoliana* larvae which have already been parasitized by *O. obscurator* and develops at the expense of the latter. Therefore it appears that *T. interruptor* is detrimental with respect to control of *R. buoliana* because it limits the effectiveness of *O. obscurator*. Walkley's (1967) Idaho record for this species was based upon a misidentified specimen.
- Cremastus interruptor* Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 736. ♂, ♀.
- Cremastus ophthalmicus* Holmgren, 1860 (1858). Svenska Vetensk.-Akad., Handl. (n. f.) 2: 108. ♂.
- Taxonomy: Walkley, 1967. *In* Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2, Sup. 2, p. 208.
- Biology: Thorpe, 1930. Bul. Ent. Res. 21: 390. —Thorpe, 1932. Parasitology 24: 109-110.
- Athur, Stainer, and Turnbull, 1964. Canad. Ent. 96: 1030-1034.
- longigenalis** (Cushman). Que., Maine, N. H.
- Temelucha scutellata* Ashmead, 1900. *In* Slosson, Ent. News 11: 320. Nomen nudum.
- Cremastus* (*Cremastus*) *longigenalis* Cushman, 1917. U. S. Natl. Mus., Proc. 53: 516. ♀.
- minor** (Cushman). Mass s. to La., w. to Kans. and Tex. Host: *Epiblema strenuatum* (Wlk.), *Grapholitha molesta* (Bsk.), *Rhopobota naevana* (Hbn.), *Scrobipalpula artemisiella* (Kft.), *Celama sorghiella* (Riley).
- Cremastus* (*Cremastus*) *minor* Cushman, 1917. U. S. Natl. Mus., Proc. 53: 521. ♂, ♀.
- Biology: Driggers, 1930. N. J. Agr. Expt. Sta. Bul. 510: 17. —Merritt, 1933. Mich. Agr. Expt. Sta., Quart. Bul. 15: 225. —Pepper and Driggers, 1934. Ent. Soc. Amer., Ann. 27: 596.
- Haden, 1935. Del. Agr. Expt. Sta. Bul. 194: 14-41. —Rice, 1937. Jour. Econ. Ent., 30: 112, 114. —Steenburgh and Boyce, 1938. Ent. Soc. Ont., Ann. Rpt. 69: 72.
- Morphology: Peck, 1937. Canad. Jour. Res., Sect. D (Zool. Sci.) 15: 245-247, 249, 250.
- platynotae** (Cushman). Ariz., Calif. Host: *Platynota stultana* Wlsh.
- Cremastus* (*Cremastus*) *platynotae* Cushman, 1917. U. S. Natl. Mus., Proc. 53: 526. ♂, ♀.
- pterophori** (Cushman). Wis. Host: *Oidaematophorus lacteodactylus* (Chamb.).
- Cremastus pterophori* Cushman, 1930 (1929). U. S. Natl. Mus., Proc. 76 (25): 13. ♂, ♀.
- recta** (Provancher). N. B. s. to N. C., w. to Wis.
- Cremastus rectus* Provancher, 1874. Nat. Canad. 6: 175. ♀.
- Cremastus* (*Cremastus*) *longiventris* Cushman, 1917. U. S. Natl. Mus., Proc. 53: 517. ♀.
- rhyacioniae** (Cushman). S. Dak., Mont. Host: *Rhyacionia frustrana bushnelli* (Bsk.).
- Cremastus rhyacioniae* Cushman, 1930 (1929). U. S. Natl. Mus., Proc. 76 (25): 12. ♂, ♀.
- ruficeps** (Cushman). Wis.
- Cremastus* (*Cremastus*) *ruficeps* Cushman, 1917. U. S. Natl. Mus., Proc. 53: 518. ♀.

sinuata (Cushman). Tex., Calif. Host: *Cactobrosis strigalis* (B. and McD.), *Rumatha glaucatella* (Hulst).
Cremastus (*Cremastus*) *sinuatus* Cushman, 1926. U. S. Natl. Mus., Proc. 67 (23): 12. ♂, ♀.

SUBFAMILY PHRUDINAE

This small subfamily includes ten genera, three of which are represented by Nearctic species. The few species which have been reared are internal larval parasites of Coleoptera.

Genus EAOBIA Townes

Eaobia Townes, 1951. In Townes and Townes, Ent. Soc. Wash., Proc. 53: 307.

Type-species: *Eaobia minor* Townes. Monotypic and orig. desig.

Echthrolaricobius Perkins, 1953. Entomophaga 3: 146.

Type-species: *Echthrolaricobius paradoxus* Perkins. Monotypic and orig. desig.

This genus is known from two described species, one European and one North American. A specimen from northern Idaho in the U. S. Natl. Museum collection may represent an undescribed species. The European *E. paradoxus* has been reared from a species of *Laricobius*.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 27-28.

minor Townes. N. Y.

Eaobia minor Townes, 1951. In Townes and Townes, Ent. Soc. Wash., Proc. 53: 307. ♂, ♀.

Genus PHRUDUS Foerster

Astrenis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 148.

Type-species: *Hambergiella sinuata* Roman. Monotypically included and desig. by Perkins, 1962.

Phrudus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 196.

Type-species: *Phrudus monilicornis* Bridgman. By subsequent monotypy from inclusion by Dalla Torre, 1901.

Phrudus Bridgman, 1886. Ent. Soc. London, Trans. 19: 361. Preocc. by Foerster, 1868.

Type-species: *Phrudus monilicornis* Bridgman. Monotypic.

Ktenostilpnus Strobl, 1901. Naturw. Ver. Steiermark, Mitt. 37: 256.

Type-species: *Ktenostilpnus aequarticulatus* Strobl. Monotypic. The type-species is regarded as a synonym of *P. monilicornis* Bridgman.

Orona Cameron, 1905. Invertebrata Pacifica 1: 131. Preocc. by Haeckel, 1887.

Type-species: *Orona petiolaris* Cameron. Monotypic.

Mengersenia Schmiedeknecht, 1907. Hym. Mitteleuropas, p. 606.

Type-species: *Mengersenia paradoxa* Schmiedeknecht. Monotypic.

Hambergiella Roman, 1909. In Hamberg, Naturw. Untersuch. des Sarekgebirges in Schwedisch-Lappland, v. 4, p. 359.

Type-species: *Hambergiella sinuata* Roman. Monotypic.

Vendolius Roman, 1914. Arkiv for Zool. 9 (2): 35.

Type-species: *Vendolius stilpninus* Roman. Monotypic. The type-species is regarded as a synonym of *P. monilicornis* Bridgman.

This is a small Holarctic genus. Townes (1971) said he knew about 15 species, most of which were undescribed.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 28-29.

dakota Cushman. Western S. Dak.

Phrudus dakota Cushman, 1927. U. S. Natl. Mus., Proc. 72 (13): 17. ♀.

exarealatus Cushman. N. Y.

Phrudus exarealatus Cushman, 1927. U. S. Natl. Mus., Proc. 72 (13): 19. ♀.

petiolaris (Cameron). Mid-coastal Calif.

Orona petiolaris Cameron, 1905. Invertebrata Pacifica 1: 131. ♀.

Genus PEUCOBIUS Townes

Peucobius Townes, 1971. Amer. Ent. Inst., Mem. 17: 29.

Type-species: *Peucobius fulvus* Townes. Orig. desig.

This genus is not known to occur outside the Nearctic Region.

fulvus Townes. Md., w. N. C., Mich. Ecology: The holotype and six paratypes were collected in Md. in late April; they were swept from branches of *Pinus virginiana* bearing staminate cones which had not yet shed their pollen.

Peucobius fulvus Townes, 1971. Amer. Ent. Inst., Mem. 17: 30. ♂, ♀.

piceus Townes. N. Mex., n. Utah, e. Calif. Ecology: Three paratypes from Utah were collected on June 19 at an elevation of 8000 ft.; they were swept from branches of *Pinus contorta* bearing staminate cones which had not shed their pollen. The significance of the latter circumstance seems obscured by the fact that a paratype from Cloudcroft, N. Mex. was collected on August 28, certainly well after the pines there had shed their pollen.

Peucobius piceus Townes, 1971. Amer. Ent. Inst., Mem. 17: 30. ♂, ♀.

SUBFAMILY TERSILOCHINAE

This is a small subfamily including 15 described genera, ten of which are represented by Nearctic species. Most of the species are apparently internal larval parasites of Coleoptera. However, one Nearctic species of an undescribed genus has been reared from the ericraniid microlepidopteran *Dyseriocrania griseocapitella* (Wlshm.), and at least several species of the genus *Allophroides* have been reared from sawflies of the genus *Xyela*. Perhaps the systematic position of the hosts is not so important as the fact that all or most of them construct pupal cells, cases, or cocoons in the soil.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 33-49 (genera of world).

Genus ALLOPHROIDES Horstmann

Allophroides Horstmann, 1971. Zool. Staatssamml. Muenchen, Veroeffentl. 15: 52.

Type-species: *Porizon boops* Gravenhorst. Orig. desig.

This is a Holarctic genus of moderate size. None of the Nearctic species have been described. Labels on specimens in the U. S. Natl. Museum collection and unpublished rearing notes of R. A. Cushman indicate that at least several Nearctic species have been reared from larvae of *Xyela*. Some of these species do not agree very well with the generic redefinition of Townes (1971), particularly with respect to the position of the glymma on the first tergite. Apparently, the limits of the genus will either have to be greatly broadened or significantly restricted.

Genus PROBLES Foerster

Probles Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 147.

Type-species: *Probles melanarius* Szepligeti. By subsequent monotypy from inclusion by Szepligeti, 1899. The type-species is regarded as a synonym of *P. erythrostomus* (Gravenhorst).

This is a moderately large genus; according to Townes (1971) its distribution is worldwide. Horstmann (1971) recognized three subgenera in his treatment of the European species.

Revision: Horstmann, 1971. Zool. Staatssamml. Muenchen, Veroeffentl. 15: 81-97 (European spp.).

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 37-38.

maturus (Provancher). Que., Wyo.

Thersilochus maturus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 92. ♀.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 38.

Genus BARYCNEMIS Foerster

Barycnemis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 147.

Type-species: *Porizon claviventris* Gravenhorst. By subsequent monotypy from inclusion by Brischke, 1880.

Leptopygus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 148.

Type-species: *Ichneumon harpurus* Schrank. Desig. by Viereck, 1914 from two species included by Thomson, 1889.

Cratophion Thomson, 1889. Opusc. Ent. 13: 1363.

Type-species: *Porizon gravipes* Gravenhorst. Desig. by Viereck, 1914.

Cyrtophion Thomson, 1889. Opusc. Ent. 13: 1367.

Type-species: *Porizon dissimilis* Gravenhorst. Desig. by Viereck, 1914.

Zasternaulax Viereck, 1912. U. S. Natl. Mus., Proc. 42: 647.

Type-species: *Zasternaulax simplicicornis* Viereck. Monotypic and orig. desig.

Porizonidea Viereck, 1914. U. S. Natl. Mus., Bul. 83: 122, 158. The alternate spelling "*Parizonidea*" appeared on p. 158.

Type-species: *Ichneumon exhaustator* Fabricius. Monotypic. Article 68 (c) of the International Code of Zoological Nomenclature indicates that *I. exhaustator* is the type-species of *Porizonidea* by monotypy, in spite of Viereck's original designation, which reads: "Type.--(*Porizon hostilis* Gravenhorst)= *Porizon exhaustator* (Fabricius)."

This is a Holarctic genus of moderate size.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 38-40.

bellator (Mueller). N. H., N. Y., Colo.; Greenland; Europe.

Ichneumon bellator Mueller, 1776. Zool. Danicae Prodromus, p. 158. Sex not indicated.

Barycnemis slossonae Ashmead, 1906. In Slosson, Ent. News 17: 324. Nomen nudum.

Barycnemis slossonae Cushman, 1922. U. S. Natl. Mus., Proc. 61 (8): 8. ♀.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 40

borealis (Provancher). Que.

Porizon boreale Provancher, 1879. Nat. Canad. 11: 206. "♀" = ♂. Preocc. by Zetterstedt, 1838 and Provancher, 1877; not renamed here because of uncertain synonymy. Contrary to the argument of Barron (1975), Townes (1945) was correct in treating this as a description of a new species rather than as a redescription of *Porizon borealis* Provancher, 1877, a synonym of *B. rugosa* (Provancher). Were it not for the fact that Provancher indicated that his 1879 description was that of a new species, Barron's argument might have some validity. According to Barron, Provancher's 1877 and 1879 descriptions are based on different specimens which are not conspecific.

Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 704. —Barron, 1975. Nat. Canad. 102: 434.

exhaustator (Fabricius). Maine, N. H., Ont.; Europe.

Ichneumon exhaustator Fabricius, 1798. Sup. Ent. System., p. 226. Sex not indicated.

Porizon hostilis Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 753. ♂, ♀.

Porizon gravipes Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 757. ♀.

Thersilochus errabundus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 92. ♀. N. syn.

Notopygus americana Harrington, 1892. Canad. Ent. 24: 98. ♀. N. syn.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 40.

harpura (Schrank). Que., N. Y., S. Dak., Colo., N. Mex., Idaho, s. B. C.; Europe.

Ichneumon harpurus Schrank, 1802. Fauna Boica, v. 2, pt. 2, p. 294. ♀.

Cremastus angularis Provancher, 1874. Nat. Canad. 6: 176. ♂.

Mesoleptus micans Provancher, 1875. Nat. Canad. 7: 114. "♂" = ♂, ♀.

Porizon elongatum Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 91. ♂, ♀.

Atractodes politus Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 23. ♂, ♀. N. syn. Preocc. in *Atractodes* by Provancher, 1874.

Porizon canaliculatus Viereck, 1903. In Skinner, Amer. Ent. Soc., Trans. 29: 93. ♂. N. syn.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 39-40.

linearis Ashmead. Del., Ont.

Barycnemis linearis Ashmead, 1895. Ent. Soc. Wash., Proc. 3: 328. ♀.

rugosa (Provancher). Que., N. H., N. Y.

Porizon borealis Provancher, 1877. Nat. Canad. 9: 14. ♂. Preocc. by Zetterstedt, 1839.

Porizon rugosum Provancher, 1879. Nat. Canad. 11: 206. "♀" = ♂.

- Leptopygus monticola* Ashmead, 1897. In Slosson, Ent. News 8: 237. Nomen nudum.
simplicicornis (Viereck). Colo., Mont., Wash., Oreg. Host: *Pissodes* sp.
Zasternaulax simplicicornis Viereck, 1912. U. S. Natl. Mus., Proc. 42: 647. ♂.

Genus PECTINOLOCHUS Aubert

- Tersilochus* subg. *Pectinolochus* Aubert, 1960. Soc. Ent. de Mulhouse, Bul. 16: 65.
 Type-species: *Tersilochus* (*Pectinolochus*) *unguiculator* Aubert. Monotypic.
Polemolochus Aubert, 1964. Soc. Ent. de Mulhouse, Bul. 20: 39.
 Type-species: *Tersilochus ensifer* Brischke. Monotypic and orig. desig.

This is a Holarctic genus. Townes (1971) said he had seen 14 species, most of which were undescribed, but he did not indicate how many of these are Nearctic. Horstmann (1971) treated four European species.

Revision: Horstmann, 1971. Zool. Staatssamml. Muenchen, Veroeffentl. 15: 55-58.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 41.

Genus TERSILOCHUS Holmgren

- Tersilochus* Holmgren, 1859 (1858). Svenska Vetensk.-Akad., Ofvers af ... Forhandl. 15: 329.

Type-species: *Porizon jocator* Gravenhorst. Monotypic. The type-species is Gravenhorst's misidentification of *Ichneumon jocator* Fabricius. The correct name for *jocator* in the sense of Gravenhorst is *T. cognatus* Holmgren.

- Tersilochus* (!) Holmgren, 1860 (1858). Svenska Vetensk.-Akad. Handl. (n. f.) 2: 135.

This is a Holarctic genus of moderate size.

Revision: Horstmann, 1971. Zool. Staatssamml. Muenchen, Veroeffentl. 15: 114-134 (European spp.).

Taxonomy: Horstmann, 1969 (1968). Opusc. Zool. 102: 1-2.

alaskensis (Ashmead). Southwestern Alaska.

Isurgus alaskensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 239. ♀.

conotracheli (Riley). Que. s. to w. N. C., w. to Iowa. Host: *Conotrachelus anaglypticus* (Say), *C. nenuphar* (Herbst), *C. retentus* (Say).

Porizon conotracheli Riley, 1871. Mo. State Ent., Ann. Rpt. 3: 28. ♂, ♀.

Biology: Cushman, 1916. Jour. Agr. Res. 6: 847-855.

deficiens (Provancher). Ont.

Stilpnus deficiens Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 359. ♀.

Genus STETHANTYX Townes

Stethantyx Townes, 1971. Amer. Ent. Inst., Mem. 17: 42.

Type-species: *Stethantyx nearctica* Townes. Montypic and orig. desig.

This is a Neotropical and Nearctic genus of moderate size.

nearctica Townes. Md., D. C., e. N. C., n.w. S. C.; n. Mexico.

Stethantyx nearctica Townes, 1971. Amer. Ent. Inst., Mem. 17: 43. ♂, ♀.

Genus ALLOPHRYS Foerster

Allophrys Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 147.

Type-species: *Tersilochus oculatus* Ashmead. Desig. by Viereck, 1914 from three species included by Szepligeti, 1905.

This is a small Neotropical, Nearctic, Oriental, and Ethiopian genus. An undescribed species occurs in the southeastern U. S. A.

Genus PHRADIS Foerster

Ischnobatis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 148.

Phradis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 148.

Type-species: *Thersilochus (Phradis) brevis* Brischke. By subsequent monotypy from inclusion by Brischke, 1880.

Eutomus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 148.

Type-species: *Isurgus lanceolatus* Szepilgeti. Monotypically included and desig. by Viereck, 1914.

Isurgus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 148.

Type-species: *Isurgus lanceolatus* Szepilgeti. Desig. by Viereck, 1914 from nine species included by Szepilgeti, 1899.

This is a Holarctic genus of moderate size. Horstmann (1971) treated 11 European species, and Townes (1971) said he had seen five Nearctic species, all of which he believed to be undescribed.

Revision: Horstmann, 1971. Zool. Staatssamml. Muenchen, Veroeffentl. 15: 67-77 (European spp.).

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 46.

Genus DIAPARSIS Foerster

Ischnobatis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 148.

Type-species: *Thersilochus (Ischnobatis[?]) stramineipes* Brischke. By subsequent monotypy from inclusion by Brischke, 1880.

Diaparsis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 149.

Type-species: *Porizon nutritor* Gravenhorst. Desig. by Perkins, 1962 from 12 species included by Thomson, 1889. The type-species is Gravenhorst's misidentification of *Ophion nutritor* Fabricius. According to Horstmann (1971) *nutritor* in the sense of Gravenhorst is a synonym of *Diaparsis truncata* (Gravenhorst).

Diaparsus Thomson, 1889. Opusc. Ent. 13: 1369. Emend.

Luchatema Walkley, 1956. Ent. News 67: 154

Type-species: *Luchatema baldufi* Walkley. Monotypic and orig. desig.

According to Townes (1971) this is a large genus of Holarctic, Oriental, and Ethiopian distribution. Horstmann (1971) treated seven European species. Two European species which are parasites of *Oulema melanopus* (L.) have been released in North America; one of these, *D. carinifer* (Thomson), has not become established; the other, a new species soon to be described by Dr. Klaus Horstmann, is established or at least has been recovered in w. N. Y., Pa., w. W. Va., Ohio, s. Mich., and n. Ind. according to unpublished information supplied by T. L. Burger.

Revision: Horstmann, 1971. Zool. Staatssamml. Muenchen, Veroeffentl. 15: 100-107 (European spp.).

Taxonomy: Perkins, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 11: 417, 431. — Horstmann, 1969 (1968). Opusc. Zool. 102: 2. — Townes, 1971. Amer. Ent. Inst., Mem. 17: 47-48.

americana (Brues). Mass., R. I., N. Y., Md., W. Va., Colo.?, N. Mex.? Ecology: Occurs in late summer and fall on flowers of *Solidago*.

Heterocola americana Brues, 1916. Ent. News 27: 331. ♀.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 48.

baldufi (Walkley). Mass. w. to s. Sask., s. to central Ill., n.e. Kans., and s.w. Wyo. Host: *Rhynchites bicolor* (F.).

Luchatema baldufi Walkley, 1956. Ent. News 67: 154. ♂, ♀.

carinifer (Thomson). Europe. Introduced in Michigan in 1967 and a number of times since, without becoming established. Stehr and Haynes (1972) reported the species as established, but the record of establishment applies not to *carinifer* but to *Diasparsis* n. sp. (see above introductory paragraph on *Diaparsis*).

Thersilochus carinifer Thomson, 1889. Opusc. Ent. 13: 1392. ♀. Bibliographic information published by Laboulbene (1889) indicates that fascicle 13 of Opusc. Ent. was published prior to June 12, 1889.

Thersilochus carinatus Bridgman, 1889. Ent. Soc. London, Trans. 37: 430. ♀. Information published by Wheeler (1912) shows that Bridgman's paper was published on Oct. 28, 1889.

Thersilochus vernalis Szepligeti, 1899. Termes. Fuzetek 22: 228. ♀.

Taxonomy: Laboulbène, 1889. Soc. Ent. de France, Ann. (6) 9: cxxiv in Bul. — Wheeler, 1912 (1911). Ent. Soc. London, Trans. 59: 759. — Horstmann, 1971. Zool. Staatssamml. München, Veroeffentl. 15: 103.

Biology: Stehr and Haynes, 1972. Jour. Econ. Ent. 65: 405-407. — Dysart, Maltby, and Brunson, 1973. Entomophaga 18: 139-142. — Montgomery and Dewitt, 1975. Ent. Soc. Amer., Ann. 68: 574-578 (egg and larval instars).

Genus ANEUCILIS Foerster

Aneucilis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 147.

Type-species: *Isurgus rufipes* Szepligeti. Desig. by Viereck, 1914 from five species and two synonyms included by Szepligeti, 1905.

This is a small genus of Holarctic, Oriental, and Ethiopian distribution. According to Townes (1971) there is one Nearctic species; apparently, it is undescribed.

Revision: Horstmann, 1971. Zool. Staatssamml. München, Veroeffentl. 15: 59-63 (European spp.).

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 48-49.

UNPLACED TAXA OF TERSILOCHINAE

According to Townes and Townes (1951), the three native species which here remain unplaced have elongate thyridia. Some of these may prove to belong in *Probles*. The introduced species which I have added to the unplaced category also have elongate thyridia, but do not seem referable to *Probles* because of the shortness of their ovipositors (as long as apical depth of abdomen) combined with the shortness of the "foveate groove" on the mesopleurum.

Taxonomy: Townes and Townes, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 394.

Aneucilis(?) erythrostomus Cameron, 1905. Invertebrata Pacifica 1: 131. ♀. Western Nev. If the species belongs in *Probles* it would be preocc. by *erythrostomus* (Gravenhorst), 1829.

Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 103.

Porizon argentinensis Blanchard, 1945. Soc. Ent. Argentina, Rev. 12: 308. ♀. Argentina, Uruguay. Introduced in s. Calif. in 1946, without becoming established. Host: *Listroderes costirostris obliquus* (Klug). See *P. parkeri* Blanchard.

Taxonomy: Kerrich, 1961. Eos 37: 497-503.

Biology: Parker, Berry, and Silveria, 1950. U. S. Dept. Agr., Tech. Bul. 1016: 1-14, 26-28. — Wilson and Wearne, 1962. Austral. Jour. Agr. Res. 13: 253.

Morphology: Short, 1959. U. S. Natl. Mus., Proc. 110: 496 (final-instar larva).

Porizon parkeri Blanchard, 1945. Soc. Ent. Argentina, Rev. 12: 305. ♀. Argentina, Uruguay.

Introduced in s. Calif. in 1946; it did not become established, although an undescribed thelytokous species which was identified as the "parthenogenetic strain" of *parkeri* by Kerrich (1961) is widely established in s. Calif. according to Clancy (1969). Host: *Listroderes costirostris obliquus* (Klug). The undescribed thelytokous species which is established in Calif. is more similar in coloration to *P. argentinensis* (which see) than to *P. parkeri* and, therefore, was probably released in Calif. along with the former species. These three species, which have also been released in Australia, appear to represent an undescribed genus.

Taxonomy: Kerrich, 1961. Eos 37: 497-503.

Biology: Parker, Berry, and Silveria, 1950. U. S. Dept. Agr., Tech. Bul. 1016: 1-14, 26-28.

— Wilson and Wearne, 1962. Austral. Jour. Agr. Res. 13: 253. — Clancy, 1969. Jour. Econ. Ent. 62: 743-745.

Thersilochus montanus Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 23. ♂. Western Colo. I have studied the holotype and suppose it may belong in the genus *Probes* as defined by Townes (1971); because placement of the species in *Probes* would preoccupy *Probes* (*Euporizon*) *montanus* Horstmann (1971), I leave it unplaced pending both identification of the female and a more precise redefinition of *Probes*.

Taxonomy: Horstmann, 1971. Zool. Staatssamml. Muenchen, Veroeffentl. 15: 91. —Townes, 1971. Amer. Ent. Inst., Mem. 17: 37-38.

Thersilochus pallidipes Dalla Torre, 1901. Cat. Hym., v. 3, p. 43. Emend. of *pallipes* Provancher and syn. of *provancheri* Ashmead (which see).

Thersilochus pallipes Provancher, 1882. Nat. Canad. 367. ♀. Que. Preocc. by Holmgren, 1860; replaced by *provancheri* Ashmead (which see).

Taxonomy: Barron, 1975. Nat. Canad. 102: 526.

Thersilochus Provancheri Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 24. N. name for *pallipes* Provancher.

Thersilochus provancheri Cushman, 1922. U. S. Natl. Mus., Proc. 61 (8): 30. Unnecessary n. name for *pallipes* Provancher; preocc. by Ashmead, 1890. Cushman was unaware that Ashmead (1890) had validated the name *provancheri*, and thought that it had been published only as a nomen nudum.

SUBFAMILY OPHIONINAE

Townes (1971) divided the subfamily into two tribes, the Ophionini and the Enicospilini. Ophioninae are internal parasites, and the usual hosts are larvae of Lepidoptera. *Ophion nigrovarius* (Provancher), however, is a larval parasite of *Phyllophaga* (Coleoptera: Scarabaeidae).

Taxonomy: Cushman, 1947. U. S. Nat. Mus., Proc. 96: 417-482 (genera of world). —Townes, 1971. Amer. Ent. Inst., Mem. 17: 49-82 (genera of world).

TRIBE OPHIONINI

Fourteen genera are currently recognized, and seven of these are represented by Nearctic species.

Genus OPHION Fabricius

Ophion Fabricius, 1798. Sup. Ent. System., p. 210, 235.

Type-species: *Ichneumon luteus* Linnaeus. Desig. by Curtis, 1835.

Paniscus schrank, 1802. Fauna Boica, v. 2, pt. 2, p. 316. See introductory discussion of genus *Netelia*.

Type-species: *Ichneumon luteus* Linnaeus. Monotypic.

Psylonychia Szepligeti, 1905. In Wytsman, Gen. Ins., fasc. 34, p. 21.

Type-species: *Stenophthalmus algiricus* Szepligeti. Monotypically included and desig. by Cushman, 1947.

Stenophthalmus Szepligeti, 1905. In Wytsman, Gen. Ins., fasc. 34, p. 23. Preocc. by Becker, 1903.

Type-species: *Stenophthalmus algiricus* Szepligeti. Desig. by Viereck, 1914.

Ophion subg. *Pachyprotoma* Kohl, 1906 (1905). In Penther and Zederbauer, Wien. Mus. der Naturgesch., Ann. 20: 223.

Type-species: *Ophion* (*Pachyprotoma*) *capitatus* Kohl. Monotypic.

Australophion Morley, 1912. Rev. Ichn. Brit. Mus., v. 1, p. 30.

Type-species: *Ophion peregrinus* Smith. Monotypic.

Neophion Morley, 1912. Rev. Ichn. Brit. Mus., v. 1, p. 30.

Type-species: *Neophion crassus* Morley. Desig. by Viereck, 1914.

Ophion subg. *Platophion* Hellen, 1926. Soc. pro Fauna et Flora Fenn., Acta. 56 (6): 13.

Type-species: *Ophion areolaris* Brauns. Desig. by Cushman, 1947.

Potophion Cushman, 1947. U. S. Natl. Mus., Proc. 96: 442.

Type-species: *Potophion caudatus* Cushman. Monotypic and orig. desig.

This very large genus is worldwide in distribution.

Revision: Hooker, 1912. Amer. Ent. Soc., Trans. 38: 21-50.

bilineatus Say. Ind. The type locality would presumably have been southwestern Ind. The original description gives the length of *bilineatus* as "seven-twentieths of an inch," but because the additional remarks of Say (1836) seem to confirm placement of this species in *Ophion*, that measurement was presumably an error for seven-tenths of an inch.

Ophion bilineatus Say, 1829. Contrib. Maclurian Lyceum to Arts and Sci. 1: 75. Sex not indicated. No type specimen is known to remain in existence.

Taxonomy: Say, 1836. Boston Jour. Nat. Hist. 1: 239, 240. —Townes and Townes, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 402.

coloradensis (felt). Colo.

Genophion coloradensis Felt, 1904. N. Y. State Mus., Bul. 76: 124. ♀.

crassus (Morley). N. S.

Neophion crassus Morley, 1912. Rev. Ichn. Brit. Mus., v. 1, p. 31. ♂.

elongatus Hooker. Colo., N. Mex., Ariz.

Ophion bilineatus elongatus Hooker, 1912. Amer. Ent. Soc., Trans. 38: 30. ♀.

epallidus Walkley. Southern Colo.

Ophion bilineatus var. *pallida* Cockerell, 1889. Sci. Gossip 25: 92. Sex not indicated.

Preocc. by Taschenberg, 1875.

Ophion epallidus Walkley, 1958. In Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2, Sup. 1, p. 62. N. name for *pallida* Cockerell.

flavidus Brulle. N. Y. s. to Fla., w. to n.e. Kans. and s. Tex.; West Indies, Costa Rica, Guatamala, Brazil, Paraguay, Uruguay, Argentina. Host: *Agrotis ipsilon* (Hufn.), *Heliothis zea* (Bod.), *Peridroma saucia* (Hbn.), *Spodoptera eridania* (Cram.).

Ophion flavidus Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 143. [female].

Ophion biangularis Taschenberg, 1875. Ztschr. f. Naturw. 46: 432. ♀.

Ophion ancyloneura Cameron, 1886. Biol. Cent.-Amer., Hym., v. 1, p. 294. ♀.

Ophion diversus Szepligeti, 1906. Mus. Natl. Hungarici, Ann. 4: 131. ♂, ♀.

Ophion concolor Szepligeti, 1906. Mus. Natl. Hungarici, Ann. 4: 131. ♂. Preocc. by Cresson, 1865.

Ophion politor Morley, 1912. Rev. Ichn. Brit. Mus., v. 1, p. 56. ♀.

Taxonomy: Townes and Townes, 1966. Amer. Ent. Inst., Mem. 8: 168-169 (syn.).

Morphology: Cushman, 1947. U. S. Natl. Mus., Proc., v. 96, pl. 52, fig. 43 (metathorax and propodeum).

idoneus Viereck. Mass. w. to s. Man., s. to n. Va., Tenn., and n.e. Kans. Host: *Sunira bicolorago* (Gn.).

Ophion idoneus Viereck, 1905. Kans. Acad. Sci., Trans. 19: 312. ♂.

Morphology: Cushman, 1947. U. S. Natl. Mus., Proc., v. 96, pl. 49, fig. 3 (final-instar larva).

magniceps Hooker. Mont., Calif.

Ophion abnormis magniceps Hooker, 1912. Amer. Ent. Soc., Trans. 38: 36. ♀ (♂ misdet.?).

nigrovarius Provancher. N. S. s. to n. Va., w. to Minn., Colo., and Tex. Host: *Phyllophaga fusca* (Froel.). The name *bifoveolatus* Brulle was for many years incorrectly applied to this species; see *Enicospilus bifoveolatus* (Brulle).

Ophion nigrovarius Provancher, 1874. Nat. Canad. 6: 104. ♂, ♀.

Eurycampus nova-scotiae Morley, 1912. Rev. Ichn. Brit. Mus., v. 1, p. 29. ♀.

Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 106, 111. —Barron, 1975. Nat. Canad. 102: 519.

slossonae Davis. N. H. w. to w. S. Dak., s. to n. Ga. and s. Tex. Host: *Acronicta americana* (Harris).

Ophion slossonae Davis, 1893. Ent. News 4: 135. ♂.

Ophion ferruginipennis Felt, 1904. N. Y. State Mus., Bul. 76: 122. ♀.

tityri Packard. Mass., N. Y., N. J., Mich. Host: *Epargyreus clarus* (Cram.).

Ophion tityri Packard, 1881. Boston Soc. Nat. Hist., Proc. 21: 19. ♂.

Genus CLISTORAPHA Cushman

Clistorapha Cushman, 1947. U. S. Natl. Mus., Proc. 96: 450.

Type-species: *Ophion subfuliginosus* Ashmead. Monotypic and orig. desig.

This is a small Holarctic genus.

subfuliginosa (Ashmead). Ariz.; n.w. Mexico.

Ophion subfuliginosus Ashmead, 1894. Calif. Acad. Sci., Proc. (2) 4: 126. ♂, ♀.

Genus BOETHONEURA Cushman

Boethoneura Cushman, 1947. U. S. Natl. Mus., Proc. 96: 451.

Type-species: *Boethoneura arida* Cushman. Monotypic and orig. desig.

This is a small Nearctic and Neotropic genus.

arida Cushman. Ariz., Nev.: n.w. Mexico.

Boethoneura arida Cushman, 1947. U. S. Natl. Mus., Proc. 96: 452. ♀.

Genus TROPHOPHION Cushman

Trophophion Cushman, 1947. U. S. Natl. Mus., Proc. 96: 447.

Type-species: *Trophophion tenuiceps* Cushman. Monotypic and orig. desig.

Only one species is known.

tenuiceps Cushman. Ariz., s. Calif.

Trophophion tenuiceps Cushman, 1947. U. S. Natl. Mus., Proc. 96: 449. ♂, ♀.

Genus APATOPHION Shestakov

Apatophion Shestakov, 1926. Konowia 5: 262.

Type-species: *Apatophion mirsa* Shestakov. Monotypic and orig. desig.

This is a small Holarctic genus. According to Townes (1971) there are two undescribed species in the central United States.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 59-60.

Genus GENOPHION Felt

Genophion Felt, 1904. N. Y. State Mus., Bul. 76: 123.

Type-species: *Genophion gilletti* Felt. Orig. desig.

Chilophion Cushman, 1947. U. S. Natl. Mus., Proc. 96: 454.

Type-species: *Ophion abnormus* Felt. Monotypic and orig. desig.

This is a small Nearctic genus, a number of species being undescribed.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 61-62 (syn.).

abnormus (Felt). Southwestern S. Dak., s.w. Kans., s.e. Wyo., Colo.

Ophion abnormum Felt, 1904. N. Y. State Mus., Bul. 76: 121. ♀.

Eremotylus felti Viereck, 1905. Kans. Acad. Sci., Trans. 19: 312. ♀.

Ophion abnormis Hooker, 1912. Amer. Ent. Soc., Trans. 38: 47. Emend.

costalis (Cresson). Colo., s. Idaho, s. Oreg.

Ophion costale Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 366. ♀. Cresson cited the type locality as "Klamath Co., California," but there has never been a Klamath Co. anywhere except in Oreg.

Genophion gilletti Felt, 1904. N. Y. State Mus., Bul. 76: 123. ♀.

TRIBE ENICOSPILINI

Only four of the 20 genera currently recognized genera have Nearctic species, the species of Enicospilini being most numerous in the tropics.

Genus RHYNCHOPHION Enderlein

Rhynchophion Enderlein, 1912. Zool. Anz. 39: 630.

Type-species: *Rhynchophion odontandroplox* Enderlein. Monotypic and orig. desig.

This is a small Neotropical and Nearctic genus.

flammipennis (Ashmead). Southeastern Ariz.; Mexico, Nicaragua, Ecuador.

Thyreodon flammipennis Ashmead, 1894. Calif. Acad. Sci., Proc. (2) 4: 125. ♀.

Genus THYREODON Brulle

Thyreodon Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 150.

Type-species: *Thyreodon cyaneus* Brulle. Desig. by Hooker, 1912.

Athyreodon Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 87.

Type-species: *Athyreodon thoracicus* Ashmead. Monotypic and orig. desig. The type-species is regarded as a synonym of *T. atriventris* (Cresson).

Tipulophion Kriechbaumer, 1901. Ztschr. System. Hym. Dipt. 1: 75.

Type-species: *Tipulophion gigas* Kriechbaumer. Monotypic. The type-species is regarded as a subspecies of *T. atriventris* (Cresson).

Macrophion Szepligeti, 1905. In Wytman, Gen. Ins., fasc. 34, p. 32.

Type-species: *Macrophion ornatus* Szepligeti. Desig. by Viereck, 1912. The type-species is regarded as a synonym of *T. atriventris* (Cresson).

Oleter Shestakov, 1926. Konowia 5: 259.

Type-species: *Oleter selenaction* Shestakov. Monotypic and orig. desig. The type-species is regarded as a synonym of *T. laticinctus* Cresson.

This is a large genus of Neotropical and Nearctic distribution, the majority of the species being Neotropical.

atricolor (Olivier). Que. w. to s. Man., s. to Fla. and e. Tex. Host: *Lapara confervarum* (J. E. S.), *L. bombycoides* Wlk., *Paonias excaecatus* (J. E. S.).

Ophion atricolor Olivier, 1812 (1811). In Olivier and Latreille, Encycl. Meth., Dict. Ins., v. 8, p. 511. ♀.

Thyreodon brullei Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 287. ♂, ♀. Validated as a "new name" for "*T. morio* Authors, not Fabricius." Viereck gave a few descriptive remarks, gave data for two specimens he had seen from Conn., and referred to the figure of Howard (1902). The specimen in the U. S. National Museum upon which Howard's figure is based is here selected as lectotype; it is a female collected at Nyack, N. Y. by J. L. Zabriskie in 1883.

Taxonomy: Howard, 1902. The Insect Book, pl. 10, fig. 15.

atricolor flavicornis (Say). Kans., Colo., N. Mex., s.e. Idaho, Utah, Ariz.

Anomalon flavicornis Say, 1823. West. Quart. Rptr. 2: 73. Sex not indicated.

Thyreodon snowi Viereck, 1905. Kans. Acad. Sci., Trans. 19: 313. ♀.

Thyreodon morio transitionalis Viereck, 1906. Amer. Ent. Soc., Trans. 32: 225. ♀.

fernaldi Hooker. Colo., Ariz.; n. Mexico.

Thyreodon fernaldi Hooker, 1912. Amer. Ent. Soc., Trans. 38: 131. ♂, ♀.

ornatipennis Cresson. N. Mex.; n. Mexico.

Thyreodon ornatipennis Cresson, 1874 (1873). Acad. Nat. Sci. Phila., Proc. 25: 376. ♀.

Genus SIMOPHION Cushman

Simophion Cushman, 1947. U. S. Natl. Mus., Proc. 96: 446.

Type-species: *Simophion excarinatus* Cushman. Monotypic and orig. desig.

A single species is known to the author. Cushman said he had seen four undescribed species, and it is likely that at least some of them were only color variants of *excarinatus*. It is apparently not known if the Palearctic species *S. calvus* Viktorov and *S. victorovi* Malyavin really belong in *Simophion*.

excarinatus Cushman. Southwestern Tex., s. N. Mex., s. Ariz., s.e. Calif.

Simophion excarinatus Cushman, 1947. U. S. Natl. Mus., Proc. 96: 447. ♀.

Genus ENICOSPILUS Stephens

Enicospilus Stephens, 1829. System. Cat. Brit. Ins., p. 352. Nomen nudum.

Enicospilus Stephens, 1835. Illus. Brit. Ent., v. 7, p. 126.

Type-species: *Enicospilus merdarius* Stephens. By subsequent monotypy from inclusion by Stephens, 1845. *E. merdarius* Stephens is preocc. in *Enicospilus* by *merdarius* (Gravenhorst); *merdarius* Stephens is a synonym of *Enicospilus ramidulus* (Linnaeus) (n. syn.). The details of the excellent discussion by Hooker (1912) appear to be correct except that Stephens (1845) did not cite any author for the name *Enicospilus merdarius*, and Stephens (1846) indicated that the figure to which the combination *Enicospilus merdarius* referred was *E. combustus* (Gravenhorst), presently a synonym of *E. ramidulus* (Linnaeus), and he distinguished *E. combustus* from *E. merdarius* (Gravenhorst).

Henicospilus Agassiz, 1846. Nomencl. Zool., Index Univ., p. 138. Emend.

Allocamptus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 150.

Type-species: *Ophion undulatus* Gravenhorst. By subsequent monotypy from inclusion by Thomson, 1888.

Ophion subg. *Dispilus* Kriechbaumer, 1894. Berlin. Ent. Ztschr. 39: 309.

Type-species: *Ophion (Dispilus) natalensis* Kriechbaumer. Monotypic.

Pleuroneurophion Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 86.

Type-species: *Pleuroneurophion hawaiiensis* Ashmead. Monotypic and orig. desig.

Cymatoneura Kriechbaumer, 1901 (Jan.). Ztschr. System. Hym. Dipt. 1 (1): 22.

Type-species: *Ophion undulatus* Gravenhorst. Desig. by Viereck, 1912 from four species included by Kriechbaumer, 1901 (Mar.).

Pterospilus Kriechbaumer, 1901. Ztschr. System. Hym. Dipt. 1 (3): 156. Preocc. by Rondani, 1856.

Type-species: *Ophion (Enicospilus) dubius* Tosquinet. Desig. by Viereck, 1914.

Trispilus Kriechbaumer, 1901. Ztschr. System. Hym. Dipt. 1 (3): 156.

Type-species: *Ophion (Enicospilus) trimaculatus* Tosquinet. Monotypic.

Abanchogastra Perkins, 1902. Ent. Soc. London, Trans. 50: 141.

Type-species: *Abanchogastra debilis* Perkins. Monotypic.

Metophion Szepligeti, 1905. In Wytsman, Gen. Ins., fasc. 34, p. 28.

Type-species: *Metophion bicolor* Szepligeti. Desig. by Viereck, 1914.

Ceratospilus Szepligeti, 1905. In Wytsman, Gen. Ins., fasc. 34, p. 28.

Type-species: *Ceratospilus biroi* Szepligeti. Monotypic.

Atoponeura Szepligeti, 1905. In Wytsman, Gen. Ins., fasc. 34, p. 34.

Type-species: *Atoponeura concolor* Szepligeti. Monotypic. The type-species is a synonym of *E. atoponeurus* Cushman.

Ophiomorpha Szepligeti, 1905. In Wytsman, Gen. Ins., fasc. 34, p. 34. Preocc. by Nilsson, 1836.

Type-species: *Ophion curvinervis* Cameron. Desig. by Hooker, 1912. The type-species is a synonym of *E. cameronii* (Dalla Torre).

Cryptocamptus Brethes, 1909. Buenos Aires, Mus. Nac. de Hist. Nat., An. 19: 230. This name was proposed as a "new name" for *Allocamptus* "Thomson," which, according to present rules of nomenclature, Brethes incorrectly regarded as being a misidentification of *Allocamptus* Foerster.

Type-species: *Ophion undulatus* Gravenhorst. Monotypic.

Amesospilus Enderlein, 1914. In Michaelson, Beitr. z. Kenntnis d. Land-u.

Suesswasserfauna Deut.-Südwestafrikas, v. 1, p. 222.

Type-species: *Ophion unicallosus* Snellen van Vollenhoven. Orig. desig.

Eremotylodes Perkins, 1915. Ent. Soc. London, Trans. 62: 530.

Type-species: *Eremotylus orbitalis* Ashmead. Monotypic.

Schizospilus Seyrig, 1935 (1936). Paris, Mus. d'Hist. Nat., Mem. (n. s.) 4: 79.

Type-species: *Schizospilus divisus* Seyrig. Orig. desig.

Townes (1971) stated that *Enicospilus* is probably the largest genus of Ichneumonidae and estimated the number of species to be well over a thousand. Species occur throughout the world but are most numerous in tropical regions.

Revision: Hooker, 1912. Amer. Ent. Soc., Trans. 38: 52, 92, 135-158.

- Taxonomy: Stephens, 1845. *Illus. Brit. Ent.*, v. 7, list of plates (follows p. 310). —Stephens, 1846. *Illus. Brit. Ent.*, Sup., p. 3. —Townes, 1971. *Amer. Ent. Inst.*, Mem. 17: 78-79.
- americanus** (Christ). N. S. w. to Minn., s. to Fla., s. Tex., and mid-coastal Calif.; Mexico, Costa Rica, Guatemala, Brazil?, Argentina. Host: *Actias luna* (L.), *Antheraea polyphemus* (Cram.), *Automeris io* (F.), *Callosamia promethea* (Drury), *Hyalophora cecropia* (L.), *H. columbia* (Sm.), *H. euryalus* (Bdv.), *Rothschildia orizaba* (West.), *Samia cynthia* (Drury). Before World War II, the name *macrurus* (Linnaeus) was erroneously applied to this species, usually in combination with the generic names *Eremotylus* or *Ophion*. *Ichneumon luteus americanus* Christ, 1791. *Naturgesch. Class. Nomencl. Ins.*, p. 358, pl. 37, fig. 5. ♀.
- Ophion rugosus* Brulle, 1846. In Lepeletier, *Hist. Nat. Ins. Hym.*, v. 4, p. 138. Sex not indicated.
- Ophion cecropiae* Scudder, 1963. *Boston Soc. Nat. Hist.*, Proc. 9: 188-189. Nomen nudum.
- Ophion cecropiae* Sanborn, 1863. *Sec. Mass. Bd. Agr.*, Ann. Rpt. 10: 169. Sex not indicated.
- Ophion mexicanus* Cresson, 1874 (1873). *Acad. Nat. Sci. Phila.*, Proc. 25: 374. ♀.
- Eremotylus Druryi* Kriechbaumer, 1901. *Ztschr. System. Hym. Dipt.* 1: 152. ♂, ♀.
- Taxonomy: Townes, 1961. *Ent. Soc. Wash.*, Proc. 63: 111 (syn.).
- Biology: Riley, 1870. *Amer. Ent.* 2: 100-101. —Riley, 1872. *Mo. State Ent.*, Ann. Rpt. 4: 107-108. —Smith, 1908. *Jour. Econ. Ent.* 1: 294-297.
- appendiculatus** (Felt). N. J., N. C., S. C., Ala., Fla.; West Indies, Mexico, Brazil.
- Ophion (Eniscopilus) [?]* *appendiculatus* Felt, 1902. *Psyche* 9: 308. [female].
- arcuatus** (felt). Mass. w. to Ill., s. to Ga. and Miss.; Puerto Rico, Mexico, Argentina. Host: *Scoliopteryx libatrix* (L.), *Heterocampa guttivitta* (Wlk.), *Schizura concinna* (J. E. S.).
- Ophion (Eniscopilus) [?]* *arcuatus* Felt, 1902. *Psyche* 9: 308. ♀. Preocc. by Brulle, 1846; not renamed here because of uncertain synonymy.
- bifoveolatus** (Brulle). Pa. Townes (1961) said "this is an uncommon species ... that occurs mostly in the southeastern United States." The name *bifoveolatus* was for years incorrectly applied to *Ophion nigrovarius* Provancher.
- Ophion bifoveolatus* Brulle, 1846. In Lepeletier, *Hist. Nat. Ins. Hym.*, v. 4, p. 138. [male].
- Ophion stramineus* Taschenberg, 1875. *Ztschr. f. die Gesam. Naturw.* [Halle] 46: 431. ♀.
- Taxonomy: Townes, 1961. *Ent. Soc. Wash.*, Proc. 63: 111.
- cubensis** (Norton). Fla.; West Indies.
- Ophion cubensis* Norton, 1863. *Ent. Soc. Phila.*, Proc. 1: 358. ♀.
- flavus** (Fabricius). Fla.; West Indies, Mexico, Guatemala, Nicaragua, Guyana, Colombia, Brazil, Paraguay, Argentina.
- Ichneumon flavus* Fabricius, 1775. *Systema Ent.*, p. 341. [female].
- Ichneumon flavarius* Thunberg, 1822; 1824. *Acad. Imp. des Sci. St. Petersburg*, Mem. 8: 262; 9: 314. Unnecessary n. name for *I. flavus* Fabricius.
- Ophion concolor* Cresson, 1865. *Ent. Soc. Phila.*, Proc. 4: 56. [female].
- Eniscopilus guyanensis* Cameron, 1911. *Timehri* (3) 1: 179. [female].
- Taxonomy: Townes and Townes, 1966. *Amer. Ent. Inst.*, Mem. 8: 178-179 (syn.).
- glabratus** (Say). Md. s. to Fla., w. to s. Calif.; Puerto Rico, Dominican Republic, Jamaica, Mexico, Costa Rica, Panama. Host: *Diacrisia virginica* (F.), *Ecpantheria scribonia* (Stoll), *Halisidota maculata* (Harris), *Hyphantria cunea* (Drury), *Isia isabella* (J. E. S.), *Dasychira basiflava* (Pack).
- Ophion glabratus* Harris, 1935. In Hitchcock, *Rpt. Geol. Mineral. Bot. Zool. Mass.*, ed. 2, p. 585. Nomen nudum.
- Ophion glabratus* Say, 1836. *Boston Jour. Nat. Hist.* 1: 239. Sex not indicated.
- Ophion arctiae* Riley, 1890. In Riley and Howard, *U. S. Dept. Agr.*, *Insect Life* 3: 155. Nomen nudum.
- Eremotylus arctiae* Ashmead, 1896. *Amer. Ent. Soc.*, Trans. 23: 192. ♀ (♂ misdet.).
- Allocampus cubitalis* Morley, 1912. *Rev. Ichn. Brit. Mus.*, v. 1, p. 25. ♀. Preocc. by Szepligeti, 1906.
- Eniscopilus excubitalis* Walkley, 1958. In Krombein *et al.*, *U. S. Dept. Agr.*, *Agr. Monog.* 2, Sup. 1, p. 62. N. name for *A. cubitalis* Morley.

Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 103 (syn.).

merdarius (Gravenhorst). Que. w. to s.e. Alaska, s. to Fla., s. Tex., and s. Calif.; West Indies, Mexico, Nicaragua; South America; Asia; Europe. Host: *Alabama argillacea* (Hbn.), *Ceramica picta* (Harris), *Leucania latiuscula* H.-S., *L. multilinea* Wlk., *Feltia subterranea* (F.), *Peridroma saucia* (Hbn.), *Pseudaletia unipuncta* (Haw.), *Scoliopteryx libatrix* (L.), *Scotogramma trifolii* (Rott.), *Spodoptera frugiperda* (J. E. S.), *S. ornithogalli* (Gn.), *Heterocampa guttivitta* (Wlk.), *Schizura concinna* (J. E. S.), *S. unicornis* (J. E. S.), *Drepana bilineata* (Pack.).

Ophion merdarius Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 698. ♂, ♀.

Ophion purgatus Say, 1836. Boston Jour. Nat. Hist. 1: 239. ♂, ♀.

Ophion lateralis Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 141. [female].

Ophion flaviceps Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 142. [female].

Ophion volubilis Holmgren, 1869 (1868). Eug. Resa, pt. 2, sec. 1, p. 410. ♂, ♀.

Taxonomy: Townes and Townes, 1966. Amer. Ent. Inst., Mem. 8: 181-182 (syn.).

texanus (Ashmead). N. Y., s.w. Va., Ohio, Tex., s.e. Wash., n.e. Calif.

Thyreodon texanus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 422. ♂.

SUBFAMILY MESOCHORINAE

It is certain that most of the members of this subfamily are hyperparasitic, and I speculate that those Mesochorinae which may eventually be proven not to be hyperparasitic will be shown to be cleptoparasitic. Some species of Mesochorinae parasitize other Ichneumonidae, but a greater number parasitize Braconidae. At least four Nearctic species of *Mesochorus* have been reared from Tachinidae. The hosts of Mesochorinae are internal parasites of various insects, most of the latter being phytophagous. Mesochorinae have been reared from parasites of Lepidoptera, Symphyta, Coleoptera, Miridae, and, according to Dr. C. C. Loan (personal communication, 1975), even Psocoptera. Mesochorines insert the ovipositor into the secondary host and in turn locate the early-instar larva or even the egg of a primary parasite and oviposit inside the latter.

Dasch (1971) said that "considerable evidence seems to indicate that many species [of Mesochorinae] are primary parasites of lepidopterous and coleopterous larvae," but this statement appears to be inaccurate. For Mesochorinae to be primary parasites of these hosts, they would have to spin their own cocoons or emerge from lepidopterous pupae. I do not know of any case in which a mesochorine specimen is mounted with a lepidopterous pupa from which it emerged or is otherwise known with certainty to have emerged from a lepidopterous pupa. In substantiated cases of emergence from lepidopterous pupae, proof of primary parasitism could be made only through dissection of the host remains, because mesochorines may be able to parasitize primary parasites which oviposit into lepidopterous larvae and emerge from the pupae (such as Anomaloniinae [Dasch (1971) cited a published record of a *Trichionotus* sp. as a host], Metopiinae Ichneumoninae, certain Campopleginae, or meteorideine Braconidae). In any case, the majority of mesochorine specimens labeled as being reared from Coleoptera or Lepidoptera have emerged from cocoons, and when these specimens are mounted together with the cocoons from which they have emerged, the cocoons prove to be those of Braconidae or other Ichneumonidae. The only possible exception that I am aware of is *Plectochorus iwatensis* (Uchida), a Eurasian species which apparently spins a cocoon of its own and thus appears to be a primary parasite of *Grapholitha molesta* (Bsk.) (cf. Haeussler, 1940). It is remotely possible that some of the species of Mesochorinae which have been reared from cocoons of sawflies could be primary parasites, but this could not be established without dissecting the contents of the cocoons and determining that they do not include the larval remains of an additional ichneumonid or an ichneutine braconid.

Revision: Dasch, 1971. Amer. Ent. Inst., Mem. 16: 1-376 (Nearctic spp.). —Dasch, 1974. Amer. Ent. Inst., Mem. 22: 1-509 (Neotropical spp.).

Biology: Haeussler, 1940. U. S. Dept. Agr., Tech. Bul. 728: 24-25 (*Plectochorus iwatensis* [Uchida]).

Genus CIDAPHUS Foerster

Cidaphus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 149.

Type-species: *Cidaphus thuringiacus* Brauns. Desig. by Viereck, 1914 from two species included by Brauns, 1890. Perkins (1962) regarded the type-species as a synonym of *C. alarius* (Gravenhorst).

Plesiophthalmus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 170. Preocc. by Motschoulsky, 1858.

Type-species: *Mesochorus alarius* Gravenhorst. By subsequent monotypy from inclusion by Brischke, 1871.

Mater Schulz, 1911. Zool. Ann. 4: 22. N. name for *Plesiophthalmus* Foerster.

Tetragonalys Morley, 1913. Rev. Ichn. Brit. Mus., v. 2, p. 132.

Type-species: *Tetragonalys barbarica* Morley. Desig. by Morley, 1913.

Plesiophthalmidea Viereck, 1914. U. S. Natl. Mus., Bul. 83: 119.

Type-species: *Plesiophthalmus panisoides* Ashmead. Monotypic and orig. desig.

Ophthalmochorus Roman, 1925 (1924). Arkiv for Zool. 17 A (4): 29. N. name for *Plesiophthalmus* Foerster.

This is a moderate sized genus of practically worldwide distribution.

Revision: Cushman, 1924. U. S. Natl. Mus., Proc. 64 (20): 4-6.

Taxonomy: Perkins, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 11: 414.

australis Cushman. Que., Ont., n. Minn., and B. C., s. to Va., Ala., Idaho, and Wash.

Cidaphus australis Cushman, 1924. U. S. Natl. Mus., Proc. 64 (20): 6. ♀.

Cidaphus melleus Walley, 1935. Canad. Ent. 67: 112. ♂, ♀.

occidentalis Cushman. Newfoundland (Labrador and insular) w. to Alaska, s. to N. H., Ohio, Colo., Ariz., and Wash.

Cidaphus occidentalis Cushman, 1924. U. S. Natl. Mus., Proc. 64 (20): 5. ♀.

panisoides (Ashmead). Maine, Ont., and Mich., s. to n.w. S. C., w. Ky., and N. Mex. Ecology:

Can be presumed to have been reared from a parasite of *Heterocampa manteo* (Dblly.).

Plesiophthalmus panisoides Ashmead, 1892. Ent. News 3: 107. ♂.

sinuosus Dasch. Ariz.; Mexico.

Cidaphus sinuosus Dasch, 1971. Amer. Ent. Inst., Mem. 16: 13. ♂, ♀.

Genus ASTIPHROMMA Foerster

Astiphromma Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 170.

Type-species: *Mesochorus scutellatus* Gravenhorst. Desig. by Morley, 1913 from six species included by Brischke, 1880.

Astiphrommus Thomson, 1886. Soc. Ent. de France, Ann. (6) 5: 327. Emend.

Dolichochoerus Strobl, 1904 (1903). Naturw. Ver. f. Steiermark, Mitt. 40: 108.

Type-species: *Dolichochoerus longiceps* Strobl. Monotypic.

Mesochorella Szepligeti, 1911. In Wytsman, Gen. Ins., fasc. 114, p. 48.

Type-species: *Mesochorus nigriceps* Brischke. Monotypic.

Pseudoacoenitus Kiss, 1924. Siebenbuerg. Ver. Naturw., Verh. u. Mitt. 72-74: 96.

Type-species: *Pseudoacoenitus transsylvanicus* Kiss. Monotypic.

Demophorellus Hedwig, 1955. Bombus 1: 379.

Type-species: *Demophorellus mimulus* Hedwig. Monotypic.

This is a moderately large Holarctic genus.

Revision: Nakanishi, 1969. Sieboldia 4: 50-74 (Japanese spp., except those without smooth scutellum).

alsium Dasch. Alta., interior Alaska, n. B. C., w. Wash.

Astiphromma alsium Dasch, 1971. Amer. Ent. Inst., Mem. 16: 35. ♂, ♀.

aquilonare Dasch. Northern Que. and N. W. T., s. to s. Que., Alta., and B. C. Ecology: Can be presumed to have been reared from parasites of *Pikonema alaskensis* (Roh.) and *P. dimmockii* (Cr.).

Astiphromma aquilonare Dasch, 1971. Amer. Ent. Inst., Mem. 16: 44. ♂, ♀.

calvum Dasch. Ariz.

Astiphromma calvum Dasch, 1971. Amer. Ent. Inst., Mem. 16: 43. ♂, ♀.

cordatum Dasch. Northern Mich., Alta.

Astiphromma cordatum Dasch, 1971. Amer. Ent. Inst., Mem. 16: 24. ♀.

coronale Dasch. N. Y., Pa., Md., Ont., Ohio, Mich.

Astiphromma coronale Dasch, 1971. Amer. Ent. Inst., Mem. 16: 30. ♂, ♀.

euryops Dasch. Ohio, w. N. C., e. Tenn.

Astiphromma euryops Dasch, 1971. Amer. Ent. Inst., Mem. 16: 32. ♂, ♀.

eximium Dasch. Pa., Mich., n. B. C.

Astiphromma eximium Dasch, 1971. Amer. Ent. Inst., Mem. 16: 25. ♀.

exitiale Dasch. Newfoundland (insular), n. Que., w. N. W. T., and interior Alaska, s. to Md., w. N. C., Colo., and Idaho.

Astiphromma exitiale Dasch, 1971. Amer. Ent. Inst., Mem. 16: 33. ♂, ♀.

gilvicrus Dasch. N. Y., Mich., s.e. Minn.

Astiphromma gilvicrus Dasch, 1971. Amer. Ent. Inst., Mem. 16: 21. ♂, ♀.

leucogrammus (Holmgren). Northern Que. w. to n. Alaska, s. to s. Que., Man., Colo., and w.

Wash.; n. Eurasia. Ecology: Reared or presumed to have been reared from parasites of the following Tenthredinidae-- *Hemimichroa crocea* (Geoff.), *Pikonema alaskensis* (Roh.), and *Nematus* sp. Host: *Lamachus angularius* (Davis).

Mesochorus leucogrammus Holmgren, 1860 (1858). Svenska Vetensk.-Akad. Handl. (n. f.) 2 (8): 121. ♀.

luculentum Dasch. Colo., B. C., e. Wash. Ecology: One paratype can be presumed to have been reared from a parasite of a tenthredinid, and two others were collected at elevations of 9800 ft. and 10300 ft. on Mt. Evans in Colo.

Astiphromma luculentum Dasch, 1971. Amer. Ent. Inst., Mem. 16: 40. ♂, ♀.

nitidum Dasch. Western Alta. Ecology: The unique holotype can be presumed to have been reared from a parasite of the geometrid, *Lycia ursaria* Wlk.

Astiphromma nitidum Dasch, 1971. Amer. Ent. Inst., Mem. 16: 39. ♂.

pectorale Ashmead. Que. s. to Tenn., w. to Wis., e. Kans., and Tex. Ecology: Can be presumed to have been reared from parasites of the geometrids, *Alsophila pomataria* (Harris) and *Erannis tiliaria* (Harris).

Astiphromma pectoralis Ashmead, 1892. Ent. News 3: 107. ♂.

perditum Dasch. Que. w. to s. Man., s. to n.w. S. C. and s. Ill.

Astiphromma perditum Dasch, 1971. Amer. Ent. Inst., Mem. 16: 41. ♂, ♀.

psychron Dasch. Northern Que.

Astiphromma psychron Dasch, 1971. Amer. Ent. Inst., Mem. 16: 46. ♀.

rutilum Dasch. N. Y., w. N. C., n.w. S. C., Ohio, s.e. Mich., e. Kans., Tex.

Astiphromma rutilum Dasch, 1971. Amer. Ent. Inst., Mem. 16: 22. ♂, ♀.

simile Dasch. Conn., N. J., n.w. S. C., Ohio, Mich., Ky.

Astiphromma simile Dasch, 1971. Amer. Ent. Inst., Mem. 16: 37. ♂, ♀.

splenium (Curtis). Que. w. to Alaska, s. to Md., w. N. C., Colo., and n. Calif.; Eurasia. Ecology:

Reared or presumed to have been reared from parasites of the following-- *Caripeta divisata* Wlk., *Cladara limitaria* (Wlk.), *C. nigroangulata* (Stkr.), *Dysstroma citrata* (L.), *Eupithecia placidata* Taylor, *E. unicolor* Hulst, *Lambdina fiscellaria fiscellaria* (Gn.), *L. f. lugubrosa* (Hulst), *Melanolophia imitata* (Wlk.), *Nepytia canosaria* (Wlk.), *Dasychira griseifacta* (Dyar)?, *Leucoma salicis* (L.), *Malacosoma dissitia* (Hbn.), *Enargia decolor* (Wlk.), and a tenthredinid. Host: *Meteorus hyphantriae* Riley?, *Zemiotetes reticulatus* (Mues.), *Phobocampe geometrae* (Ash.).

Mesochorus sericans Curtis, 1833. Brit. Ent., v. 10, pl. 424. "♂" = ♀. Described from Ireland (presumably Belfast). Examination of material which the U. S. Natl. Museum acquired from A. W. Stelfox leads me to believe that *sericans*, as illustrated by Curtis, is quite probably an abnormally melanic specimen of *splenium*. N. syn. (uncertain).

Mesochorus Splenium Curtis, 1833. Brit. Ent., v. 10, pl. 424. ♂. Dr. H. K. Townes informed me (personal commun., 1977) that he saw notes which Dr. J. F. Perkins made in studying what is now the lectotype (see Fitton, 1976) which indicated that *M. strenuus* Holmgren is a synonym of *splenium*, and Dr. Townes suggested that I consult the original description of *splenium* to see if it agreed with what Dr. Perkins had concluded. Having done so, I see no reason to doubt that Dr. Perkins was correct.

Mesochorus strenuus Holmgren, 1860 (1858). Svenska Vetensk.-Akad. Handl. (n. f.) 2 (8): 119. ♂, ♀. N. syn.

Plectiscus pleuralis Provancher, 1875. Nat. Canad. 7: 330. "♀" = ♂. N. syn.

Plectiscus provancheri Dalla Torre, 1901. Cat. Hym., v. 3, p. 24. Unnecessary n. name for *P. pleuralis* Provancher; preocc. secondarily only by virtue of a bibliographic error which led Dalla Torre to erroneously place *Tryphon pleuralis* Cresson, 1864, in *Plectiscus*. N. syn.

Mesochorus orcae Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 239. ♂. N. syn.

Astiphronma kiotense Uchida, 1933. Insecta Matsumurana 8: 57. ♂, ♀. N. syn.

Astiphronma sachalinense Uchida, 1933. Insecta Matsumurana 8: 57. ♀. N. syn.

Taxonomy: Townes, 1939. Canad. Ent. 71: 96. — Townes, Momoi, and Townes, 1965. Amer. Ent. Inst., Mem. 5: 341 (syn.). — Fitton, 1976. Brit. Mus. (Nat. Hist.) Ent., Bul. 32: 323 (lectotypes selected for Curtis names).

Genus MESOCHORUS Gravenhorst

Mesochorus Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 960.

Type-species: *Mesochorus splendidulus* Gravenhorst. Desig. by Curtis, 1833.

Edrisa Cameron, 1907. Tijdschr. v. Ent. 50: 111.

Type-species: *Edrisa pilicornis* Cameron. Monotypic.

Zamesochorus Viereck, 1912. U. S. Natl. Mus., Proc. 42: 152.

Type-species: *Zamesochorus orientalis* Viereck. Monotypic and orig. desig.

Cryptochorus Aubert, 1965. Soc. Ent. de Mulhouse, Bul. 21: 22.

Type-species: *Cryptochorus obliterator* Aubert. Monotypic and orig. desig.

This very large genus is worldwide in distribution.

acuminatus Thomson. N. B. w. to w. Ont., s. to Md. and Ill. Ecology: Reared or presumed to have been reared from parasites of the following— Spingidae (*Cressonia juglandis* [Smith], *Darapsa versicolor* [Harris], *Manduca* sp., *Sphinx kalmiae* [J. E. S.] and Notodontidae (*Heterocampa guttivitta* [Wlk.], *Pheosia rimosa* Pack.). Host: *Apanteles* sp., *Microplitis* sp.

Mesochorus acuminatus Thomson, 1885. Soc. Ent. de France, Ann. (6) 5: 343. ♂.

agilis Cresson. Newfoundland (Labrador) w. to Alaska, s. to N. Y., Mich., N. Mex., Ariz., and n.e. Calif.; Greenland; Europe; n. Mexico. Ecology: Reared from larval parasites of Coleoptera (Curculionidae) and presumed to have been reared from a parasite of *Crambidia casta* (Pack.) (Lepidoptera, Arctiidae). Host: *Bathyplectes curculionis* (Thom.), *Dimophora* sp.

Mesochorus agilis Cresson, 1865. Ent. Soc. Phila., Proc. 4: 266. ♀.

Mesochorus nigriceps Thomson, 1885. Soc. Ent. de France, Ann. (6) 5: 334. ♂, ♀. Preocc. by Brischke, 1880.

Mesochorus punctipleuris Thomson, 1885. Soc. Ent. de France, Ann. (6) 5: 334. ♂, ♀.

Mesochorus Thomsonii Dalla Torre, 1901. Cat. Hym., v. 3, p. 59. N. name for *nigriceps* Thomson.

alaskensis Dasch. Southwestern Alaska.

Mesochorus alaskensis Dasch, 1971. Amer. Ent. Inst., Mem. 16: 109. ♀.

americanus Cresson. Newfoundland (insular) and n. Que. w. to s.w. Alaska, s. to Fla., s. Tex., Ariz., and Oreg.; n.e. Asia, Europe. Ecology: Reared or presumed to have been reared from parasites of the following Lepidoptera— *Thecla* sp., *Colias philodice* Godt., *Acronicta obliqua* (J. E. S.)?, *Amathes c-nigrum* (L.), *Autographa californica* (Spey.), *Eurois* sp., *Peridroma saucia* (Hbn.), *Pseudaletia unipuncta* (Haw.), *Spodoptera ornithogalli* (Gn.), *Hemaris* sp., *Manduca* sp., *M. quinquemaculata* (Haw.), *M. sexta* (Joh.), *Ctenucha virginica* (Chap.), *Euchaetias egle* (Drury), *Caripeta divisata* Wlk., *Semiothisa "gravitata"* auct., *S. sexmaculata* (Pack.), *Bucculatrix canadensisella* Cham. Host: *Apanteles* sp., *A. congregatus* (Say), *A. glomeratus* (L.), *A. laeviceps* Ash., *A. rufocoxalis* Riley, *A. scitulus* Riley, *A. xylinus* (Say), *Meteorus* sp.

Mesochorus americanus Cresson, 1872. Canad. Ent. 4: 23. ♀.

Mesochorus scitulus Cresson, 1872. Canad. Ent. 4: 24. ♂, ♀.

- Mesochorus aprilius* Riley, 1890. In Riley and Howard, U. S. Dept. Agr., Insect Life 3: 156. Nomen nudum.
- Mesochorus aprilius* Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 195. ♀. The syntype referred to as the "type" by Dasch (1971) is apparently from D. C., not from "Lafayette, Indiana" as Dasch stated.
- Mesochorus frontalis* Ashmead, 1899 (1898). In Jordan, Fur Seals and Fur-Seal Isls. N. Pacific, v. 4, p. 336. ♂. The type locality is Ostrov Bering (i.e. Bering Isl.), U. S. S. R.
- Taxonomy: Dasch, 1971. Amer. Ent. Inst., Mem. 16: 258-262.
- apantelis** Dasch. Que. s. to Fla., w. to Mich., Mo., and Tex. Ecology: Reared or presumed to have been reared from parasites of the following: "*Vanessa*" sp., *Hymenia recurvalis* (F.), *Cosmopteryx* sp. on morning glory, *Bedellia minor* Bsk., and a leaf miner on *Vitis*. Host: *Apanteles* sp. ex "*Vanessa*" sp.
- Mesochorus apantelis* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 266. ♂, ♀.
- applanatus** Dasch. Northern Que. w. to w. N. W. T., s. to Md., n. Ga., Colo., and Oreg. Ecology: Presumed to have been reared from parasites of the following Lepidoptera and Symphyta-- *Semiothisa sexmaculata* (Pack.), *Empria multicolor* (Nort.), *Macremphytus testaceus* (Nort.), and *Monophadnoides geniculatus* (Htg.).
- Mesochorus applanatus* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 154. ♂, ♀.
- arcticus** Dasch. Subarctic Alaska.
- Mesochorus arcticus* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 175. ♀.
- areolatus** Provancher. N. S., Que., N. Y., w. N. C., n. Ga., Ont., Mich., Sask., Alta., Alaska, B. C., Wash. Ecology: Presumed to have been reared from a parasite of *Semiothisa "granitata"* auct.
- Mesochorus areolatus* Provancher, 1883. Nat. Canad. 14: 5. ♀.
- asperifrons** Dasch. Western N. C., n.w. S. C., Ohio, s. Mich., Ky., s. Ala., Ill., e. Kans., Ariz.
- Mesochorus asperifrons* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 268. ♂, ♀.
- balteatus** Dasch. Que., N. H., N. Y., N. J., Md., w. N. C., Ont., Ohio, Ala.
- Mesochorus balteatus* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 162. ♂, ♀.
- bellus** Dasch. Minn., s. Man.
- Mesochorus bellus* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 208. ♀.
- bucculentus** Dasch. Northern Mich., B. C., Wash., n.e. Calif.
- Mesochorus bucculentus* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 223. ♂, ♀.
- calais** Viereck. N. H., Ont., Sask., and Alta., s. to Va., Ohio, and Mich.
- Mesochorus calais* Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 280. ♀.
- carolinensis** Dasch. Western N. C., n.w. S. C., n. Fla., s. Ont., s. Mich., e. Tenn.
- Mesochorus carolinensis* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 133. ♀.
- coronatus** Dasch. Que. w. to n. Yukon and Alaska, s. to N. J., s.e. Iowa, S. Dak., Colo., and n.e. Calif.
- Mesochorus coronatus* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 230. ♂, ♀.
- cupreatus** Dasch. P. E. I. s. to w. N. C., w. to n. Alta. and Wash. Host: *Dimophora* sp.
- Mesochorus cupreatus* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 106. ♀.
- curvulus** Thomson. Northern Que., N. W. T., and Alaska, s. to n.w. S. C., e. Kans., Ariz., and n.e. Calif.; Europe. Ecology: Reared from parasites of Miridae (*Dicyphus* sp., *Halticus intermedius* Uhler, *Lopidea marginalis* Reut., *Lygus lineolaris* [Beauv.], *Phytocoris* sp., *Plagiognathus conicola* Knight, *P. politus* Uhler, *Slaterocoris stygicus* [Say]) and adult Chrysomelidae (*Phyllotreta striolata* [F.]); apparently also reared from parasites of Lepidoptera (*Melanolophia imitata* [Wlk.] and *Autographa* sp.). Host: *Leiophron* spp., *L. sp.* near *maculipennis* (Ash.), *Peristenus* sp. near *pallipes* (Curt.), *P. plagiognathi* (Loan), *Microctonus vittatae* Mues.
- Mesochorus curvulus* Thomson, 1885. Soc. Ent. de France, Ann. (6) 5: 343. ♂, ♀.
- Mesochorus kincaidi* Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 238. ♀.
- Mesochorus phyllotretae* Jourdheuil, 1957. Soc. Ent. de France, Bul. 62: 42. ♂, ♀.
- deletus** Dasch. Alta., interior Alaska, n. B. C., Wash.
- Mesochorus deletus* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 170. ♂, ♀.

- dentatus* Dasch. N. Y., Ky., Minn., Colo., Alta., s.e. B. C., n. Idaho. Ecology: Presumed to have been reared from a parasite of *Arge pectoralis* (Leach).
- Mesochorus dentatus* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 125. ♂, ♀.
- discitergus* (Say). Newfoundland (insular) w. to interior Alaska, s. to Fla., Tex., Ariz., and Wash.; West Indies and Mexico s. to Brazil and Peru; Eurasia; South Africa? Ecology: Reared or presumed to have been reared from parasites of the following-- Papilionidae (*Papilio polyxenes asterius* Stoll.), Pieridae (*Colias eurytheme* Bdv.), Geometridae (*Anthelia hyperborea* Hulst, *Biston betularia cognataria* [Gn.], *Caripeta* sp., *C. angustiorata* Wlk.), *C. divisata* Wlk., *Ectropis* sp., *Enypia packardata* Tay., *Epirrita autumnata henshawi* [Swett], *Eupithecia* sp., *Lambdina fiscellaria fiscellaria* [Gn.], *L. f. lugubrosa* [Hulst], *Lobophora nivigerata* Wlk., *Melanolophia imitata* [Wlk.], *Nepytia canosaria* [Wlk.], *N. phantasmaria* [Stkr.], *Pleuroprucha insularia* [Gn.], *Semiothisa "granitata"* auct., *S. oweni* [Swett]), Limacodidae (*Prolimacodes badia* [Hbn.], Noctuidae (*Caenurgina erechtea* [Cramer], *Celama triguetra* [Fitch], *Ceramica picta* [Harris], *Feralia jocosia* [Gn.], *Heliothis zea* [Bod.], *Panthea portlandia* Grt., *Peridroma saucia* [Hbn.], *Pseudaletia unipuncta* [Haw.], *Spodoptera frugiperda* [J. E. S.]), Sphingidae (*Manduca sexta* [Joh.]), Arctiidae (*Euchaetias egle* [Drury], *Halisdota* s. *H. caryae* [Harris], *H. maculata* [Harris], *H. tessellaris* [J. E. S.], *Tyria jacobaea* [L.], Lymantriidae (*Dasychira plagiata* [Wlk.], *D. vagana* [B. and McD.]), Notodontidae (*Notodonta* sp.), Zygaenidae (*Harrisina americana* [Gn.]), Lyonetiidae (*Bedellia minor* Bsk.), sp. of Pterophoridae, and Tenthredinidae (*Anoplonyx* sp.). Host: *Apanteles* sp., *A. glomeratus* (L.), *A. lunatus* (Pack), *A. militaris* (Walsh), *A. paleacritae* Riley, *Meteorus communis* (Cr.), *Microplitis melianae* Vier?
- Cryptus discitergus* Say, 1836. Boston Jour. Nat. Hist. 1: 231. ♀.
- Mesochorus vitreus* Walsh, 1861. Ill. State Agr. Soc., Trans. 4: fig. 4; p. 364, p. 368. ♂, ♀. Synonymy uncertain because in revising the concept of *discitergus* Dasch (1971) erroneously selected as "lectotypes" of *vitreus* two female specimens which are not Walsh type material and bear no label in the handwriting of Walsh. The alternate spelling "*vitrens*" appeared in the legend for Walsh's figure 4.
- Mesochorus obliquus* Cresson, 1872. Canad. Ent. 4: 24. ♀.
- Mesochorus facialis* Bridgman, 1884. Ent. Soc. London, Trans. 32: 431. ♂, ♀.
- Mesochorus pulchellus* Cook and Davis, 1891. Mich. Agr. Expt. Sta. Bul. 73: 10. ♀.
- Mesochorus infernalis* Viereck, 1911. U. S. Natl. Mus., Proc. 40: 192. ♂, ♀.
- Mesochorus nigrisignus* Viereck, 1911. U. S. Natl. Mus., Proc. 40: 192. ♀.
- Mesochorus concinnatus* Wilkinson, 1929. Bul. Ent. Res. 20: 105. ♂, ♀. Uncertain syn.; placed as a synonym of *discitergus* by Dasch (1971); placed instead as a synonym of *M. ornatus* Wilkinson (an Ethiopian species) by Townes and Townes (1973) who erroneously stated that "*ornatus* is listed erroneously [by Dasch] as a synonym [of *discitergus*] and the record from South Africa is based on a misdetermined specimen of *ornatus*."
- Mesochorus narangae* Uchida, 1930. Insecta Matsumurana 4: 129. ♂, ♀.
- Mesochorus facialis* var. *nigristemmaticus* Uchida, 1931. Insecta Matsumurana 5: 158. ♀.
- Mesochorus havrolenkoi* Blanchard, 1949. In Havrolenko and Winterhalter, Insectos del Parque Nac. Nuhuel Huapi, Buenos Aires, p. 48. Nomen nudum (figure only).
- Taxonomy: Dasch, 1971. Amer. Ent. Inst., Mem. 16: 252-257. —Townes and Townes, 1973. Amer. Ent. Inst., Mem. 19: 186. —Dasch, 1974. Amer. Ent. Inst., Mem. 22: 250-254.
- distentus* Dasch. Eastern Wash.
- Mesochorus distentus* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 236. ♂.
- divaricatus* Dasch. Colo.
- Mesochorus divaricatus* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 225. ♂, ♀.
- dreisbachi* Dasch. Que. w. to Alaska, s. to Ky., e. Kans., Utah, and n. Calif.
- Mesochorus dreisbachi* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 99. ♂, ♀.
- ejuncidus* Dasch. Western N. C., Colo., Ariz., B. C., Wash., Oreg.
- Mesochorus ejuncidus* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 182. ♂, ♀.
- elongatus* Dasch. Central and s.e. Ariz.
- Mesochorus elongatus* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 83. ♂, ♀.

- erythraeus** Dasch. Alta., s.e. B. C. Ecology: Reared or presumed to have been reared from parasites of the following-- *Eupithecia placidata* Tay., *Neocalcis californiaria* f. *latifaciaria* (Pack.), *Semiothisa "granitata"* auct., and *Anomogyna* sp. Host: *Hyposoter* sp.
- Mesochorus erythraeus** Dasch, 1971. Amer. Ent. Inst., Mem. 16: 191. ♂, ♀.
- exsertus** Dasch. N. S. w. to Yukon and Alaska, s. to Md., n.w. S. C., e. S. Dak., Colo., Ariz., and Oreg. Ecology: Reared or presumed to have been reared from parasites of the following-- *Semiothisa "granitata"* auct., *Neodiprion* sp., *Cimber americana* Leach, and *Trichiosoma triangulum* Kby. Host: *Enicospilus merdarius* (Gravenhorst).
- Mesochorus exsertus** Dasch, 1971. Amer. Ent. Inst., Mem. 16: 156. ♂, ♀.
- flavidus** Dasch. Pa., w. N. C., Ohio, Tenn., e. Kans.
- Mesochorus flavidus** Dasch, 1971. Amer. Ent. Inst., Mem. 16: 123. ♂, ♀.
- foersteri** Dasch. N. S., n. Man. and s.w. Yukon, s. to Pa., Mich., Colo., w. Mont., and s. B. C.
- Mesochorus foersteri** Dasch, 1971. Amer. Ent. Inst., Mem. 16: 107. ♀.
- fuliginatus** Dasch. Newfoundland (Labrador) w. to n. B. C., s. to Maine, Mich., N. Mex., Utah, and n.e. Calif. Ecology: One specimen can be presumed to have been reared from a parasite of the chrysomelid, *Pyrrhalta decora carbo* (LeC.).
- Mesochorus fuliginatus** Dasch, 1971. Amer. Ent. Inst., Mem. 16: 90. ♂, ♀.
- gelidus coriaceus** Dasch. Northern Que., n.e. N. W. T., n. Yukon.
- Mesochorus gelidus coriaceus** Dasch, 1971. Amer. Ent. Inst., Mem. 16: 204. ♂, ♀.
- gelidus gelidus** Dasch. Colo. Ecology: The four type specimens were collected on Mt. Evans, Colo. at elevations between 9800 ft. and 13200 ft.
- Mesochorus gelidus gelidus** Dasch, 1971. Amer. Ent. Inst., Mem. 16: 204. ♂, ♀.
- gemmatus** Dasch. Que., N. Y., Pa., Md., Ohio, s. Mich.
- Mesochorus gemmatus** Dasch, 1971. Amer. Ent. Inst., Mem. 16: 111. ♂, ♀.
- globulator** (Thunberg). Southern Man., w. N. W. T., Alta.; Europe. Host: *Mesoleius tenthredinis* Morl., *Olesicampe benefactor* Hinz.
- Ichneumon globulator* Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 266; 9: 322. [female].
- Mesochorus dimidiatus** Holmgren, 1860 (1858). Svenska Vetensk.-Akad. Handl. (n. f.) 2 (8): 118. ♂.
- Mesochorus crassimanus** Holmgren, 1860 (1858). Svenska Vetensk.-Akad. Handl. (n. f.) 2 (8): 125. ♀.
- Taxonomy: Roman, 1912. Ent. Tidskr. 33: 67 (syn.). —Roman, 1912. Zool. Bidr. Uppsala 1: 258 (syn.).
- grandisops** Dasch. Southern B. C., Wash., Calif.; n. Mexico. Ecology: Reared or presumed to have been reared from parasites of the following-- *Lambdina fiscellaria lugubrosa* (Hulst), *Melanolophia imitata* (Wlk.), *Nepytia canosaria* (Wlk.), and *Semiothisa "granitata"* Host: *Meteorus hyphantriae* Riley.
- Mesochorus grandisops** Dasch, 1971. Amer. Ent. Inst., Mem. 16: 189. ♂, ♀.
- hamatus** Townes. Que. s. to Md., w. to n.w. Mich. and e. Kans.
- Mesochorus basalis** Cresson, 1872. Canad. Ent. 4: 22. ♀. Preocc. by Curtis, 1833.
- Mesochorus hamatus** Townes, 1945. Amer. Ent. Soc., Mem. 11: 753. N. name for *basalis* Cresson.
- hesperus** Dasch. Southern Alta., s.w. Yukon.
- Mesochorus hesperus** Dasch, 1971. Amer. Ent. Inst., Mem. 16: 211. ♂.
- hirticoleus** Dasch. Northwestern S. C., n. Fla., Iowa, s. La.
- Mesochorus hirticoleus** Dasch, 1971. Amer. Ent. Inst., Mem. 16: 137. ♂, ♀.
- holmgreni** Dasch. Maine, R. I., w. Va., n. Fla., Ohio, n. Wis. Ecology: One of the paratypes can be presumed to have been reared from a parasite of *Heterarthrus nemoratus* (Fall.), but the holotype was collected at light in northern Fla.
- Mesochorus holmgreni** Dasch, 1971. Amer. Ent. Inst., Mem. 16: 84. ♂, ♀.
- imitatus** Dasch. R. I., N. Y., Pa., W. Va., n.w. S. C., Ohio, Mich.
- Mesochorus imitatus** Dasch, 1971. Amer. Ent. Inst., Mem. 16: 152. ♂, ♀.

- inaequidens* Dasch. N. S., Que., Mass., Ont., w. Wyo., Colo., Alta., w. Nev., s. B. C., Wash., and n. Calif.
Mesochorus inaequidens Dasch, 1971. Amer. Ent. Inst., Mem. 16: 116. ♂, ♀.
- incultus* Dasch. N. B. w. to B. C., s. to n.w. S. C., s. Ariz., and n. Calif. Ecology: Paratypes should be presumed to have been reared from parasites of the following-- Geometridae (*Caripeta* sp. *C. divisata* Wlk., *Erannia tiliaria* [Harris], *Lambdina fiscellaria lugubrosa* [Hulst], *Melanolophia imitata* [Wlk.], *Nepytia canosaria* [Wlk.], *Pero behrensarius* [Pack.], *Semiothisa* sp., *S. sexmaculata* [Pack.], *Synaxis pallulata* [Hulst]), Arctiidae (*Halisidota* sp.), Noctuidae (*Feralia comstocki* [Grt.], *F. jocosa* [Gn.], *Lithophane petulca* Grt., *Zale* sp., *Z. duplicata* [Beth.], *Z. minerea norda* [Smith]), Gracilariidae (*Marmara arbutiella* Bsk.), and Tenthredinoidea ("green bracken sawfly").
 Host: *Microplitis* sp. ex *Melanolophia imitata* (Wlk.).
Mesochorus incultus Dasch, 1971. Amer. Ent. Inst., Mem. 16: 101. ♂, ♀.
- inflatus* Dasch. Ohio. Known only from the holotype.
Mesochorus inflatus Dasch, 1971. Amer. Ent. Inst., Mem. 16: 161. ♀.
- infuscatus* Dasch. N. S., Que., Md., Ohio.
Mesochorus infuscatus Dasch, 1971. Amer. Ent. Inst., Mem. 16: 159. ♂, ♀.
- inobseptus* Dasch. Northern Alaska. Host: Tachinid ex larva of *Chrysolina subsulcata* (Mann.).
Mesochorus inobseptus Dasch, 1971. Amer. Ent. Inst., Mem. 16: 128. ♂, ♀.
- intonsus* Dasch. N. S. s. to e. N. C. and n.w. S. C., w. to Wis. and e. Kans. Ecology: One of the paratypes can be presumed to have been reared from a parasite of *Macremphytus tarsatus* (Say).
Mesochorus intonsus Dasch, 1971. Amer. Ent. Inst., Mem. 16: 114. ♂, ♀.
- iridescens* Cresson. Northern Calif.
Mesochorus iridescens Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 369. ♀.
- jucundus* Provancher. Que. w. to Wash., s. to n. Fla., s.e. Tex., Utah, and Oreg.
Mesochorus jucundus Provancher, 1883. Nat. Canad. 14: 5. ♀.
- kamouraskae* Dasch. Northern Que. w. to n.w. Alta., s. to Pa., Ont., Mich., and s.w. Alta.
 Ecology: One of the paratypes should be presumed to have been reared from a parasite of *Caripeta angustiorata* Wlk.
Mesochorus kamouraskae Dasch, 1971. Amer. Ent. Inst., Mem. 16: 168. ♂, ♀.
- kansensis* Dasch. Southern Kans. Known only from the holotype.
Mesochorus kansensis Dasch, 1971. Amer. Ent. Inst., Mem. 16: 132. ♀.
- kentuckiensis* Dasch. Ont., w. Ky.
Mesochorus kentuckiensis Dasch, 1971. Amer. Ent. Inst., Mem. 16: 127. ♂, ♀.
- longiscutatus* Dasch. Que. w. to n. Yukon and Alaska, s. to w. N. C., n. Mich., Colo., and s. B. C. Ecology: Two paratypes can be presumed to have been reared from parasites of the following microlepidoptera-- *Cerostoma dorsimaculella* Kft. (Yponomeutidae) and a gelechiid.
Mesochorus longiscutatus Dasch, 1971. Amer. Ent. Inst., Mem. 16: 173. ♂, ♀.
- luteipes* Cresson. R. I., N. J., Pa., n. Ga., n. Fla., Tex.; w. Mexico.
Mesochorus luteipes Cresson, 1872. Canad. Ent. 4: 22. ♀.
- maleficus* Dasch. N. Y., Ont., n. Mich., Colo., Alta. Ecology: One of the paratypes can be presumed to have been reared from a parasite of a tenthredinid.
Mesochorus maleficus Dasch, 1971. Amer. Ent. Inst., Mem. 16: 149. ♀.
- marylandicus* Dasch. Md., n. Va., n. Ala.
Mesochorus marylandicus Dasch, 1971. Amer. Ent. Inst., Mem. 16: 89. ♂, ♀.
- masoni* Dasch. Newfoundland (insular), w. to s. coastal Alaska, s. to Maine, Ont., n. Minn., Colo., and Oreg. Ecology: Reared or presumed to have been reared from parasites of the following-- *Pikonema alaskensis* (Roh.), *P. dimmockii* (Cr.), *Neodiprion* sp., *N. abietis* (Harris), *N. pratti banksianae* Roh., *N. pratti pratti* (Dyar), *N. tsugae* Midd., *N. virginiana* Roh. Host: *Lamachus angularius* (Davis).
Mesochorus masoni Dasch, 1971. Amer. Ent. Inst., Mem. 16: 120. ♂, ♀.
- melleus* Cresson. R. I., N. Y., Pa., n.w. S. C., Ohio.
Mesochorus melleus Cresson, 1872. Canad. Ent. 4: 24. ♂.

- moabae** Dasch. Southeastern Utah. Ecology: The only two specimens known were collected at an elevation of 9200 ft.
Mesochorus moabae Dasch, 1971. Amer. Ent. Inst., Mem. 16: 147. ♀.
- naknekensis** Dasch. Northern Que. w. to w. N. W. T. and Alaska, s. to N. H., Colo., and n.e. Calif. Ecology: One of the paratypes should be presumed to have been reared from a parasite of *Spargania magnoliata* Gn. (Geometridae).
Mesochorus naknekensis Dasch, 1971. Amer. Ent. Inst., Mem. 16: 63, 177. ♂, ♀. The misspelling "*naknakensis*" appeared on p. 63.
- nigripes** Ratzeburg. Western Colo. The overwhelming evidence is that this species was unintentionally introduced along with *Bathyplectes stenostigma* (Thomson) in 1969. Host: *Bathyplectes curculionis* (Thom.), *B. stenostigma* (Thom.). The fact that only females of *M. nigripes* are known from Colo. suggest the possibility that two morphologically similar species may be confused under the name *nigripes* in Europe.
Mesochorus nigripes Ratzeburg, 1852. Ichn. d. Forstins., v. 3, p. 119. ♂.
Mesochorus gibbulus Holmgren, 1856 (1854). Svenska Vetensk.-Akad. Hand. 75: 60. ♀.
- noctivagus** Viereck. Northwestern S. C., e. Kans.
Mesochorus noctivagus Viereck, 1905. Kans. Acad. Sci., Trans. 19: 303. ♀.
- obliteratus** Dasch. Pa., Mich., n. Man., e. Wash. Host: *Grisdalemyia* sp. ex *Chrysomela* sp.
Mesochrus obliteratus Dasch, 1971. Amer. Ent. Inst., Mem. 16: 206. ♂, ♀.
- obsoletus** Dasch. Western B. C.
Mesochorus obsoletus Dasch, 1971. Amer. Ent. Inst., Mem. 16: 241. ♂.
- ontariensis** Dasch. Md., Ont., Mich.
Mesochorus ontariensis Dasch, 1971. Amer. Ent. Inst., Mem. 16: 80. ♂, ♀.
- ottawaensis** (Harrington). N. S. w. to n. Alta. and Oreg., s. to N. H., n. Mich., e. N. Dak., Colo., and n. Utah.
Ischyrocnemis ottawaensis Harrington, 1892. Canad. Ent. 24: 98. ♀.
- parallelus** Dasch. Western Va.
Mesochorus parallelus Dasch, 1971. Amer. Ent. Inst., Mem. 16: 82. ♀.
- parvus** Dasch. Maine, N. H., Mass., N. Y., s.e. Fla., Ont., n. Mich. Ecology: Two of the paratypes can be presumed to have been reared from parasites of *Bucculatrix canadensisella* Chamb. and *Heterarthrus nemoratus* (Fall.).
Mesochorus parvus Dasch, 1971. Amer. Ent. Inst., Mem. 16: 248. ♂, ♀.
- paulus** Dasch. N. Y. Known only from the holotype.
Mesochorus paulus Dasch, 1971. Amer. Ent. Inst., Mem. 16: 250. ♂.
- peltatus** Dasch. Western Mich., Alta., interior Alaska, s.w. B. C., Wash.
Mesochorus peltatus Dasch, 1971. Amer. Ent. Inst., Mem. 16: 104. ♂, ♀.
- perniciosus** Viereck. Southwestern Ont. s. to Iowa and Kans., w. to Alta., w. Mont., e. Idaho, n.e. Utah, and N. Mex. Ecology: Reared from parasites of *Loxostege sticticalis* (L.) and *Cyclophora serrulata* (Pack.). Host: *Apanteles laeviceps* Ash., *Cremnops vulgaris* (Cr.).
Mesochorus perniciosus Viereck, 1911. U. S. Natl. Mus., Proc. 39: 407. ♀.
- personatus** Dasch. Que., n. Ont., Alta., and s. B. C., s. to Maine, Mich., and Oreg. Ecology: One of the paratypes can be presumed to have been reared from a parasite of *Eupithecia luteata* Pack.
Mesochorus personatus Dasch, 1971. Amer. Ent. Inst., Mem. 16: 166. ♂, ♀.
- pictilis** Holmgren. N. S. w. to s. B. C., s. to n.w. S. C., e. Ill., Idaho, and s.w. Oreg. Ecology: Can be presumed to have been reared from parasites of the following-- Geometridae (*Aethalura anticaria* [Wlk.], *Biston betularia cognataria* [Gn.], *Campaea perlata* [Gn.], *Deilinea* sp., *Ectropis crepuscularia* [D. and S.], *Iridopsis emasculata* [Dyar], *Semiothisa "granitata"* auct.), Noctuidae (*Bomolocha albalienalis* [Wlk.], *Lithophane* sp.) and Pyralidae (*Promylea lunigerella* Rag.).
Mesochorus pictilis Holmgren, 1860 (1858). Svenska Vetensk.-Akad. Handl. (n. f.) 2 (8): 131. ♂, ♀.
- platygorytos** Dasch. Que. Ecology: The unique holotype should be presumed to have been reared from a parasite of *Psilocorsis* sp.
Mesochorus platygorytos Dasch, 1971. Amer. Ent. Inst., Mem. 16: 86. ♀.

- plumosus** Dasch. N. Y., Ont., Ohio, Mich., Colo., Idaho, e. Wash. Ecology: Oviposits into adult Chrysomelidae (*Phyllotreta armoraciae* [Koch], *P. striolata* [F.]) which have been parasitized by euphorine Braconidae. Host: *Microctonus vittatae* Mues. The paratype of *Mesochorus plumosus* from D. C. was reared together with seven paratypes of *Microctonus vittatae* Mues.
- Mesochorus plumosus* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 246. ♂, ♀.
- prolatus** Dasch. Que., w. N. W. T., Alta., interior Alaska, w. B. C.
- Mesochorus prolatus* Dasch, 1971. Amer. ent. Inst., Mem. 16: 180. ♂, ♀.
- punctifrons** Dasch. Western N. C., Ohio, s. Ill., s. B. C. Ecology: The holotype was collected at an elevation between 4800 ft. and 5300ft. on Mt. Pisgah, N. C. Host: *Leiophron* sp. ex *Plagiognathus* sp. on *Solidago*.
- Mesochorus punctifrons* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 212. ♂, ♀.
- recurvatus** Dasch. Southwestern B. C. Known only from the holotype.
- Mesochorus recurvatus* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 172. ♀.
- restrictus** Dasch. Que., s.e. Ont., n.e. Alta., s.e. Utah, s. B. C., n. Calif.
- Mesochorus restrictus* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 113. ♂, ♀.
- sabulosus** Dasch. Southern Colo., Utah. Ecology: The holotype was collected at Great Sand Dunes, Alamosa Co., Colo.
- Mesochorus sabulosus* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 129. ♂, ♀.
- scabrosus** Dasch. Northeastern Pa. Known only from the holotype.
- Mesochorus scabrosus* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 209. ♀.
- solidus** Dasch. R. I., s.w. Mich., Colo., s. B. C.
- Mesochorus solidus* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 220. ♂, ♀.
- spinosus** Dasch. Ariz.
- Mesochorus spinosus* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 75. ♂.
- sulcatus** Dasch. Western Va. Ecology: The only three specimens known were collected at Mountain Lake, Va.
- Mesochorus sulcatus* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 74. ♀.
- sylvarum** Curtis. Newfoundland (n. Labrador) w. to n. Yukon and Alaska, s. to n.w. S. C., Mo., Colo., and n. Calif.; n. Eurasia; n. Mexico. Ecology: Reared or presumed to have been reared from parasites of the following-- Tortricidae (*Acleris chalybeana* [Fern.], *A. variana* [Fern.], *Archips* sp., *Choristoneura conflictana* [Wlk.], *C. fumiferana* [Clem.], *C. rosaceana* [Harris], *Sparganothis pettitana* [Rob.]), Olethreutidae (*Epinotia* sp., *E. solandriana* [L.], *Grapholitha molesta* [Bsk.], *Pseudexentera* sp., *Zeiraphera* sp., *Z. canadensis* M. and F.), Gelechiidae (*Anacampsis inocuella* [Zell.], *A. niveopulvella* [Chamb.]), Noctuidae (*Feralia* sp.), and Notodontidae (*Cerura borealis* [Bdv.]). Host: *Meteorus* sp.?, *Microgaster peroneae* Wly., *Enytus eureka* Ash., *Glypta fumiferanae* (Vier.), *G. inversa* Cr., *Actia diffidens* Curran.
- Mesochorus sylvarum* Curtis, 1833. Brit. Ent., v. 10, pl. 464. ♀.
- Mesochorus atriventris* Cresson, 1872. Canad. Ent. 4: 21. ♂.
- Mesochorus politus* Provancher, 1883. Nat. Canad. 14: 4. ♀. Preocc. by Gravenhorst, 1829.
- Mesochorus provancheri* Dalla Torre, 1901. Cat. Hym., v. 3, p. 57. N. name for *politus* Provancher.
- Mesochorus silvarum* Dalla Torre, 1901. Cat. Hym., v. 3, p. 57. Emendation.
- tachinae** Ashmead. N. S. w. to B. C., s. to e. N. C., n. Ga., Ill., Colo., and n. Calif. Ecology: Reared or presumed to have been reared from parasites of the following-- Geometridae (*Aethalura anticaria* [Wlk.], *Caripeta divisata* Wlk., *Cladara limitaria* [Wlk.], *C. nigroangulata* [Stkr.], *Cyclophora pendulinaria* [Gn.], *Deileina* sp., *Ectropis crepuscularia* [D. and S.], *Enypia packardata* Tay.?, *Erannia tiliaria* [Harris], *Eupithecia* sp., *E. luteata bifasciata* [Dyar], *E. transcanadata* MacKay, *Hydriomena renunciata columbiata* Tay., *Hyperetis amicaria* [H.-S.], *Iridopsis emasculata* [Dyar]?, *Lambdina fiscellaria lugubrosa* [Hulst], *Nematocampa filamentaria* Gn., *Nepytia phantasmaria* [Stkr.], *Semiothisa* sp., S. "granitata" auct.), Noctuidae (*Feralia* sp., *F. jocosus* [Gn.], *Hypona humuli* [Harris], *Zale minerea norda* [Smith]), Dioptriidae (*Phryganidea* sp.), Tortricidae (*Acleris variana* [Fern.] and tortricid), and Oecophoridae

- (*Psilocorsis* sp.). Host: *Actia interrupta* Curran, *Chaetophlepsis orbitalis* Web., *C. semiothisae* Brooks, *Icteriphyto tibialis* (Curran), tachinids, dipterous parasites.
- Mesochorus tachinae* Ashmead, 1898. In Dimmock and Ashmead, Ent. Soc. Wash., Proc. 4: 168. ♀.
- tachypus** Holmgren. Newfoundland (Labrador), w. N. W. T., and Alaska, s. to P. E. I., s. Que., Ont., N. Mex., and n.w. Calif.; Europe. Ecology: Reared or presumed to have been reared from parasites of the following-- Olethreutidae (*Epinotia solandriana* [L.], *Pseuderentera improba* oregonana [Wlk.], *Zeiraphera* sp.), Tortricidae (*Acleris variana* [Fern.], *Choristoneura occidentalis* Free.), Gelechiidae (*Anacamptis niveopulvella* [Cham.], *Coleotechnites starki* [Free.]), Geometridae (*Alsophila pometaria* [Harris], *Operophtera* sp.), Lasiocampidae (*Malacosoma disstria* Hbn.), and sp. of Noctuidae. Host: *Apanteles fumiferanae* Vier., *Microgaster peroneae* Wly.
- Mesochorus tachypus* Holmgren, 1860 (1858). Svenska Vetensk.-Akad. Handl. (n. f.) 2 (8): 130. ♂, ♀.
- Mesochorus diversicolor* Viereck, 1912. U. S. Natl. Mus., Proc. 42: 149. ♂, ♀.
- tantillus** Dasch. N. B., n. and s. Que., N. H., Ont., n. Mich., Sask., s.e. B. C. Ecology: Paratypes should be presumed to have been reared from parasites of the following-- Tenthredinidae (*Anoplonyx luteipes* [Cr.]) and Geometridae (*Semiothisa dispuncta* [Wlk.], *S. "granitata"* auct.).
- Mesochorus tantillus* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 164. ♂, ♀.
- tononacus** Cresson. Ohio, s. Mich., n.e. Kans.; n. and s. Mexico. The type locality is in southern Mexico.
- Mesochorus tononacus* Cresson, 1872. Canad. Ent. 4: 23. "♀" = ♂.
- Mesochorus tononacus* Cresson, 1874 (1873). Acad. Nat. Sci., Proc. 25: 388. "♀" = ♂. The holotype is the same specimen as that of *tononacus*.
- transversus** Dasch. Northern Que., N. H.
- Mesochorus transversus* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 269. ♂.
- tumidifrons** Dasch. Northern Va., n.e. Kans. Ecology: The single paratype can be presumed to have been reared from a parasite of a sawfly larva.
- Mesochorus tumidifrons* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 214. ♀.
- tundracolus** Dasch. Southwestern Alaska. Ecology: The three specimens known were collected on tundra at Naknek, Alaska.
- Mesochorus tundracolus* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 179. ♂, ♀.
- ukiahensis** Dasch. Northwestern Calif. Known only from the holotype.
- Mesochorus ukiahensis* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 227. ♀.
- unicarinatus** Dasch. Que. w. to n. Yukon, s. to Md., n. Ga., Tex., and n.w. Oreg. Host: *Chaetophlepsis orbitalis* Web. ex *Lambdina fiscellaria lugubrosa* (Hulst).
- Mesochorus uncarinatus* Dasch, 1971. Amer. Ent. Inst., Mem. 16: 87. ♂, ♀.
- uniformis** Cresson. N. S. w. to w. Yukon, s. to Ga., Tex., s. N. Mex., s. Ariz., and s. Calif.; Mexico. Ecology: Reared or presumed to have been reared from parasites of the following-- Sphingidae (*Ceratonia amyntor* [Geyer]), Lymantriidae *Lymantria dispar* [L.], *Orgyia* sp., *O. psedotsugata* [McD.], Noctuidae (*Xylomyges perlubens* Grt.), Geometridae (*Caripeta* sp., *C. angustiroata* Wlk., *C. divisata* Wlk., *Ectropis crepuscularia* [D. and S.], *Eufidonia notataria* [Wlk.], *Eupithecia annulata* [Hulst], *Glena nigricaria* [B. and McD.], *Lambdina fiscellaria lugubrosa* [Hulst], *Melanophia imitata* [Wlk.], *Semiothisa* sp., *S. sp.* on *Larix*, *S. dispuncta* [Wlk.], *S. oweni* [Swett], *S. setonana* [McD.], *sexmaculata* [Pack.], *Stenoporpia* sp.), Tortricidae (*Acleris variana* [Fern.], *Choristoneura fumiferana* [Clem.]), Oecophoridae (*Semioscopis inornata* Wlsh., and Dipteronidae (*Neodiprion abietis* [Harris], *N. pinetum* [Nort.]). Host: *Casinarina limenitidis* (How.), *Phobocampe pallipes* (Prov.), *P. uncinata* (Grav.), *Apanteles melanoscelus* (Ratz.).
- Mesochorus uniformis* Cresson, 1872. Amer. Ent. Soc., Trans. 4: 171. "♀" = ♀ and misdet. ♂.
- Paniscus rufulus* Provancher, 1876. Nat. Canad. 8: 328. ♀.
- Astiphromma mexicanus* Ashmead, 1894. Calif. Acad. Sci., Proc. 4: 129. ♀.

validus Dasch. Mass. and s.e. Alta., s. to e. N. C., n.w. S. C., n. La., Okla., s. Ariz. and central Calif.

Mesochorus validus Dasch, 1971. Amer. Ent. Inst., Mem. 16: 130. ♂, ♀.

varianus Dasch. Newfoundland (insular) w. to central Alta. and s.w. B. C., s. to n.w. S. C., s. Wis., Minn., and n.w. Oreg. Host: *Lamachus angularius* (Davis).

Mesochorus varianus Dasch, 1971. Amer. Ent. Inst., Mem. 16: 150. ♂, ♀.

vittator (Zetterstedt). Newfoundland (Labrador) w. to n.w. Alaska, s. to Ala., w. Tex., Ariz., and s. Calif.; Eurasia; Mexico, Costa Rica. Ecology: Reared or presumed to have been reared from parasites of two species of Tenthredinidae and many species of Lepidoptera (too numerous to list) of diverse habits. Host: *Diadegma insulare* (Cr.), *Dimophora* sp., "*Hyposoter annulipes* (Cresson)" ex *Lambdina fiscellaria lugubrosa* (Hulst.) and *Nepytia umbrosaria nigrovenaria* (Pack.), *Phobocampe* n. sp., *P. flavipes* (Prov.), *Apanteles glomeratus* (L.)?, *A. medicaginis* Mues., *Microgaster peroneae* Wly. *M. vittator* is apparently by far the most frequently collected species of *Mesochorus* in North America.

Tryphon vittator Zetterstedt, 1838. Ins. Lapponica Descr., Hym., p. 387. ♀.

Mesochorus brunneus Brischke, 1880. Naturf. Gesell. Danzig, Schr. (n. f.) 4: 184. ♂.

Campoplex pieridicola Packard, 1881. Boston Soc. Nat. Hist., Proc. 21: 20. "♀" = ♂.

yosemite Dasch. Colo., s. Idaho, n.e. Calif.

Mesochorus yosemite Dasch, 1971. Amer. Ent. Inst., Mem. 16: 196. ♀.

Genus STICTOPISTHUS Thomson

Stictopisthus Thomson, 1886. Soc. Ent. de France, Ann. (6) 5: 327, 344.

Type-species: *Stictopisthus bilineatus* Thomson. Desig. by Viereck, 1914.

This is a moderate sized genus of worldwide distribution.

argaleus Dasch. Que., s. Sask., and w. Yukon, s. to Md., w. N. C., and n.w. Ark. Ecology: Should be presumed as having been reared from parasites of the following-- Tortricidae (*Archips argyrospilus* [Wlk.], *Choristoneura pinus* Free., *C. rosaceana* [Harris], and a "tortricid sp."), Pyralidae (*Desmia funeralis* [Hbn.], *Nephoteryx subcaesiella* [Clem.]), Yponomeutidae (*Zelleria haimbachi* Bsk.), Gracilariidae (*Lithocolletis robiniella* Clem.), and a leaf miner on *Robinia pseudoacacia*. The paratypes in the U. S. Natl. Museum collection show considerably more variation than is allowed for in either Dasch's key to *Stictopisthus* females or in his description of *argaleus* (the key and description also disagree with each other in respect to the dimensions of the ovipositor sheath), and two species may be confused under the name *argaleus*.

Stictopisthus argaleus Dasch, 1971. Amer. Ent. Inst., Mem. 16: 277. ♂, ♀.

artus Dasch. N. Y., s. Ind., w. Mont.

Stictopisthus artus Dasch, 1971. Amer. Ent. Inst., Mem. 16: 283. ♂, ♀.

bilineatus Thomson. Southern Sask. s. to w. Tex., w. to s. Alta., Wash., and s. Calif.; s. Mexico; Europe. Ecology: Can be presumed to have been reared from parasites of the following microlepidoptera-- *Scythris* sp. and *Plutella xylostella* (L.).

Stictopisthus bilineatus Thomson, 1886. Soc. Ent. de France, Ann. (6) 5: 344. [male, female].

crenatus Dasch. Newfoundland (Labrador), w. N. W. T., and s.w. Alaska, s. to N. J., Mich. and n. Idaho. Ecology: Can be presumed to have been reared from parasites of the following microlepidoptera-- *Gracilaria burgessiella* Zell., *Lithocolletis* sp., *Acleris* sp., and *Choristoneura pinus* Free.

Stictopisthus crenatus Dasch, 1971. Amer. Ent. Inst., Mem. 16: 281. ♂, ♀.

electilis (Cresson). Eastern N. C., n.w. S. C., Kans., Okla., Tex., s.e. Ariz.; Mexico.

Mesochorus electilis Cresson, 1872. Amer. Ent. Soc., Trans. 4: 171. ♀.

exilis Dasch. Central Utah. Known only from the holotype.

Stictopisthus exilis Dasch, 1971. Amer. Ent. Inst., Mem. 16: 287. ♂.

flaviceps (Provancher). Que. w. to w. N. W. T., s. to Md., n.w. S. C., Mo., Colo., and n. Calif.

Ecology: Can be presumed to have been reared from parasites of the following-- Tortricidae (*Archips argyrospilus* [Wlk.], *Choristoneura fumiferana* [Clem.], *C. pinus*

Free.), *Olethreutidae* (*Ancylys comptana* [Froel.]), and *Yponomeutidae* (*Zelleria haimbachi* Bsk.).

Mesochorus flaviceps Provancher, 1879. Nat. Canad. 11: 210. ♀.

floridanus Dasch. Northern Fla. Ecology: The single paratype can be presumed to have been reared from a parasite of the "spotted leaf tyer on oak."

Stictopisthus floridanus Dasch, 1971. Amer. Ent. Inst., Mem. 16: 288. ♂, ♀.

lanceolatus Dasch. N. B. w. to central Alta. and s. B. C., s. to Pa., Ohio, and Wis. Ecology: Can be presumed to have been reared from parasites of the following microlepidoptera--*Choristoneura fumiferana* (Clem.), *Sparganothis pettitana* (Rob.), *Anacamptis niveopulvella* (Cham.).

Stictopisthus lanceolatus Dasch, 1971. Amer. Ent. Inst., Mem. 16: 279. ♂, ♀.

SUBFAMILY DIPLAZONTINAE

The members of this medium sized subfamily are internal parasites of Diptera larvae. The eggs are deposited in the early-instar larvae or eggs of the host, and the adults emerge from the host puparia. The usual hosts are aphidophagous Syrphidae, although phytophagous Syrphidae and even Diptera of other families are sometimes parasitized.

Revision: Davis, 1895. Amer. Ent. Soc., Trans. 22: 25-27. — Dasch, 1964. Amer. Ent. Inst., Mem. 3: 1-304 (Nearctic spp.). — Dasch, 1964. Amer. Ent. Inst., Contrib. 1 (1): 1-77 (Neotropic spp.).

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 216-232 (genera of world).

Genus SYRPHOCTONUS Foerster

Syrphoctonus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 15: 162.

Type-species: *Bassus exsultans* Gravenhorst. By subsequent monotypy from inclusion by Woldstedt, 1877.

Homotropus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 162.

Type-species: *Bassus elegans* Gravenhorst. Desig. by Walkley, 1958 from 29 species included by Thomson, 1890. Walkley (1958) considered the type-species as having been designated by Viereck (1914) when the latter author designated *B. elegans* as the type-species of *Homocidus* Morley (Viereck's [1914] designation of *B. bicapillaris* Walsh as the type-species of *Homotropus* has no validity because *B. bicapillaris* was not placed in *Homotropus* until 1895). The fact that *Homocidus* (which see) has no standing in nomenclature (and therefore has no type-species), prevents Viereck's (1912) designation of *B. elegans* as the "type-species" of *Homocidus* from being the valid designation for *Homotropus* by isogeneitytypy.

Homoporus(!) Thomson, 1890. Opusc. Ent. 14: 1488. There is no doubt that *Homoporus* is a lapsus for *Homotropus* because Thomson used the name *Homotropus* in his conspectus generum on page 1465 of the same paper. Twelve years earlier Thomson had given the name *Homoporus* to a genus of Chalcidoidea, which makes it easy to explain how he could have made the error of introducing the name *Homoporus* in his manuscript which dealt with *Homotropus*.

Homocidus Morley, 1911. Brit. Ichn., v. 4, p. 87. N. name for *Homoporus* Thomson, 1890.

This large Neotropic, Holarctic, Oriental and Ethiopian genus was called *Homotropus* in the most recent works on Diplazontinae. Suppression of *Homotropus* as a synonym of *Syrphoctonus* is necessitated by the first revisor decision of Benoit (1955) and by the following facts. Viereck (1914) designated *Bassus biguttatus* Gravenhorst as the type-species of *Syrphoctonus*, believing that this species was eligible for designation by virtue of Woldstedt's (1877b) placement of it in *Syrphoctonus* along with three other species, including *B. exsultans* Gravenhorst. However, Woldstedt (1877a) had monotypically included *B. exsultans*, which makes it the type-species of *Syrphoctonus*. *Syrphoctonus* of recent authors is herein called *Woldstedtinus* (which see).

Taxonomy: Woldstedt, 1877a (1876). Acad. Imp. des Sci. St. Petersburg, Bul. 22: 391.

— Woldstedt, 1877b. Acad. Imp. des Sci. St. Petersburg, Bul. 23: 441. — Viereck, 1912. Ent.

Soc. Wash., Proc. 14: 175. — Viereck, 1914. U. S. Natl. Mus., Bul. 83: 72, 142.

- alaskensis** (Ashmead). Que., s. Maine, s.e. Yukon, Alaska. Males are unknown.
Homotropus alaskensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 226. ♀.
- albopictus** (Davis). Northern Que. w. to n. Yukon and Alaska, s. to n. Va., w. N. C., Minn., n. N. Mex., and n. Calif. The two "subspecies" recognized by Dasch (1964) had broadly overlapping ranges.
Homotropus bicapillaris var. *albopictus* Davis, 1895. Amer. Ent. Soc., Trans. 22: 28. ♀.
Homotropus albopictus ithacae Dasch, 1964. Amer. Ent. Inst., Mem. 3: 103. ♂, ♀. N. syn.
- aquilonius** (Dasch), n. comb. Greenland.
Homotropus aquilonius Dasch, 1964. Amer. Ent. Inst., Mem. 3: 135. ♀.
- arizonensis** (Dasch), n. comb. Northern Colo., Ariz., e. Calif. Ecology: Occurs at higher altitudes.
Homotropus arizonensis Dasch, 1964. Amer. Ent. Inst., Mem. 3: 114. ♂, ♀.
- badius** (Dasch), n. comb. Central Calif.
Homotropus badius Dasch, 1964. Amer. Ent. Inst., Mem. 3: 170. ♂, ♀.
- belangerii** (Provancher). Que. s. to Md. and. w. N. C., w. to Wis. and n. Ill. Host: Syrphid.
Bassus Belangerii Provancher, 1874. Nat. Canad. 6 (1): 31 (key); 6 (2): 56. ♀.
- columbiensis** (Dasch), n. comb. Southwestern Alta. and B. C. s. to Colo., Utah, and n. Calif. Host: Syrphid.
Homotropus columbiensis Dasch, 1964. Amer. Ent. Inst., Mem. 3: 123. ♂, ♀.
- compactus** (Dasch), n. comb. Northwestern Mich., Colo., w. N. W. T., w. Wash., s.w. Oreg.
Homotropus compactus Dasch, 1964. Amer. Ent. Inst., Mem. 3: 119. ♂, ♀.
- confertus** (Dasch), n. comb. Que., n. N. Mex., w. B. C.
Homotropus confertus Dasch, 1964. Amer. Ent. Inst., Mem. 3: 142. ♂, ♀.
- costalis** (Provancher), n. comb. Que. This name is transferred from synonymy with *Promethes sulcator* (Gravenhorst) because there appear to be no valid grounds for rejecting the lectotype of Gahan and Rohwer (1917) as Townes (1939) and Barron (1975) have done. Because Provancher stated that he had two specimens, lack of agreement with the original description alone is not proof that the Gahan and Rohwer lectotype was not an original syntype.
Bassus costalis Provancher, 1874. Nat. Canad. 6 (1): 31 (key); 6 (2): 58. ♀.
- Taxonomy: Gahan and Rohwer, 1917. Canad. Ent. 49: 332. —Townes, 1939. Canad. Ent. 71: 93. —Barron, 1975. Nat. Canad. 102: 455.
- cressonii** Davis. Nev. Known only from the holotype.
Syrphoctonus cressonii Davis, 1895. Amer. Ent. Soc., Trans. 22: 27. ♀.
- cultiformis** (Davis). Colo., Alaska.
Otoblastus cultiformis Davis, 1897. Amer. Ent. Soc., Trans. 24: 273. ♀.
Otoblastus cultriformis(!) Dalla Torre, 1901. Cat. Hym., v. 3, p. 311.
Homotropus cultriformis Dasch, 1964. Amer. Ent. Inst., Mem. 3: 179. Unjustified emend.
- decoratus** (Cresson). Colo., n. Utah, s.e. Ariz., s. B. C., Wash., Oreg., Calif.; n.w. Mexico. Host: Syrphid spp.
Bassus decoratus Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 375. ♂.
- elegans** (Gravenhorst). Que., e. N. W. T., Ont.; Europe.
Bassus elegans Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 313. ♂.
Bassus rufonotatus Holmgren, 1858 (1856). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 369. ♂, ♀.
- fossatus** (Dasch), n. comb. Newfoundland (Labrador) w. to n. Yukon and Alaska, s. to Mass., n. Mich., n. Colo., and n.w. Oreg. The ranges of the two "subspecies" described by Dasch (1964) were largely overlapping.
Homotropus fossatus fossatus Dasch, 1964. Amer. Ent. Inst., Mem. 3: 159. ♂, ♀.
Homotropus fossatus aureopectus Dasch, 1964. Amer. Ent. Inst., Mem. 3: 160. ♂, ♀. N. syn.
- fraudulentus fraudulentus** (Dasch), n. comb. Colo., s. Alta., n. Idaho, interior Alaska, s. Yukon, s. B. C.
Homotropus fraudulentus fraudulentus Dasch, 1964. Amer. Ent. Inst., Mem. 3: 151. ♂, ♀.

- fraudulentus recurvatus** (Dasch), n. comb. Northwestern Wash., n.e. Calif.
Homotropus fraudulentus recurvatus Dasch, 1964. Amer. Ent. Inst., Mem. 3: 152. ♂, ♀.
- imperfectus** (Dasch), n. comb. Newfoundland (Labrador), n.w. Mich., s. B. C., Wash., n.w. Oreg.
 Host: Syrphid.
Homotropus imperfectus Dasch, 1964. Amer. Ent. Inst., Mem. 3: 155. ♂, ♀.
- labradorensis** (Dasch), n. comb. Newfoundland (n. Labrador), Colo., s.w. Alta.
Homotropus labradorensis Dasch, 1964. Amer. Ent. Inst., Mem. 3: 136. ♂, ♀.
- laevis** Brues. Maine w. to interior Alaska, s. to S. C., s. Ill., N. Mex., and Wash. Host: Syrphid on *Populus*.
Syrphoctonus laevis Brues, 1908. Wis. Nat. Hist. Soc., Bul. 6: 53. ♀.
- maculifrons** (Cresson). Minn. w. to central Alta. and s. B. C., s. to n.w. Iowa, n. N. Mex., n. Ariz., and s. Calif.; n.w. Mexico; Hawaii. Host: *Eupeodes volucris* O. S., *Metasyrphus perplexus* (Osb.), *Scaeva pyrastris* (L.).
Bassus maculifrons Cresson, 1865. Ent. Soc. Phila., Proc. 4: 272. ♀.
Bassus semifasciatus Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 87. ♂. This synonymy is dubious because the lost type of *B. semifasciatus* is thought to have been collected in Ill.
- melanogaster** (Holmgren). Northern Que., N. W. T., interior Alaska, w. Wash.; Greenland.
Bassus melanogaster Holmgren, 1872. Svenska Vetensk.-Akad., Ofvers. af ... Forh. 29 (6): 98. ♂.
- minimus** (Cresson). Que. s. to n. Fla., w. to Minn., e. Kans., and Ark.
Tryphon minimus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 281. ♀.
Bassus ruficrus Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 86. "♂" = ♀.
- nigriclypealis** (Dasch), n. comb. Southern Que., s.w. Alta.; Greenland.
Homotropus nigriclypealis Dasch, 1964. Amer. Ent. Inst., Mem. 3: 110. ♀.
- nigritarsus fuscitarsus** (Provancher). Newfoundland (insular) w. to n. Yukon and Alaska, s. to N. Y., s. Man., N. Mex., and s. Calif.; Mexico. Host: *Eupeodes volucris* O. S. S.
nigritarsus nigritarsus (Gravenhorst) is Eurasian.
Tryphon humeralis Provancher, 1875. Nat. Canad. 7 (4): 117. "♀" = ♂. Preocc. by Gravenhorst, 1829.
Bassus fuscitarsus Provancher, 1875. Nat. Canad. 7 (5): 143. "♂" = ♀.
- nigritarsus groenlandicus** (Holmgren). Greenland.
Bassus groenlandicus Holmgren, 1872. Svenska Vetensk.-Akad., Ofvers. af ... Forh. 29 (2): 97. ♂.
- novitus** (Dasch), n. comb. Interior Alaska. Known only from the holotype.
Homotropus novitus Dasch, 1964. Amer. Ent. Inst., Mem. 3: 130. ♂.
- nudus** (Dasch), n. comb. Northern Que. w. to interior Alaska, s. to s. Mich., Colo., and n.e. Calif.
Homotropus nudus Dasch, 1964. Amer. Ent. Inst., Mem. 3: 111. ♂, ♀.
- pacificus** (Cresson). Western N. W. T. and Alaska s. to w. S. Dak., N. Mex., and s. Calif.; n. Mexico. Host: *Bigonicheta* sp.
Bassus maculifrons Holmgren, 1869 (1868). Eug. Resa I, Zool. I, Ins., p. 410. ♀. Preocc. by Cresson, 1865.
Bassus pacificus Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 376. ♂, ♀.
Bassus xanthops Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 440. ♂.
- pallipes** (Gravenhorst). N. S. w. to Alaska, s. to Pa., n.w. S. C., n. Minn., Colo., and s. Calif.; Europe.
Bassus pallipes Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 325. "♂" = ♀.
Bassus pallipennis Provancher, 1874. Nat. Canad. 6: 31. ♀.
Bassus pallidipes (!) Bignell, 1898. Devonshire Assoc., Trans. 30: 500. Lapsus for *B. pallipes* Gravenhorst.
Homotropus pallipennis Dalla Torre, 1901. Cat. Hym., v. 3, p. 238. Emend. of *B. pallipennis* Provancher.
Homotropus pallidipes Dalla Torre, 1901. Cat. Hym., v. 3, p. 238. Emend. of *B. pallipes* Gravenhorst.
- pectoralis** (Provancher). Que. w. to s. Yukon and interior Alaska, s. to n. Va., s. Wis., and Colo.
Bassus pectoralis Provancher, 1874. Nat. Canad. 6: 32. ♂.

- pleuralis pleuralis** (Cresson). N. H. s. to n.w. S. C., w. to Mich., e. Iowa, Ark., and s. Tex. Host: Syrphid predator of grape aphid.
Bassus pleuralis Cresson, 1868. Amer. Ent. Soc., Trans. 2: 111. ♀.
- pleuralis syrphicola** (Ashmead). Southern Alta. and s. B. C. s. to n. Colo., n. Utah, n.e. Nev., and central Calif. Host: *Metasyrphus perlexus* (Osb.), *Scaeva pyrastris* (L.).
Bassus syrphicola Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 439. ♂, ♀.
- quadrangularis** (Dasch), n. comb. Eastern Mass., n.e. N. J., Colo., s. Alta., n. Idaho, n. Yukon, interior Alaska, B. C.
Homotropus quadrangularis Dasch, 1964. Amer. Ent. Inst., Mem. 3: 106. ♂, ♀.
- robsonensis** (Dasch), n. comb. Southeastern B. C. Known only from two specimens.
Homotropus robsonensis Dasch, 1964. Amer. Ent. Inst., Mem. 3: 183. ♂, ♀.
- robustus** Davis. Southeastern Mich., s. Alta., s. B. C., Wash.
Syrphoctonus robustus Davis, 1895. Amer. Ent. Soc., Trans. 22: 25. ♂.
- rufulus** (Dasch), n. comb. Southern Maine w. to s.w. Ont. and interior Alaska, s. to n.w. S. C. and n. Ill. Dasch (1964) stated that one of the paratypes was from "Louisiana (no locality)"; his dissertation (Dasch, 1953) indicated that the specimen was a male from the C. F. Baker collection and was in the U. S. Natl. Museum collection. I find no paratype from La. in that collection and therefore cannot verify from the Baker notebook that it was really collected in La. (in rare cases the notebook data pertaining to a particular "Baker number" do not agree with the locality on the specimen label).
Homotropus rufulus Dasch, 1964. Amer. Ent. Inst., Mem. 3: 104. ♂, ♀.
- Taxonomy: Dasch, 1953. Taxonomic study Nearctic Diplazoninae, Ph. D. Thesis, Cornell Univ., p. 217.
- sicarius** (Dasch), n. comb. Newfoundland (n. Labrador), n. Que., N. W. T., interior Alaska. Host: Simuliid.
Homotropus sicarius Dasch, 1964. Amer. Ent. Inst., Mem. 3: 161. ♂, ♀.
- signatus** (Gravenhorst). Newfoundland (insular) and n. Que. w. to N. Alaska, s. to N. J., s. Ohio, n. Iowa, n. Colo., and n.w. Oreg.; Eurasia. Host: *Platycheirus erraticus* Curran, *Sphaerophoria contigua* Macq.
Bassus signatus Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 325. ♀.
Tryphon nigricornis Zetterstedt, 1838. Insecta Lapponica, Hym., p. 399. ♀.
Tryphon compressiventris Cresson, 1868. Amer. Ent. Soc., Trans. 2: 105. ♂, ♀.
Homotropus hygrobius Thomson, 1890. Opusc. Ent. 14: 1524. ♂, ♀.
Zootrepes montanus Davis, 1895. Amer. Ent. Soc., Trans. 22: 24. ♂, ♀.
- tarsatorius** (Panzer). Northern Que. w. to Alaska, s. to N. Y., n. Mich., Colo., and s.w. Oreg.; Eurasia. Host: Syrphid spp.
Bassus tarsatorius Panzer, 1809 (1806-1809). Faunae Ins. German., Heft 102, pl. 19 [female].
Bassus exsultans Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 328. ♂.
Bassus insignis Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 349. ♀.
Bassus flavus Desvignes, 1862. Ent. Soc. London, Trans. 10: 219. ♂.
Bassus pulchellus Desvignes, 1862. Ent. Soc. London, Trans. 10: 221. ♂.
Bassus indicus Cameron, 1909. Bombay Nat. Hist. Soc., Jour. 19: 728. ♂.
Homoporus flavitrochanterus Uchida, 1956. Insecta Matsumurana 19: 99. ♂, ♀.
- teres** (Dasch), n. comb. Colo. Ecology: Occurs in the Rocky Mts. at altitudes between 9600 ft. and 12000 ft.
Homotropus teres Dasch, 1964. Amer. Ent. Inst., Mem. 3: 113. ♂, ♀.
- venustus** (Dasch), n. comb. Colo., n. Utah, s. Idaho.
Homotropus venustus Dasch, 1964. Amer. Ent. Inst., Mem. 3: 138. ♂, ♀.
- vitreus** (Dasch), n. comb. Newfoundland (n. Labrador) w. to Alaska, s. to N. S., n. Mich., n.w. Wyo., and n.w. Calif.
Homotropus vitreus Dasch, 1964. Amer. Ent. Inst., Mem. 3: 173. ♂, ♀.

Genus XESTOPELTA Dasch

Xestopelta Dasch, 1964. Amer. Ent. Inst., Mem. 3: 208.

Type-species: *Syrphoctonus vertebratus* Cushman. Orig. design.

This is a very small genus of Holarctic and Ethiopian (one Madagascan sp.) distribution.

vertebrata (Cushman). N. H., Vt., N. W. T., B. C., w. Wash.

Syrphoctonus bilineatus Ashmead, 1900. *In* Slosson, Ent. News 11: 320. Nomen nudum.

Himertosoma quinquenotum Ashmead, 1902. *In* Slosson, Ent. News 13: 320. Nomen nudum.

Syrphoctonus vertebratus Cushman, 1922. U. S. Natl. Mus., Proc. 61 (8): 29. ♂.

Genus ENIZEMUM Foerster

Enizemum Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 162.

Type-species: *Bassus tibialis* Cresson. By subsequent monotypy from inclusion by Davis, 1895.

This is a small Holarctic, Oriental, and Ethiopian genus.

huronense Dasch. Northern Mich. Known only from two specimens.

Enizemum huronense Dasch, 1964. Amer. Ent. Inst., Mem. 3: 199. ♂.

imitatum Dasch. Ariz., n.e. Calif. Known only from two specimens.

Enizemum imitatum Dasch, 1964. Amer. Ent. Inst., Mem. 3: 196. ♂.

insidiosum Dasch. Coastal Calif. The only specimen known was collected at Carmel, Calif.

Enizemum insidiosum Dasch, 1964. Amer. Ent. Inst., Mem. 3: 197. ♀.

matanuskae Dasch. Southern Yukon, Alaska. Known only from the holotype and one paratype.

Enizemum matanuskae Dasch, 1964. Amer. Ent. Inst., Mem. 3: 191. ♀.

ornatum (Gravenhorst). N. S., Sask., Colo., N. Mex., Alta., Alaska, s. Yukon, B. C.; Eurasia.

Host: *Metasyrphus lapponicus* (Zett.).

Bassus deplanatus Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 341. ♂.

Bassus ornatus Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 340. ♂, ♀.

Bassus carinulatus Ruthe, 1859. Stettin. Ent. Ztg. 20: 373. ♂, ♀.

Enizemum neomexicanum Brues, 1908. Wis. Nat. Hist. Soc., Bul. 6: 54. ♀.

petiolatum (Say). N. B. w. to s.e. Alta., s. to e. N. C., s. Ala., n.e. Kans., and s. Colo. Host:

Metasyrphus americanus (Wied.).

Pimpla? petiolatus Say, 1836. Boston Jour. Nat. Hist. 1: 224. ♂.

Bassus tibialis Cresson, 1868. Amer. Ent. Soc., Trans. 2: 110. ♀.

Bassus bicapillaris Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 88. "♂" = ♀.

Pimpla parvialba Viereck, 1906. Amer. Ent. Soc., Trans. 32: 182. "♂" = ♀.

scorteum Dasch. Northern Que., N. W. T., n. Colo., s.e. B. C.

Enizemum scorteum Dasch, 1964. Amer. Ent. Inst., Mem. 3: 194. ♂, ♀.

tridentatum Dasch. Northern Colo., s.w. Alta., interior Alaska.

Enizemum tridentatum Dasch, 1964. Amer. Ent. Inst., Mem. 3: 189. ♂, ♀.

Genus WOLDSTEDTIUS Carlson, n. genus

Syrphoctonus Foerster sensu Dasch, 1964. Amer. Ent. Inst., Mem. 3: 200-208.

The type-species of this new genus is *Bassus biguttatus* Gravenhorst, which was formerly regarded as the type-species of *Syrphoctonus* Foerster (which see). The genus is rather small, and its species occur in the Neotropic, Holarctic, and Oriental regions.

Taxonomy: Dasch, 1964. Amer. Ent. Inst., Mem. 3: 200-208 (Nearctic spp.). — Dasch, 1964.

Amer. Ent. Inst., Contrib. 1 (1): 45-63 (Neotropic spp.).

citropectoralis (Schmiedeknecht), n. comb. N. Y., Pa., e. Ohio, n. Mich., interior Alaska, s.e. B. C.; Europe.

Homocidus citropectoralis Schmiedeknecht, 1926. Opusc. Ichn., v. 5, p. 3412. ♂.

flavolineatus (Gravenhorst), n. comb. N. S. w. to n. Yukon and Alaska, s. to e. S. C., s. Ala.,

n.w. Ark., s. Colo., and n. Calif.; Mexico, Ecuador; Eurasia. Host: *Allograpta obliqua*

(Say), *Metasyrphus americanus* (Wied.), *M. lapponicus* (Zett.), *Ocyptamus clavatus* (F.),

O. fascipennis (Wied.).

Bassus flavolineatus Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 337. ♀.

Bassus bimaculatus Holmgren, 1858 (1856). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 360. ♂.

Bassus agilis Cresson, 1868. Amer. Ent. Soc., Trans. 2: 111. ♂.

Bassus frontalis Cresson, 1868. Amer. Ent. Soc., Trans. 2: 111. ♀. Preocc. by Zetterstedt, 1838.

Bassus junctus Provancher, 1883. Nat. Canad. 14: 10. "♂" = ♀.

patei (Dasch), n. comb. Northern Colo., Alaska.

Syrphoctonus patei Dasch, 1964. Amer. Ent. Inst., Mem. 3: 207. ♀.

Genus CAMPOCRASPEDON Uchida

Campocraspedon Uchida, 1957. Hokkaido Imp. Univ., Faculty Agr., Jour. 50: 237.

Type-species: *Campocraspedon satoi* Uchida. Monotypic and orig. desig.

This is a small Holarctic genus.

foutsii (Cushman). Maine, Mass., N. Y., Md., D. C., e. N. C., s.e. Ont., Ohio, e. Ill.

Syrphoctonus foutsii Cushman, 1927. U. S. Natl. Mus., Proc. 72 (13): 12. ♂, ♀.

truncatus Dasch. Northern Colo., Alaska, s.e. B. C., n. Idaho.

Campocraspedon truncatus Dasch, 1964. Amer. Ent. Inst., Mem. 3: 214. ♂, ♀.

Genus PHTHORIMA Foerster

Phthorima Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 162.

Type-species: *Bassus compressus* Desvignes. By subsequent monotypy from inclusion by Thomson, 1890.

Phthorimus Thomson, 1890. Opusc. Ent. 14: 1474. Emend.

This is a small Holarctic genus.

bidens (Davis). N. B. s. to Md., w. to s.w. Ont. and n. Colo. Host: *Neocnemodon coxalis* (Curran), syrphid on hickory bark.

Otoblastus bidens Davis, 1897. Amer. Ent. Soc., Trans. 24: 273. ♂.

Phthorima sulciclypeus Cushman, 1920. U. S. Natl. Mus., Proc. 58: 265. ♀.

compressa (Desvignes). Colo., s. Alta., interior Alaska, n. Yukon, B. C.

Bassus compressus Desvignes, 1856. Cat. Brit. Ich. in Brit. Mus., p. 91. ♀.

Bassus ibaloidis Kriechbaumer, 1878. Ent. Nachr. 4: 211. ♀.

Homoporus niger Morley, 1906 (1905). Ent. Soc. London, Trans. 53: 422. ♂.

extensor Cushman. N. S. w. to s.e. B. C., s. to D. C., s.e. Tenn., and n.w. Colo.

Phthorima extensor Cushman, 1920. U. S. Natl. Mus., Proc. 58: 264. ♀.

rufipleurum Dasch. N. H., Mass., Conn., N. Y., Md., Ont., Ohio, Mich., w. N. W. T.

Phthorima rufipleurum Dasch, 1964. Amer. Ent. Inst., Mem. 3: 221. ♂, ♀.

townesi Dasch. Mass., N. Y., n. W. Va., Ont., Ohio, Mich., Iowa.

Phthorima townesi Dasch, 1964. Amer. Ent. Inst., Mem. 3: 224. ♂, ♀.

sulcigena Dasch. Southeastern B. C. Known only from the holotype.

Phthorima sulcigena Dasch, 1964. Amer. Ent. Inst., Mem. 3: 228. ♂.

Genus SYRPHOPHILUS Dasch

Syrphophilus Dasch, 1964. Amer. Ent. Inst., Mem. 3: 59.

Type-species: *Bassus bizonarius* Gravenhorst. Orig. desig.

This is a small Holarctic genus.

asperatus Dasch. Interior Alaska.

Syrphophilus asperatus Dasch, 1964. Amer. Ent. Inst., Mem. 3: 71. ♀.

bizonarius (Gravenhorst). Newfoundland (insular) w. to interior Alaska, s. to w. N. C., N. Mex., and n. Calif.; Eurasia. Host: Syrphids.

Bassus bizonarius Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 350. ♂.

Bassus cingulatus Holmgren, 1858 (1856). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 369. ♂.

Bassus frontalis Brischke, 1871. Phys.-Oekonom. Gesell. Koenigsberg, Schr. 11: 104. ♂.

Preocc. by Zetterstedt, 1838 and Cresson, 1868.

Bassus saginatus Provancher, 1879. Nat. Canad. 11: 277. "♀" = ♂.

- Zootrepes maudae* Davis, 1895. Amer. Ent. Soc., Trans. 22: 22. ♂, ♀. This name appeared in Davis' key and applies to the same lectotype as does *Z. inconstans* Davis.
- Zootrepes inconstans* Davis, 1895. Amer. Ent. Soc., Trans. 22: 23, 29. ♂, ♀. This name applies to the same lectotype as does *Z. maudae* Davis (above).
- Homocidus iwataensis* Uchida, 1930. Hokkaido Imp. Univ., Faculty Agr., Jour. 25: 257. ♀.
- Homocidus satoi* Uchida, 1930. Hokkaido Imp. Univ., Faculty Agr., Jour. 25: 257. ♂, ♀.
- ichneumonoides** (Provancher). Newfoundland (insular) w. to Alaska, s. to Mass., n. Mich., N. Mex., n. Idaho, and w. Wash.
- Bassus ichneumonoides* Provancher, 1874. Nat. Canad. 6 (1): 31 (key); 6 (2): 57. ♂, ♀.
- Bassus cingulatus* Provancher, 1883. Nat. Canad. 14: 11. ♀. Preocc. by Holmgren, 1858.
- Zootrepes similis* Brues, 1908. Wis. Nat. Hist. Soc., Bul. 6: 52. ♀.
- tricinctorius** (Thunberg). Northern Que. w. to Alaska, s. to n.w. S. C., s.w. Mo., N. Mex., and n.e. Calif.; Eurasia. Host: Syrphids.
- Ichneumon tricinctorius* Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 278; 9: 357. [male].
- Bassus cinctus* Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 327. ♂.
- Bassus lateralis* Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 342. "♂" = ♀.
- Bassus scabriculus* Holmgren, 1858 (1856). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 357. ♂, ♀.
- Bassus albicinctus* Desvignes, 1862. Ent. Soc. London, Trans. 10: 218. ♂.
- Bassus hyperboreus* Marshall, 1877. Ent. Monthly Mag. 13: 241. ♂.
- Bassus scapulatus* Provancher, 1883. Nat. Canad. 14: 11. ♀.
- Homocidus takaozanus* Uchida, 1930. Hokkaido Imp. Univ., Faculty Agr., Jour. 25: 259. ♂.
- Syrphophilus tricinctorius niveus* Dasch, 1964. Amer. Ent. Inst., Mem. 3: 70. ♂, ♀. N. syn.; range almost completely overlapped by what Dasch considered to be the nominate subspecies.
- tricinctus** (Ashmead). Northern Que. w. to Alaska, s. to Colo., s.w. Alta., and w. Wash.
- Bioblapsis tricincta* Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 224. ♂. The type locality is Berg Bay, Glacier Bay Natl. Monument, Alaska.

Genus TYMMOPHORUS Schmiedeknecht

Tymmophorus Schmiedeknecht, 1913. Opusc. Ichn. 34: 2714.

Type-species: *Tymmophorus lacustris* Schmiedeknecht. Monotypic.

This small genus is Holarctic and apparently Neotropic (Mexico).

fasciventris Dasch. Northern Colo., Alaska, and Yukon.

Tymmophorus fasciventris Dasch, 1964. Amer. Ent. Inst., Mem. 3: 85. ♂, ♀.

gelidus Dasch. Arctic and subarctic N. W. T.; arctic Greenland.

Tymmophorus gelidus Dasch, 1964. Amer. Ent. Inst., Mem. 3: 87. ♂, ♀.

gillettii (Davis). Colo. Known only from the holotype.

Syrphoctonus gillettii Davis, 1895. Amer. Ent. Soc., Trans. 22: 26. ♀.

obscuripes (Holmgren). Northern Que. w. to n. Yukon and Alaska, s. to n. Colo., n.w. Wyo., and n.e. Calif.; Europe. In Dasch's (1964) revision of the North American Diplazontinae the

name *graculus* (Gravenhorst) is incorrectly applied to this species. Pfankuch (1910) studied the now lost holotype (presumably destroyed in World War II) of *Bassus*

graculus Gravenhorst; he found that *B. graculus* is a species of Hemiteles and noted that Thomson's (1890) suppression of *B. obscuripes* Holmgren as a synonym of *graculus* is incorrect. If specimens in the U. S. Natl. Museum collection are correctly identified,

B. graculus Gravenhorst represents an undescribed European genus of Phygadeuontina.

Bassus obscuripes Holmgren, 1858 (1856). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 369. ♂, ♀.

Bassus rufocinctus Desvignes, 1862. Ent. Soc. London, Trans. 10: 215. ♂, ♀.

Tymmophorus graculus nigrofemoratus Dasch, 1964. Amer. Ent. Inst., Mem. 3: 79. ♂, ♀.

N. syn.; range completely overlapped by what Dasch treated as the nominate subspecies.

Taxonomy: Thomson, 1890. Opusc. Ent. 14: 1494-1495. —Pfankuch, 1910. Deut. Ent. Ztschr. (for 1910), p. 275-276.

- rufiventris** (Gravenhorst). Newfoundland and n. Que. w. to N. W. T. and Alaska, s. to Conn., w. N. C., s. Iowa, n. Idaho, and n.w. Oreg.; Europe.
Bassus rufiventris Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 312. ♂.
Bassus suspiciosus Brischke, 1871. Phys.-Oekonom. Gesell. Koenigsberg, Schr. 11: 106. ♀.
Zootrepes antennatus Davis, 1895. Amer. Ent. Soc., Trans. 22: 23. ♂, ♀.
Tymnophorus lacustris Schmiedeknecht, 1913. Opusc. Ichn., v. 5, p. 2714. ♀.
thunbergi Dasch. Que., N. H., Mass., Ont., n. Man., Alaska, B. C. The occurrence of this species at Nome, Alaska (on the Seward Peninsula) makes it highly probable that it will prove to be Holarctic.
Tymnophorus thunbergi Dasch, 1964. Amer. Ent. Inst., Mem. 3: 79. ♂, ♀.

Genus DIPLAZON Viereck

- Bassus* auct., nec Fabricius. Although no species of Diplazontinae were placed in *Bassus* by Fabricius, the name was for many years applied to to Diplazontinae, in later years more particularly to species of *Diplazon*.
Diplazon Nees ab Esenbeck, 1819 (1818). In Gravenhorst, Nova Acta Leopoldina 9: 292. Nomen nudum. *Diplazon* Nees ab Esenbeck is cited as a synonym of *Bassus* Fabricius in this paper by Gravenhorst. In his discussion of *Bassus*, Gravenhorst referred to a footnote consisting of a quotation from a letter he had received from Nees ab Esenbeck on Dec. 25, 1918 wherein Nees ab Esenbeck mentioned the name *Diplazon*. Nothing in the footnote makes the name available. Gravenhorst did nothing to validate *Diplazon* because he did not associate it with a valid specific name (even when names of genera described without included species are placed in synonymy, species are not thereby placed in them).
Diplazon Viereck, 1914. U. S. Natl. Mus., Bul. 83: 46.
 Type-species: *Ichneumon laetatorius* Fabricius. Monotypic and orig. desig.
 This is a moderate sized genus of worldwide distribution.
- albotibialis** Dasch. Northern Que., Alaska.
Diplazon albotibialis Dasch, 1964. Amer. Ent. Inst., Mem. 3: 53. ♂, ♀.
- algidus** Dasch. Newfoundland (n. Labrador) w. to n. Yukon and Alaska, s. to n. Man., Colo., s.w. Alta., and B. C.; n.e. Greenland; Norwegian Lapland.
Diplazon algidus Dasch, 1964. Amer. Ent. Inst., Mem. 3: 51. ♂, ♀.
- angustus** Dasch, P. E. I., n. Man., w. N. W. T., n. Yukon, interior Alaska, n.e. Calif.
Diplazon angustus Dasch, 1964. Amer. Ent. Inst., Mem. 3: 46. ♂, ♀.
- bradleyi** Dasch. Que., s. Man., n. Colo., w. N. W. T., Alaska, B. C., w. Wash.
Diplazon bradleyi Dasch, 1964. Amer. Ent. Inst., Mem. 3: 37. ♂, ♀.
- cascadensis** Dasch. Southwestern Alta., n.w. Wash. The type locality is Cascade Mt., Banff Natl. Park, Alta. (not "Banff, at 7,000-8,000 ft. in the Cascade Mts.").
Diplazon cascadensis Dasch, 1964. Amer. Ent. Inst., Mem. 3: 49. ♂, ♀.
- constrictus** Dasch. Colo., n.e. Calif.
Diplazon constrictus Dasch, 1964. Amer. Ent. Inst., Mem. 3: 47. ♂, ♀.
- deletus** Thomson. Northern Que. w. to Alaska, s. to Conn., w. N. C., Colo., n. Utah, and n.w. Oreg.; Europe. The subspecific classification of Dasch (1964) is difficult to reconcile zoogeographically, particularly in view of the fact that nothing is known about populations of *deletus* which presumably exist in northeastern Asia; therefore, no subspecies of *deletus* are recognized here.
Bassus deletus Thomson, 1890. Opusc. Ent. 14: 1471. ♂, ♀.
Diplazon deletus fuscifemoratus Dasch, 1964. Amer. Ent. Inst., Mem. 3: 43. ♂, ♀. N. syn.
- flavifrons** Dasch. Southwestern B. C., w. Wash., n.w. Calif.
Diplazon flavifrons Dasch, 1964. Amer. Ent. Inst., Mem. 3: 39. ♂, ♀.
- galenensis** Dasch. Southern Idaho. Known from two specimens collected at an elevation of 8600 ft. on Galena Summit, Blaine Co., Idaho.
Diplazon galenensis Dasch, 1964. Amer. Ent. Inst., Mem. 3: 45. ♂, ♀.
- insulcatus** Dasch. Southwestern Alta., w. Wash.
Diplazon insulcatus Dasch, 1964. Amer. Ent. Inst., Mem. 3: 58. ♂, ♀.

laetatorius (Fabricius). Newfoundland (insular) w. to B. C., s. to Fla., s. Tex., and s. Calif.;

Mexico, West Indies, Brazil, Peru, Argentina, Chile; most of Old World. Host: *Allograpta obliqua* (Say), *Metasyrphus americanus* (Wied.), *M. perplexus* (Osb.), *M. vinelandi* (Curran), *Paragus* (*Pandasyopthalmus*) *tibialis* (Fall.), *Pseudodorus clavatus* (F.), *Sphaerophoria contigua* Macq., *Syrphus rectus* O. S., *S. vittatifrons* Shan. This is probably the most frequently collected species of Ichneumonidae; it is certainly the most widely distributed one. It usually reproduces thelytokously. Males occur sporadically in the U. S.; Dasch (1964) studied males from 19 states from coast to coast.

He said that males are not known to occur outside the Nearctic Region.

Ichneumon laetatorius Fabricius, 1781. Species Insectorum, v. 1, p. 424. ♀.

Ichneumon dichrous Schrank, 1781. Enum. Ins. Austriae, p. 352. "♂" = ♀.

Anomalon attractus Say, 1826. Boston Jour. Nat. Hist. 1: 241. ♀.

Bassus albovarius Wollaston, 1858. Ann. and Mag. Nat. Hist. (3) 1: 23. "♂" = ♀?

Bassus sycophanta Cresson, 1868. Amer. Ent. Soc., Trans. 2: 112. ♂, ♀.

Bassus cinctipes Holmgren, 1869 (1868). Eug. Resa I, Zool. I, Ins., p. 409. ♀.

Bassus tripicticus Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 85. ♂, ♀.

Scolobates varipes Smith, 1878. Ent. Soc. London, Trans. 26: 3. ♀.

Bassus venustulus Saussure, 1890. In Granidier, Hist. Madagascar, v. 20, Hym., Pt. 1, pl. 15, figs. 23, 23a. "♂" = ♀?

Bassus laetatorius var. *terminalis* Davis, 1895. Amer. Ent. Soc., Trans. 22: 19. ♀.

Bassus balearicus Kriechbaumer, 1895. Soc. Espan. de Hist. Nat., Bol. 23: 246. ♀.

Bassus generosus Cameron, 1898. Manchester Lit. and Phil. Soc., Mem. and Proc. 42: 31. ♀.

Scolobates varipes Dalla Torre, 1901. Cat. Hym., v. 3, p. 328. Emend.

Bassus laetatorius var. *senegalensis* Ferriere, 1925. Agron. Colon. 12 (88): 148. [female].

Bassus laetatorius ikiti Cheesman, 1936. Roy. Ent. Soc. London, Trans. 85: 182. ♀.

Taxonomy: Dasch, 1964. Amer. Ent. Inst., Mem. 3: 15-22.

Biology: Kelly, 1914. Jour. Econ. Ent. 7: 294-297. — Kamal, 1926. Jour. Econ. Ent. 19: 724,

727. — Kamal, 1939. Egypt Min. Agr., Tech. and Sci. Serv. Bul. 207: 12-13, 26-31, 46-47.

— Butler and Dasch, 1958. Ariz. Agr. Expt. Sta., Tech. Bul. 135: 5-7.

orbitalis (Cresson). Northern Que. w. to n. Yukon and Alaska, s. to N. Y., n. Minn., w. S. Dak., N. Mex., and s. Calif.; Mexico. Host: *Syrphus opinator* O. S.

Bassus orbitalis Cresson, 1865. Ent. Soc. Phila., Proc. 4: 272. ♀.

Bassus cinctulus Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 375. ♂, ♀.

Bassus orbitalis Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 439. ♀. Preocc. by Cresson, 1865.

pectatorius (Thunberg). Newfoundland (insular and Labrador) (w. to n. Alaska, s. to N. Y., s. Mich., n. N. Mex., and n.e. Calif.; s. Mexico; Eurasia. Host: *Trichopsomyia* sp.

Ichneumon pectoratorius Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 280; 9: 366. ♂.

Ichneumon angustorius Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 280; 9: 366. ♀.

Bassus pectoratorius Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 333. ♂, ♀. Preocc. in *Diplazon* by Thunberg, 1822.

Bassus pulchripes Provancher, 1875. Nat. Canad. 7 (5): 143. "♂" = ♀.

Polysphincta pleuralis Provancher, 1875. Nat. Canad. 7 (10): 312. "♂" = ♀.

Homocidus akaashii Uchida, 1931. In Takagi, Chosen Govt.-Gen., Forest Expt. Sta. Bul. 12: 24 (German), 50 (Japanese). "♂" = ♀.

Bassus urupensis Uchida, 1935. Insecta Matsumurana 9: 118. ♂, ♀.

Taxonomy: Roman, 1912. Zool. Bidr. Upsala 1: 232-233, 271.

scutellaris (Cresson). Que. w. to s.e. Alta. and n. Oreg., s. to n. Ga., s. La., and n.e. Tex.; s. Mexico. Host: *Pseudodorus clavatus* (F.).

Bassus scutellaris Cresson, 1868. Amer. Ent. Soc., Trans. 2: 112. ♂, ♀.

tetragonus (Thunberg). Newfoundland (Labrador) w. to n. Yukon and Alaska, s. to w. N. C., Colo., and n.w. Calif.; Eurasia. Host: *Syrphus ribesii* (L.).

Ichneumon tetragonus Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 280; 9: 365. [male].

Ichneumon hortorius Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 280; 9: 365. ♂.

Ichneumon ustorius Thunberg, 1822; 1824. Acad. Imp. des Sci. St. Petersburg, Mem. 8: 281; 8: 366. ♂.

Bassus tricinatus Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 351. ♂.

Bassus nemoralis Holmgren, 1858 (1856). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 354. ♂, ♀.

Bassus concinnus Cresson, 1868. Amer. Ent. Soc., Trans. 2: 111. ♀.

Bassus amoenus Provancher, 1874. Nat. Canad. 6 (1): 3 (key); 6 (2): 55. ♀.

Bassus albicoxus Provancher, 1874. Nat. Canad. 6 (1): 3 (key); 6 (2): 56. ♂.

Bassus albicornis(!) Provancher, 1879. Nat. Canad. 11: 273. Lapsus for *B. albicoxus*.

Diplazon tetragonus rufigaster Dasch, 1964. Amer. Ent. Inst., Mem. 3: 28. ♂, ♀. N. syn.; range totally overlapped by what Dasch treated as the nominate subspecies.

Taxonomy: Roman, 1912. Zool. Bidr. Uppsala 1: 259, 282, 287.

tibiatorius occidentalis Dasch. Colo., Alta., Ariz., s. Yukon, B. C., w. Wash., s.e. Oreg., n.e.

Calif. *D. tibiatorius tibiatorius* (Thunberg) is Eurasian. The paratype of *D. t. occidentalis* from "Valence" is a misidentified French specimen of the nominate subspecies.

Diplazon tibiatorius occidentalis Dasch, 1964. Amer. Ent. Inst., Mem. 3: 34. ♂, ♀.

walleyi Dasch. Northern Man., arctic and subarctic w. N. W. T., s. Yukon.

Diplazon walleyi Dasch, 1964. Amer. Ent. Inst., Mem. 3: 23. ♂, ♀.

Genus PROMETHES Foerster

Promethes Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 162.

Type-species: *Bassus sulcator* Gravenhorst. By subsequent monotypy from inclusion by Woldstedt, 1877.

Liopsis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 162.

Type-species: *Bassus sulcator* Gravenhorst. Monotypically included and desig. by Viereck, 1912.

Promethus Thomson, 1890. Opusc. Ent. 14: 1465, 1475. Emend.

This small genus is Neotropic, Holarctic, and Oriental.

gravenhorsti Dasch. Newfoundland (insular), N. B., Mass., n. N. Y., n. Mich., Alta., interior Alaska, B. C., n.w. Wash.; Japan? Host: Syrphids.

Promethes gravenhorsti Dasch, 1964. Amer. Ent. Inst., Mem. 3: 236. ♂, ♀.

nominguis Dasch. Southern Que.

Promethes nominguis Dasch, 1964. Amer. Ent. Inst., Mem. 3: 240. ♂, ♀.

striatus Dasch. Western Pa., e. Ohio, n. Colo., n.w. Alta.

Promethes striatus Dasch, 1964. Amer. Ent. Inst., Mem. 3: 238. ♂, ♀.

sulcator (Gravenhorst). Newfoundland (insular) and n. Que. w. to n. Yukon and Alaska, s. to Pa., n. Ill., e. S. Dak., Colo., Ariz., and n.w. Calif.; Eurasia.

Bassus sulcator Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 320. ♂, ♀.

Bassus areolatus Holmgren, 1856 (1854). Svenska Vetensk.-Akad. Handl. 75: 85. ♂, ♀.

Bassus longicornis Provancher, 1883. Nat. Canad. 14: 12. ♀.

Bassus aciculatus Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 368. ♀. Preocc. by Ruthe, 1859.

Bassus auriculatus Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 429. ♀.

Promethes sulcator splendidus Dasch, 1964. Amer. Ent. Inst., Mem. 3: 236. ♂, ♀. N. syn.; range completely overlapped by what Dasch treated as the nominate subspecies.

Genus SUSSABA Cameron

Sussaba Cameron, 1909. Bombay Nat. Hist. Soc., Jour. 19: 728.

Type-species: *Sussaba bicarinata* Cameron. Monotypic.

This is a moderate sized genus of Neotropic, Holarctic, and Oriental distribution.

cognata faceta Dasch. N. S., Que., Maine, N. H., Vt., Mass., N. Y., w. N. C., n. Ga., Ont. n. Mich., e. Tenn., Alaska, s. B. C., w. Wash., w. Oreg., n.w. Calif. Two more or less sympatric Eurasian "subspecies" were recognized by Dasch (1964) and by Townes, Momoi, and Townes (1965). They are *S. cognata cognata* (Holmgren), which was described from southern Lapland, and *S. cognata albicoxa* (Thomson), which was described from southern Sweden, Germany, and France.

Promethes albicoxis Ashmead, 1906. In Slosson, Ent. News 17: 324. Nomen nudum or lapsus for and misidentification of *P. albicoxa* Thomson.

Sussaba cognata faceta Dasch, 1964. Amer. Ent. Inst., Mem. 3: 265. ♂, ♀.

Taxonomy: Townes, Momoi, and Townes, 1965. Amer. Ent. Inst., Mem. 5: 414.

coloradensis Dasch. Northern Colo. Known only from the holotype which was collected four miles west of Cameron Pass, Colo. on July 23, 1894 by C. F. Baker.

Sussaba coloradensis Dasch, 1964. Amer. Ent. Inst., Mem. 3: 270. ♀.

dorsalis cultriformis (Ashmead). N. S. w. to s.e. Alta., s. to N. J., s.w. Va., and Nebr. Host:

Platycheirus erraticus Curran, *Sphaerophoria philantus* (Meig.), syrphid on cabbage, syrphid on reed canary grass. Single specimens apparently not otherwise separable from *d. cultriformis* were recorded by Dasch from s.e. B. C., s. Yukon, and s.w. Alaska, well within the range of the nominate subspecies.

Trematopygus? cultriformis Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 441. ♀.

dorsalis dorsalis (Holmgren). Newfoundland (Labrador) w. to n. Yukon and Alaska, s. to insular Newfoundland, s. central Que., n. Colo., and n. Calif.; Eurasia.

Bassus dorsalis Holmgren, 1858 (1856). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 367. ♂, ♀.

Bassus maculatus Desvignes, 1862. Ent. Soc. London, Trans. 10: 216. ♂, ♀.

elongata (Provancher). Newfoundland (n. Labrador) w. to n. Yukon and Alaska, s. to Vt., n. Mich., Tex., N. Mex., n. Utah, and n. Calif.; Eurasia.

Bassus elongatus Provancher, 1874. Nat. Canad. 6 (1): 31 (key); 6 (2): 57. ♂, ♀.

Bassus monticola Snellen van Vollenhoven, 1875. Pinacographia, p. 4 and pl. 1, fig. 9. ♂.

Promethus laticarpus Thomson, 1890. Opusc. Ent. 14: 1481. ♂, ♀.

Otoblastus erodens Davis, 1897. Amer. Ent. Soc., Trans. 24: 273. ♂, ♀.

Promethes uncinatus Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 224. ♀. Townes (1945) stated that the holotype is a composite specimen, but I do not think he was correct; therefore, his selection of the thorax as "lectotype" is of doubtful significance. Dasch (1964) incorrectly stated that the type locality is "Berg Bay, Alaska;" it is Kukak Bay, Alaska.

Promethes laticarpus watanabei Uchida, 1957. Hokkaido Imp. Univ., Faculty Agr., Jour. 50: 248. ♂, ♀. Syn.? Dasch (1964) stated that he believed *watanabei* (described from Hokkaido) to be a subspecies of *elongatus*, but he did not use either of the trinomials *S. elongatus watanabei* or *S. elongatus elongatus*. Moreover, Dasch apparently also studied typical specimens of *elongata* from Japan (see his p. 253).

Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 560. —Dasch, 1964. Amer. Ent. Inst., Mem. 3: 242, 250-254.

nigrithorax Dasch. Northern Que., n.e. N. W. T., Colo., Alaska. The Baker notebook indicates that the female paratype cited by Dasch as "Colorado, C. Baker (Washington)" was collected at an elevation of 9500 ft. at Chambers Lake, Colo. on July 18, 1895 by C. F. and N. E. Baker. A male for which the same data apply is labeled by Dasch as a paratype of *nigrithorax* but is evidently the specimen he cited as a paratype of *pulchella coriacea* Dasch from "Colorado (no locality)." In addition, a specimen from "Camp 334, Alaska" (a place at the east end of Mt. McKinley Natl. Park and now known as Carlo) which Dasch labeled as a paratype of *nigrithorax* is cited in his revision as a paratype of *pulchella coriacea*. If *nigrithorax* is a valid species and if the one paratype of *nigrithorax* and two "paratypes" of *pulchella coriacea* discussed above are correctly identified as *nigrithorax* they are apparently the only known specimens of this species which were not collected above or beyond timberline.

Sussaba nigrithorax Dasch, 1964. Amer. Ent. Inst., Mem. 3: 249. ♂, ♀.

placita Dasch. Southeastern B. C., n. Calif.

Sussaba placita Dasch, 1964. Amer. Ent. Inst., Mem. 3: 269. ♂, ♀.

- pulchella coriacea** Dasch. P. E. I. s. to w. N. C., w. to n.w. Mich. and s.e. Minn. Dasch said "*S. pulchella coriacea* is most closely related to *nigrithorax* ..."; *nigrithorax* has a range which overlaps that known for *S. pulchella pulchella* (Holmgren) in North America (see foregoing discussion of *nigrithorax*).
Sussaba pulchella coriacea Dasch, 1964. Amer. Ent. Inst., Mem. 3: 247. ♂, ♀.
- pulchella pulchella** (Holmgren). Northern Que., N. W. T.; Europe; n. India.
Bassus pulchellus Holmgren, 1858 (1856). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 366. ♂, ♀.
- Bassus aciculatus* Ruthe, 1859. Stettin. Ent. Ztg. 20: 373. ♀.
- Sussaba bicarinata* Cameron, 1909. Bombay Nat. Hist. Soc., Jour. 19: 728. ♀.
- punctiventris** (Thomson). Boreal Que. w. to s. Yukon, s. to Mass., n. Mich., Colo., Ariz., and Oreg.; Europe.
Homotropus punctiventris Thomson, 1890. Opusc. Ent. 14: 1500. ♀.
- rohweri** (Brues). Southeastern Sask., s. Yukon, and Alaska, s. to N. Mex., Ariz., and n. Calif.; Mexico. Host: *Metasyrphus perplexus* (Osb.). The occurrence of this species at Nome, Alaska (on the Seward Peninsula) makes it highly probable that it will prove to be Holarctic.
Promethes rohweri Brues, 1908. Wis. Nat. Hist. Soc., Bul. 6: 51. ♂, ♀.
- rugipleuris ellesmerae** Dasch. Northern N. W. T. Known from a series of 67 specimens collected at one locality on the eastern side of Ellesmere Island. It seems unlikely that this taxon could represent anything more than the end of a cline.
Sussaba rugipleuris ellesmerae Dasch, 1964. Amer. Ent. Inst., Mem. 3: 263. ♂, ♀.
- rugipleuris rugipleuris** Dasch. N. W. T., s.e. Wyo., n. Yukon, Alaska.
Sussaba rugipleuris rugipleuris Dasch, 1964. Amer. Ent. Inst., Mem. 3: 262. ♂, ♀.

SUBFAMILY OXYTORINAE

The subfamily Oxytorinae (=Microleptinae) includes a number of genera about which so little is known that their phyletic relationships with other ichneumonid genera are particularly in doubt. Hence, their position in the classification of the family is somewhat a matter of speculation. *Oxytorus* and *Microleptes* are two of these genera of doubtful affinities. Of the 24 genera of Oxytorinae recognized by Townes (1971), 19 have Nearctic species. Species of some genera have been reared from Mycetophilidae, but for most of the genera no hosts are known.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 179-206 (genera of world).

Genus MICROLEPTES Gravenhorst

Microleptes Gravenhorst, 1829. Ichn. Europaea, v. 1, p. 679.

Type-species: *Microleptes splendidulus* Gravenhorst. Monotypic.

Miommeris Foerster, 1868. Naturh. Ver. Reinlande, Verh. 25: 171.

Type-species: *Miommeris aquisgranensis* Foerster. Monotypically included and designated by Foerster, 1871.

Mionomeris Schulz, 1906. Spolia Hym., p. 94. Emend.

Gnathoniella Schmiedeknecht, 1924. Ent. Monthly Mag. 60: 47.

Type-species: *Gnathoniella egregia* Schmiedeknecht. Monotypic.

Microleptes Walkley, 1967. In Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2, Sup. 2, p. 180. Unjustified emend. Mr. George Steyskal is of the opinion (personal commun., 1976) that Hopper (1959) was correct in asserting that Gravenhorst's name *Microleptes* was a lapsus in light of the Latin definition (meaning stealer of little things) which Gravenhorst gave for the Greek words from which he derived *Microleptes*. However, Steyskal feels that it is not provable that Gravenhorst's Greek word which transliterates as *leptes* was a lapsus for *cleptes* rather than *lestes* (the latter meaning the same thing). Therefore, the ichneumonid name *Microleptes* must be treated as an unjustified emendation and, therefore, does not date from Gravenhorst (1829) and is preoccupied by Newman, 1840; Stal, 1866; and Simpson, 1928, instead of preoccupying them.

This is a small Holarctic genus. Townes (1971) said that "the relationships of *Microleptes* are uncertain," and that "it may, or may not belong to the present subfamily."

Revision: Stelfox, 1961. Ent. Monthly Mag. 97: 181-182 (British spp.).

Taxonomy: Hopper, 1959. Ent. Soc. Wash., Proc. 61: 166 (derivation of *Microleptes*).

—Townes, 1971. Amer. Ent. Inst., Mem. 17: 183-184 (syn., etc.).

splendidulus Gravenhorst. Eastern Que., s. Mich.

Microleptes splendidulus Gravenhorst, 1829. Ichn. Europaea, v. 1, p. 679. ♀.

Miomeres glabriventris Thomson, 1888. Opusc. Ent. 12: 1317. ♂, ♀.

Taxonomy: Stelfox, 1961. Ent. Monthly Mag. 97: 181-182.

Genus OXYTORUS Foerster

Delolytus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 189. It should be noted that v. 25 of Naturh. Ver. Rheinlande, Verh. was published in two halves; *Delolytus* appeared in the first half and *Oxytorus* and *Callidiotes* appeared in the second half. If it is subsequently shown that the first half was published before either the second half or the authors separates of the entire paper, *Delolytus* could no longer be suppressed by *Oxytorus* or *Callidiotes*.

Type-species: *Mesoleptus corator* Gravenhorst. By subsequent monotypy from inclusion by Foerster, 1876. The type-species is regarded as a synonym of *O. luridator* (Gravenhorst).

Callidiotes Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 199.

Type-species: *Mesoleptus corator* Gravenhorst. By subsequent monotypy from inclusion by Foerster, 1876.

Oxytorus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 199.

Type-species: *Oxytorus armatus* Thomson. By subsequent monotypy from inclusion by Thomson, 1883.

Pantoporthus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 209.

Type-species: *Ichneumon luridator* Gravenhorst. Monotypically included and design. by Perkins, 1962.

Mesatractodes Morley, 1907. Brit. Ichn., v. 2, p. 257.

Type-species: *Atractodes properator* Haliday. Monotypic. The type-species is regarded as a synonym of *O. luridator* (Gravenhorst).

Paracania Viereck, 1912. U. S. Natl. Mus., Proc. 42: 642.

Type-species: *Paracania elyi* Viereck. Monotypic and orig. design.

Prosmorida Cushman, 1915. Ent. Soc. Wash., Proc. 17: 141.

Type-species: *Prosmorus elongatus* Davis. Monotypic and orig. design. This is a Holarctic genus of moderate size.

albopleuralis (Provancher). Que. s. to S. C. and n. Ga., w. to Mich.

Mesoleptus albopleuralis Provancher, 1879. Nat. Canad. 11: 224. ♂.

Atractodes nitens Provancher, 1882. Nat. Canad. 13: 368. ♂, ♀.

Prosmosus (!) *punctifrons* Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 309. "♂" = ♀.

antennatus (Cresson). Que. s. to s. Ga., w. to Wis. and La.

Mesoleptus antennatus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 272. ♂.

Mesoleptus facetus Cresson, 1868. Amer. Ent. Soc., Trans. 2: 100. ♂.

Mesoleptus rufomixtus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 97.

"♀" = ♂ (♂ misdesig.).

Mesoleptus filiformis Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 98. ♀.

Formerly preocc. in *Cryptus* by Fonscolombe, 1850, and Rudow, 1886.

Erolytus concaerius Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 356. ♀.

Cryptus Genelinii Dalla Torre, 1902. Cat. Hym., v. 3, p. 573. N. name for *M. filiformis* Provancher.

Paracania elyi Viereck, 1912. U. S. Natl. Mus., Proc. 42: 643. ♀.

elongatus (Davis). Southern Va., N. C., Tex.

Prosmosus (!) *elongatus* Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 310. ♀.

Genus **HYPERACMUS** Holmgren

Hyperacmus Holmgren, 1856 (1856). Svenska Vetensk. Akad. Handl. (n. f.) 1: 322.

Type-species: *Exochus crassicornis* Gravenhorst. Monotypic.

Nothaima Cameron, 1902. Bombay Nat. Hist. Soc., Jour. 14: 429.

Type-species: *Nothaima bicarinata* Cameron. Monotypic.

This is a small Holarctic and Oriental genus.

crassicornis (Gravenhorst). N. Y., Alaska; Eurasia. Host: *Yponomeuta malinella* Zell. The foregoing is a European host record of Meyer (1927); it needs confirmation.

Exochus crassicornis Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 347. ♀.

Biology: Meyer, 1927. [Leningrad] Gosud. Inst. Opytn. Agron. (State Inst. Expt. Agron.), Otd. Prikl. Ent. (Bur. Appl. Ent.), Izv. (Rpts.), Trudy po Prikl. Ent. (Works on Appl. Ent.). 3: 89.

Genus **ENTYPOMA** Foerster

Entypoma Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 171.

Type-species: *Entypoma robustum* Foerster. Monotypically included and desig. by Foerster, 1871.

Entelechia Foerster, 1871. Naturh. Ver. Rheinlande, Verh. 28: 110. Preocc. by Gistel, 1848.

Type-species: *Entelechia suspiciosa* Foerster. Monotypic.

Entypomus Thomson, 1888. Opusc. Ent. 12: 1289. Emend.

Entelechius Thomson, 1888. Opusc. Ent. 12: 1290. Emend.

This is a small Holarctic genus. According to Townes (1971), an undescribed species occurs in "Arctic and Arctic-Alpine North America."

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 189-190.

Genus **ALLOMACRUS** Foerster

Allomacrus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 177.

Type-species: *Allomacrus pimplarius* Thomson. By subsequent monotypy from inclusion by Thomson, 1888.

Sibiriakoffia Holmgren, 1881 (1880). Novas Species Ins. Cura et Labore A. E. Nordenskiöldii e Novaia Semlia Coactorum, p. 13.

Type-species: *Sibiriakoffia arctica* Holmgren. Monotypic.

Two species are known, one being Holarctic and the other Japanese.

arcticus (Holmgren). Colo., interior Alaska, B. C., Wash.; n. Eurasia.

Sibiriakoffia arctica Holmgren, 1881 (1880). Novas Species Ins. Cura et Labore A. E.

Nordenskiöldii e Novaia Semlia Coactorum, p. 14. ♂, ♀.

Allomacrus pimplarius Thomson, 1888. Opusc. Ent. 12: 1282. ♂, ♀.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 190-191 (syn., distribution).

Genus **APOCLIMA** Foerster

Apoclima Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 171.

Type-species: *Apoclima signaticorne* Foerster. Monotypically included and desig. by Foerster, 1871.

This is a small Neotropic, Holarctic, and Oriental genus. Apparently one or more unidentified or undescribed species occur in the Nearctic region.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 191-192.

Genus **CYLLOCERIA** Schiodte

Cylloceria Schiodte, 1839 (1838). Rev. et Mag. Zool. 1: 140.

Type-species: *Phytodietus caligatus* Gravenhorst. Desig. by Viereck, 1914.

Chatinocerus Ratzeburg, 1852. Ichn. d. Forstins., v. 3. p. 130.

Type-species: *Chalinocerus longicornis* Ratzeburg. Monotypic. The type-species is regarded as a synonym of *C. melancholica* (Gravenhorst).

Asphragis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 166.

Type-species: *Lissonota occupator* Gravenhorst. Desig. by Viereck, 1914, from four species included by Schmiedeknecht, 1888.

Chalinoceras(!) Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 166, 209.

This is a moderately large Holarctic and Neotropic genus.

lugubris (Cresson). Colo., N. Mex., s.w. Alta., interior Alaska, B. C.

Lampronota? lugubris Cresson, 1879 (1878). Acad. Nat. Sci. Phila., Proc. 30: 379. ♀.

Cylloceria fuscolina Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 371. ♂.

nodosa Walley. Northern Man., interior Alaska.

Cylloceria nodosa Walley, 1941. Canad. Ent. 73: 166. ♂, ♀.

sexlineata (Say). Maine w. to s. B. C., s. to n. Fla., n.e. Kans., Colo., and Wash. Townes and Townes (1951) believed that two or more species were confused under this name.

Anomalon sexlineata Say, 1829. Contrib. MacLurian Lyceum to Arts and Sci. 1: 74. ♀.

Cylloceria occidentalis Cresson, 1870. Amer. Ent. Soc., Trans. 3: 160. ♂, ♀. Formerly preocc. in *Lampronota* by Cresson, 1870, p. 161.

Lampronota sexcarinata Davis, 1895. Amer. Ent. Soc., Trans. 22: 30. ♀.

Lampronota errans Dalla Torre, 1901. Cat. Hym., v. 3, p. 515. N. name for *C. occidentalis* Cresson.

Lampronota aciculata Cameron, 1905. Invertebrata Pacifica 1: 129. ♀.

Taxonomy: Cushman and Gahan, 1921. Ent. Soc. Wash., Proc. 23: 157. — Townes and Townes, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 342.

Genus ANISERES Foerster

Aniseres Foerster, 1871. Naturh. Ver. Rheinlande, Verh. 28: 92.

Type-species: *Aniseres pallipes* Foerster. Desig. by Viereck, 1914.

This is a small Holarctic genus.

lubricus Foerster. Greenland; Europe.

Aniseres lubricus Foerster, 1871. Naturh. Ver. Rheinlande, Verh. 28: 93. ♂.

spectabilis (Foerster). Nearctic Region; Europe.

Aniseres pallipes Foerster, 1871. Naturh. Ver. Rheinlande, Verh. 28: 93. ♂.

Proclitus spectabilis Foerster, 1871. Naturh. Ver. Rheinlande, Verh. 28: 116. ♀.

Taxonomy: Thomson, 1888. Opusc. Ent. 7: 1304 (syn.). — Townes, 1971. Amer. Ent. Inst., Mem. 17: 193 (distribution).

Genus PANTISARTHURUS Foerster

Pantisarthrus Foerster, 1871. Naturh. Ver. Rheinlande, Verh. 28: 109.

Type-species: *Pantisarthrus inaequalis* Foerster. Desig. by Viereck, 1914.

This is a small Neotropic, Holarctic, and Oriental genus.

inaequalis Foerster. Que., N. Y., Ont.? Host: *Mycetophilid*.

Pantisarthrus inaequalis Foerster, 1871. Naturh. Ver. Rheinlande, Verh. 28: 110. ♀.

Bassus dorsalis Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 112. ♀.

Preocc. by Holmgren, 1858. Described from either Que. or Ont.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 194.

Genus PROCLITUS Foerster

Clepticus Haliday, 1838. Ann. Nat. Hist. 2: 116. Preocc. by Cuvier, 1829.

Type-species: *Clepticus praetor* Haliday. Desig. by Westwood, 1840.

Proclitus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 172.

Type-species: *Proclitus grandis* Foerster. Desig. by Viereck, 1914.

Aclastoneura Kriechbaumer, 1896. Ent. Nachr. 22: 359.

Type-species: *Aclastoneura tricolor* Kriechbaumer. Monotypic.

Mischozorides Ashmead, 1900 Canad. Ent. 32: 368. N. name for *Clepticus* Haliday.

This is a large genus; it is apparently known from all zoogeographic regions including the Australian Region (one Samoan sp.).

longicaudus (Provancher). Que., Maine, N. H., N. Y., N. J., N. C., Ga., Ala.

Cremastus longicaudus Provancher, 1882. Nat. Canad. 13: 367. ♂, ♀.

royi (Provancher). Que. s. to s. Ga.

Cremastus Royi Provancher, 1882. Nat. Canad. 13: 366. ♂, ♀.

Genus DIALIPSIS Foerster

Dialipsis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 171.

Type-species: *Dialipsis exilis* Foerster. Desig. by Viereck, 1914, from seven species included by Foerster, 1871.

Parentypoma Strobl, 1901 (1900). Siebenbuerg. Ver. f. Naturw., Hermannstadt, Verh. u. Mitt. 50: 71.

Type-species: *Parentypoma femoratum* Strobl. Monotypic. The type-species is regarded as a synonym of *exilis* Foerster.

According to Townes (1971) this is a Holarctic genus of moderate size. Presumably there are one or more unidentified or undescribed Nearctic species.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 195-196.

Genus PLECTISCIDEA Viereck

Plectiscidea Viereck, 1914. U. S. Natl. Mus., Bul. 83: 118.

Type-species: *Plectiscus collaris* Gravenhorst. Orig. desig.

This is a very large genus of Neotropic, Holarctic, Oriental, and Ethiopian distribution.

arctica (Roman). Greenland.

Plectiscus arcticus Roman, 1930. Ann. and Mag. Nat. Hist. (10) 5: 284. ♀.

carinata (Provancher). Que., N. Y.

Orthocentrus carinatus Provancher, 1879. Nat. Canad. 11: 281. ♂.

collaris (Gravenhorst). Greenland; Eurasia.

Plectiscus collaris Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 287. ♀.

glabrifrons (Davis). Northern Ill.

Catastenus glabrifrons Davis, 1897. Amer. Ent. Soc., Trans. 24: 342. ♂.

humeralis (Provancher). Que., B. C., w. Wash.

Mesochorus humeralis Provancher, 1883. Nat. Canad. 14: 4. ♀.

hyperborea (Holmgren). Greenland; Eurasia.

Plectiscus hyperboreus Holmgren, 1869. Svenska Vetensk.-Akad. Handl. (n. f.) 8 (pt. 5): 21. ♂, ♀.

Plectiscus bistriatus Thomson, 1888. Opusc. Ent. 12: 1299. ♂, ♀.

Taxonomy: Roman, 1916. Archiv for Zool. 10 (22): 9.

lurida (Foerster). Greenland; Europe.

Pantisarthrus luridus Foerster, 1871. Naturh. Ver. Rheinlande, Verh. 28: 100. ♀.

nasoni (Davis). N. Y., n. Ill.

Miomemis nasoni Davis, 1897. Amer. Ent. Soc., Trans. 24: 244. ♀.

Miomemis nasonii Dalla Torre, 1901. Cat. Hym., v. 3, p. 20. Emend.

nigra (Provancher). Que.

Plectiscus niger Provancher, 1883. Nat. Canad. 14: 6. ♂, ♀.

orcae (Ashmead). N. H., N. Y., Alaska.

Plectiscus orcae Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 240. ♀.

parva (Cushman). N. H.

Aperilaptus (!) *parvus* Ashmead, 1897. In Slosson, Ent. News 8: 237. Nomen nudum.

Plectiscus parvus Cushman, 1922. U. S. Natl. Mus., Proc. 61 (8): 22. ♀.

patula (Viereck). N. H., N. Mex., Wash.

Mesochorus areolatus Viereck, 1903. In Skinner, Amer. Ent. Soc., Trans. 29: 92. ♀. Preocc. by Provancher, 1883.

Mesochorus patulus Viereck, 1911. U. S. Natl. Mus., Proc. 40: 192. N. name for *M. areolatus* Viereck.

Genus APERILEPTUS Foerster

Aperileptus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 170.

Type-species: *Plectiscus albipalpus* Gravenhorst. Included and desig. by Foerster, 1871.

This is a moderately large genus, apparently of Neotropic, Holarctic, Oriental, and Ethiopian distribution.

gracilis (Provancher). Que., Maine, N. H., N. Y.

Phytodietus gracilis Provancher, 1875. Nat. Canad. 7: 331. ♀.

Proedrus delicatus Ashmead, 1897. In Slosson, Ent. News 8: 237. Nomen nudum.

Aperileptus clypeatus Ashmead, 1902. In Slosson, Ent. News 13: 6. Nomen nudum.

Aperileptus (!) *clypeatus* Cushman, 1922. U. S. Natl. Mus., Proc. 61 (8): 4. ♀.

Aperileptus delicatus Cushman, 1922. U. S. Natl. Mus., Proc. 61 (8): 5. ♀.

valerius (Davis). N. Y., n. Ill.

Catastenus valerius Davis, 1897. Amer. Ent. Soc., Trans. 24: 243. ♀.

Genus BLAPTICUS Foerster

Gnathochorisis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 152.

Type-species: *Gnathochorisis flavipes* Foerster. Monotypically included and desig. by Foerster, 1871.

Blapticus Foerster, 1868. Naturh. Ver. Reinlande, Verh. 25: 171.

Type-species: *Blapticus leucostomus* Foerster. Monotypically included and desig. by Foerster, 1871.

Laepserus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 205.

Type-species: *Blapticus crassulus* Thomson. Included and desig. by Perkins, 1962.

Acroblapticus Schmiedeknecht, 1911. Opusc. Ichtn., v. 4, p. 2173.

Type-species: *Blapticus dentifer* Thomson. Desig. by Viereck, 1914.

Townes (1971) said that this is a large genus, which is known from all regions except the Australian. According to Townes and Townes (1951) undescribed Nearctic species of this genus are transcontinental in the Canadian and Transitional Zones.

Taxonomy: Townes and Townes, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 342. —Perkins, 1962. Brit. Mus. (Nat. Hist.) Ent., Bul. 11: 410, 425, 434 (syn.). —Townes, 1971. Amer. Ent. Inst., Mem. 17: 200-201.

Genus SYMPLECIDIS Foerster

Symplecidis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 151.

Type-species: *Symplecidis alpicola* Foerster. Desig. by Viereck, 1914, from three species included by Foerster, 1871.

This is a large genus, apparently of Neotropic, Holarctic, Oriental, and Ethiopian distribution.

clipeator (Lundbeck). Greenland.

Hemiteles clipeator Lundbeck, 1897 (1896). Dansk Naturhist. For. (Kjobenhavn), Vidensk. Meddel. (for 1896), p. 228. ♂.

Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 106.

sitkensis (Ashmead). N. H., Alaska, B. C., Wash.

Stiboscopus sitkensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 172. ♂.

Genus CATASTENUS Foerster

Catastenus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 170

Type-species: *Catstenus femoralis* Foerster. Monotypically included and desig. by Foerster, 1871.

Townes (1971) indicated that *Catstenus* could be regarded as an aberrant section (a species group?) of *Symplexis*; he maintained its generic status pending further development of the classification of the subfamily.

This is a small Holarctic and Ethiopian genus. Townes and Townes (1951) said that "undescribed Nearctic species of this genus are transcontinental in the Transitional Zone." However, Townes (1971) said that it is an unresolved question whether there are in the Holarctic Region a number of closely related species or just a single variable one.

Taxonomy: Townes and Townes, 1951. In Muesebeck et al., U. S. Dept. Agr., Agr. Monog. 2: 342. —Townes, 1971. Amer. Ent. Inst., Mem. 17: 202.

Genus EUSTERINX Foerster

Holomeristus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 171.

Type-species: *Holomeristus tenuicinctus* Foerster. Monotypically included and desig. by Foerster, 1871.

Eusterinx Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 172.

Type-species: *Eusterinx oligomera* Foerster. Desig. by Viereck, 1914 from nineteen species included by Foerster, 1871.

Trestis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 174.

Type-species: *Trestis tricineta* Ashmead. By subsequent monotypy from inclusion by Ashmead, 1902.

Ischyracis Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 175. Apparently, Horstmann (1974) regarded *Ischyracis* as distinct from *Eusterinx*.

Type-species: *Catomicrus alpigenus* Strobl. Monotypically included and desig. by Perkins, 1962. The type-species is regarded as a synonym of *Eusterinx bispinosa* (Strobl), n. comb.

Catomicrus Thomson, 1888. Opusc. Ent. 12: 1291.

Type-species: *Catomicrus trichops* Thomson. Monotypic. The type-species is regarded as a synonym of *E. pusilla* (Zetterstedt).

Dallatorrea Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 205.

Type-species: *Dallatorrea armata* Ashmead. Monotypic.

Stroblia Schmiedeknecht, 1911. Opusc. Ichtn., v. 4, p. 2182. Preocc. by Pokorny, 1893.

Type-species: *Catomicrus alpigenus* Strobl. Monotypic.

Acanthostroblia Roman, 1925. Arkiv for Zool. 17A (4): 21. N. name for *Stroblia* Schmiedeknecht.

Cymodusoides Viereck, 1925. Canad. Ent. 57: 74.

Type-species: *Cymodusoides gracilis* Viereck. Orig. desig.

This is a large genus apparently known from the Neotropic, Holarctic, Oriental, and Ethiopian Regions.

armata (Ashmead). N. Y., N. C., Ont., Alaska, Wash., Oreg., Calif.

Dallatorrea armata Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 205. ♂.

Cymodusoides plesius Viereck, 1925. Canad. Ent. 57: 74. ♀.

gracilis (Viereck). Que.

Cymodusoides gracilis Viereck, 1925. Canad. Ent. 57: 74. ♀.

oligomera Foerster. N. H., N. Y., Pa.; Europe.

Eusterinx oligomera Foerster, 1871. Naturh. Ver. Rheinlande, Verh. 28: 109. ♂, ♀.

Diatra compressa Ashmead, 1902. In Slosson, Ent. News 13: 320. Nomen nudum.

Polyaulon compressum Cushman, 1922. U. S. Natl. Mus., Proc. 61 (8): 24. ♀.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 204 (syn.).

rufula (Provancher). Que., N. H., N. Y., N. J.

Phygadeuon rufulus Provancher, 1879. Nat. Canad. 11: 76. ♀. Possibly preocc. secondarily in *Phygadeuon* by Gmelin, 1790.

tenuicincta (Foerster). Que., N. H., Vt., N. Y., Ohio, n. Mich.; Europe.

Holomeristus tenuicinctus Foerster, 1871. Naturh. Ver. Rheinlande, Verh. 28: 81. ♀.

Mesoleptus fungicola Ashmead, 1894. In Webster, Cincinnati Soc. Nat. Hist., Jour. 17: 50. ♂.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 204 (syn.).

trifasciata (Ashmead). Alaska; e. U. S. S. R.

Catstenus trifasciatus Ashmead, 1899 (1898). In Jordan, Fur Seals and Fur-Seal Isls. No. Pacific, v. 4, p. 336. ♀. The type locality is Ostrov Mednyy (= Copper Isl.), Commander Isls., U. S. S. R.

Thestis(!) *tricincta* Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 187. ♀.

Catstenus alaskensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 240. ♂, ♀.

Genus **HELICTES** Haliday

Helictes Haliday, 1837. In Curtis, Guide Arrang. Brit. Ins., ed. 2, p. 106.

Type-species: *Ichneumon erythrostoma* Gmelin. Desig. by Westwood, 1840.

Myriarthrus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 172, 218. Unnecessarily proposed n. name for *Helictes* Haliday.

Paipila Cameron, 1905. Amer. Ent. Soc., Trans. 30: 358.

Type-species: *Paipila longipes* Cameron. Monotypic.

This is a large genus; it is Holarctic and Neotropic, the majority of the species occurring in Chile and the Andes Mts.

ruficornis Davis. N. Y., n. Ill.

Helictes ruficornis Davis, 1897. Amer. Ent. Soc., Trans. 24: 245. "♂" = ♀.

Genus **MEGASTYLUS** Schiodte

Megastylus Schiodte, 1839 (1838). Rev. et Mag. Zool. 1: 139.

Type-species: *Megastylus cruentator* Schiodte. Desig. by Foerster, 1871.

Idioxenus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 171.

Type-species: *Megastylus mediator* Schiodte. Included and desig. by Foerster, 1871.

The type-species is regarded as a synonym of *M. cruentator* Schiodte.

Dicolus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 171.

Type-species: *Dicolus insectator* Foerster. Desig. by Viereck, 1914, from four species included by Foerster, 1871. The type-species is regarded as a synonym of *M. impressor* Schiodte.

Megalostylus Schulz, 1906. Spolia Hym., p. 94. Emend.

Letosha Cameron, 1909. Bombay Nat. Hist. Soc., Jour. 19: 724.

Type-species: *Letosha longicoxis* Cameron. Monotypic.

Myriarthridea Viereck, 1914. U. S. Natl. Mus., Bul. 83: 97.

Type-species: *Myriarthrus cingulator* Foerster. Orig. desig.

Miomeroideis Kiss, 1924. Siebenbuerg. Ver. f. Naturw., Hermannstadt, Verh. u. Mitt. 72-74: 113.

Type-species: *Miomeroideis transsylvanicus* Kiss. Monotypic. This is a very large genus of Neotropic, Holarctic, Oriental, and Ethiopian distribution. The largest concentration of species is said to occur in the Neotropic Region.

caseyi (Ashmead). N. Y., N. J., Pa., Del., Va., e. N. C., n.e. Ga. Host: *Orfelina inops* (Coq.).

Spanotecnius caseyi Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 196. ♂.

flavopictus (Gravenhorst). Que., N. H., Ont., Wis., n. Ill., Minn., n. Utah., s. Calif.; Europe.

Plectiscus flavopictus Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 983. [male].

Megastylus lineator Schiodte, 1839 (1838). Rev. et Mag. Zool. 1: 139. "♀" = ♂.

Myriarthrus cingulator Foerster, 1871. Naturh. Ver. Rheinlande, Verh. 28: 103. ♂, ♀.

Mesoleptus (*Megastylus*?) *albocollaris* Cresson, 1868. Amer. Ent. Soc., Trans. 2: 100. ♀. N. syn.

Orthocentrus albofasciatus Provancher, 1883. Nat. Canad. 14: 13. ♀. N. syn.

Aperileptus pleuralis Ashmead, 1902. In Slosson, Ent. News 13: 321. Nomen nudum.

Megastylus ashmeadi Cushman, 1922. U. S. Natl. Mus., Proc. 61 (8): 18. ♀. N. syn.

Taxonomy: Davis, 1897. Amer. Ent. Soc., Trans. 24: 246. —Townes, 1945. Amer. Ent. Soc., Mem. 11: 540 (syn.). —Townes and Townes, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 343. —Rossem, 1974. Tijdschr. v. Ent. 117: 278-279 (syn.).

SUBFAMILY ORTHOCENTRINAE

The size of this subfamily is moderate; although only seven genera are currently recognized, three of them are large and two are moderately large. According to Townes (1971) most of the species occurring outside the Holarctic Region are undescribed. Some of the species synonymy indicated in the unpublished revision of Smith (1958) was published by Smith (1965); in cases where they appear reliable unpublished species synonymies and changes in species nomenclature indicated by Smith in her dissertation are published here (the majority of which involve types in the U. S. Natl. Museum collection). Mycetophilidae are apparently the usual hosts.

Revision: Davis, 1897. Amer. Ent. Soc., Trans. 24: 219-226. —Smith, 1958. Rev. Subfam. Orthocentrinae Amer. No. of Mexico; unpublished Ph. D. dissertation, Univ. of Wis., 373 pp., 8 pl. (261 figs.).

Taxonomy: Smith, 1965. In Townes, Momoi, and Townes, Amer. Ent. Inst., Mem. 5: 398, 399, 400, 401, 402, 403. —Townes, 1971. Amer. Ent. Inst., Mem. 17: 208-216 (genera of world).

Genus ORTHOCENTRUS Gravenhorst

Orthocentrus Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 358.

Type-species: *Orthocentrus fulvipes* Gravenhorst. Desig. by Westwood, 1840.

Tapinops Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 160.

Type-species: *Orthocentrus californicus* Ashmead. By subsequent monotypy from inclusion by Ashmead, 1896.

Atmetus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 160.

Type-species: *Atmetus tetrazonatus* Ashmead. Desig. by Viereck, 1914, from three species included by Ashmead, 1896.

Phaenosemus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 160.

Type-species: *Phaenosemus sitkensis* Ashmead. By subsequent monotypy from inclusion by Ashmead, 1902.

Erochiscus Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 96.

Type-species: *Erochiscus pusillus* Walsh. Monotypic.

Pachyonyx Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 100. Nomen nudum (published in synonymy).

Pachyonyx Viereck, 1914. U. S. Natl. Mus., Bul. 83: 108. Preocc. by Schoenherr, 1837.

Type-species: *Orthocentrus trifasciatus* Walsh. Monotypic and orig. desig.

Orthocentrellus Benoit, 1954. Rev. de Zool. et de Bot. Africaines 50: 1.

Type-species: *Orthocentrellus elongaticornis* Benoit. Monotypic and orig. desig.

This large genus is worldwide in distribution. According to Townes (1971) it includes most of the larger species of the subfamily.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 211-212.

asper (Gravenhorst). Que. w. to Yukon and Alaska, s. to S. C., Kans., Colo., Ariz., and Calif.; Europe.

Erochus asper Gravenhorst, 1829. Ichn. Europaea, v. 1, p. 694. [female].

Orthocentrus discolor Holmgren, 1858 (1856). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 332. ♂, ♀.

Phaenosemus sitkensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 231. ♂.

Taxonomy: Pfankuch, 1913. Deut. Ent. Ztschr. (for 1913), p. 180 (syn.). —Townes, 1971. Amer. Ent. Inst., Mem. 17: 209 (syn.).

cupulatus Smith. N. W. T. Alaska; e. U. S. S. R.

Atmetus insularis Ashmead, 1899 (1898). In Jordan, Fur Seals and Fur-Seal Isls. No. Pacific, v. 4, p. 337. ♂. Preocc. in *Orthocentrus* by Ashmead, 1894. The type locality is Ostrov Medny (=Copper Isl.), Commander Isls., U. S. S. R.

Orthocentrus cupulatus Smith, 1965. In Townes, Momoi, and Townes, Amer. Ent. Inst., Mem. 5: 399. N. name for *A. insularis* Ashmead.

Taxonomy: Roman, 1909. *In* Hamberg, Naturw. Untersuch. Sarekgebirges Schwedisch-Lappland, v. 4, p. 352 (syn.). —Smith, 1958. Rev. Subfam. Orthocentrinae Amer. No. of Mexico; unpublished Ph. D. dissertation, Univ. of Wis., p. 153, 157-158.

decoratus Townes. Calif.

Atmetus californicus Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 204. ♀. Preocc. in *Orthocentrus* by Ashmead, 1890.

Orthocentrus decoratus Townes, 1945. Amer. Ent. Soc., Mem. 11: 546. N. name for *A. californicus* Ashmead.

frontator (Zetterstedt). N. S. w. to Yukon and Alaska, s. to Ga., Kans., Colo., and n.e. Calif.; Eurasia.

Tryphon frontator Zetterstedt, 1838. Insecta Lapponica Hym., p. 389. [female].

Erochiscus pusillus Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 97. "♂" = ♀.

Alomya abdominalis Provancher, 1875. Nat. Canad. 7 (4): 121. ♂, ♀. N. syn.

Orthocentrus Canadensis Provancher, 1875. Nat. Canad. 7 (5): 142. ♂. N. syn.

Orthocentrus californicus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 442. ♀. N. syn.

Orthocentrus medialis Davis, 1897. Amer. Ent. Soc., Trans. 24: 224. ♀. N. syn.

Camerotops (!) *asperus* Davis, 1897. Amer. Ent. Soc., Trans. 24: 226. ♀. N. syn.

Atmetus pectoralis Ashmead, 1906. *In* Slosson, Ent. News 17: 324. Nomen nudum.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 209 (syn.).

fulvipes Gravenhorst. Nearctic Region; Eurasia. Nearctic localities were not indicated by Townes (1971).

Orthocentrus fulvipes Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 363. ♂.

Orthocentrus carinatus Uchida, 1932. Hokkaido Imp. Univ., Faculty Agr., Jour. 33: 211. ♂. Preocc. by Provancher, 1879.

Orthocentrus badifrons Uchida, 1942. Insecta Matsumurana 16: 125. ♂, ♀.

Taxonomy: Smith, 1965. *In* Townes, Momoi, and Townes, 1965. Amer. Ent. Inst., Mem. 5: 399 (syn.). —Townes, 1971. Amer. Ent. Inst., Mem. 17: 209 (syn.).

repentinus Holmgren. Greenland; Europe.

Orthocentrus repentinus Holmgren, 1858 (1856). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 327. ♂, ♀.

Taxonomy: Roman, 1930. Ann. and Mag. Nat. Hist. (10) 5: 284.

rugulosus (Provancher). Que.

Glypta rugulosa Provancher, 1883. Nat. Canad. 14: 14. "♂" = ♀ ? Smith (1958) said that the sex of the lectotype was uncertain, but more likely to be female than male.

Taxonomy: Smith, 1958. Rev. Subfam. Orthocentrinae Amer. No. of Mexico; unpublished Ph. D. dissertation, Univ. of Wis., p. 92-94, 357.

spurius Gravenhorst. N. S. w. to N. W. T. and Alaska, s. to Maine, Mich., Colo., and Calif.; Eurasia.

Orthocentrus spurius Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 362. ♀.

Orthocentrus protuberans Holmgren, 1858 (1856). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 333. ♂, ♀.

Taxonomy: Smith, 1965. *In* Townes, Momoi, and Townes, Amer. Ent. Inst., Mem. 5: 400 (syn.).

stigmaticus Holmgren. Newfoundland (Labrador) w. to Alaska, s. to S. C., La., Colo., Ariz., and Calif.; Eurasia.

Orthocentrus stigmaticus Holmgren, 1858 (1856). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 325. ♂, ♀.

Orthocentrus stigmaticus Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 101. "♀" = ♂.

Orthocentrus stigmaticus f. *borealis* Roman, 1915. *In* Spengel, Zool. Jahrb., Abt. f. System., Geog., u. Biol. Tiere 39: 92. ♂, ♀. Syn.?

Taxonomy: Roman, 1925. Ent. Meddel. 14: 425. —Townes, 1971. Amer. Ent. Inst., Mem. 17: 209 (syn.).

tetrazonatus (Ashmead). N. S. w. to Alaska, s. to S. C., Ala., Colo., Utah, and Calif.

Atmetus tetrazonatus Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 204. ♀.

trifasciatus Walsh. Ill.?*Orthocentrus trifasciatus* Walsh, 1873. Acad. Sci. St. Louis, Trans. 3: 100. ♂, ♀.**Genus PICROSTIGEUS Foerster***Picrostigeus* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 159.Type-species: *Orthocentrus setiger* Brischke. Desig. by Viereck, 1912, from three species included by Thomson, 1897.

This is a small Holarctic genus. Smith (1958) indicated that there are four undescribed Nearctic species.

Taxonomy: Smith, 1958. Rev. Subfam. Orthocentrinae Amer. No. of Mexico; unpublished Ph. D. dissertation, Univ. of Wis., p. 181-192.

Genus STENOMACRUS Foerster*Synoplus* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 159.Type-species: *Synoplus brevipennis* Ashmead. Desig. by Viereck, 1902, from two species included by Ashmead, 1902.*Mnesidacus* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 159.Type-species: *Mnesidacus apicalis* Ashmead. By subsequent monotypy from inclusion by Ashmead, 1896.*Hypoleptus* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 159.Type-species: *Hypoleptus columbianus* Ashmead. By subsequent monotypy from inclusion by Ashmead, 1896.*Deleter* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 160.Type-species: *Deleter obscurus* Davis. Desig. by Viereck, 1914, from three species included by Davis, 1897.*Stenomacrus* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 160.Type-species: *Orthocentrus silvaticus* Holmgren. Desig. by Viereck, 1912, from 37 species included by Thomson, 1898.*Camaratops* Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 160.Type-species: *Neurateles ulmicolus* Ashmead. Desig. by Viereck, 1914, from four species included by Davis, 1897.

This is a large genus of worldwide distribution.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 212-213 (syn.).

americanus (Ashmead). Newfoundland (Labrador) w. to B. C., s. to Md., Ill., Kans., Colo., and Calif.*Neurateles americanus* Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 203. ♀.*Deleter obscurus* Davis, 1897. Amer. Ent. Soc., Trans. 24: 221. ♂.**brevipennis** (Ashmead). Alaska. Ecology: Smith (1958) studied 35 females collected on flowers of *Senecio*.*Synoplus brevipennis* Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 226. ♀.*Synoplus pleuralis* Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 227. ♀.*Hypoleptus glacialis* Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 228. "♂, ♀" = ♂. N. syn.Ashmead said: "Type. — Cat. No. 5673, ...Muir Inlet [Alaska], June 12." The only specimens to be found in the U. S. Natl. Museum collection bearing type no. 5673 are two conspecific males from St. Paul Isl., Alaska; one of these bears Ashmead's label identifying it as a male of *Hypoleptus glacialis*. No specimens from Muir Inlet match the original description and none bear an Ashmead label identifying them as *H. glacialis*.

Biology: Smith, 1958. Rev. Subfam. Orthocentrinae Amer. No. of Mexico; unpublished Ph. D. dissertation, Univ. of Wis., p. 308.

californicus (Ashmead). Newfoundland (Labrador) w. to B. C., s. to Md., Kans., Colo., Ariz., and Calif. Host: "*Cecidomyia* on *Salix scouleriana* var. *flavescens*."*Brephoctonus californicus* Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 202. ♂.

- Taxonomy: Smith, 1958. Rev. Subfam. Orthocentrinae Amer. No. of Mexico; unpublished Ph. D. dissertation, Univ. of Wis., p. 316-322.
- columbianus** (Ashmead). Que., N. W. T., and Yukon, s. to Va., Ill., Colo., and Wash.
Hypoleptus columbianus Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 203. ♂.
- dubiosus** (Ashmead). Colo., Alaska.
Neurateles dubiosus Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 228. ♂.
- femoralis** (Holmgren). Newfoundland (Labrador), N. W. T., Yukon, and Alaska, s. to Va., Ill., Colo., Ariz., and Oreg.; Eurasia.
Orthocentrus silvaticus Holmgren, 1858 (1856). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 342. ♂, ♀.
Orthocentrus femoralis Holmgren, 1858 (1856). Svenska Vetensk.-Akad. Handl. (n. f.) 1: 346. ♂, ♀.
Orthocentrus nigricoxis Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 369. ♀.
Mnesidaeus(!) *apicalis* Ashmead, 1898. Amer. Ent. Soc., Trans. 23: 202. ♀.
Atmetus nigrinus Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 204. ♀. N. syn.
Stenomacrus intritus Davis, 1897. Amer. Ent. Soc., Trans. 24: 225. ♂. N. syn.
Stenomacrus borealis Ashmead, 1899 (1898). In Jordan, Fur Seals and Fur-Seal Isls. No. Pacific, v. 4, p. 338. ♀. N. syn.
Deleter flavifrons Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 229. ♂. N. syn.
Orthocentrus nigrinus Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 231. ♂. Preocc. in *Stenomacrus* by Ashmead, 1896. N. syn.
- Taxonomy: Smith, 1958. Rev. Subfam. Orthocentrinae Amer. No. of Mexico; unpublished Ph. D. dissertation, Univ. of Wis., p. 223-231. — Townes, 1971. Amer. Ent. Inst., Mem. 17: 209.
- hastatus** Davis. Northern Calif. Known only from the holotype which was collected in Siskiyou Co., Calif.
Stenomacrus hastatus Davis, 1897. Amer. Ent. Soc., Trans. 24: 225. ♀.
- kincaidi** (Ashmead). Southwestern Alaska.
Deleter kincaidi Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 229. ♂, ♀.
- laticollis** (Holmgren). Greenland; n.w. Asia.
Orthocentrus laticollis Holmgren, 1883. Ent. Tidskr. 4: 158. ♀.
- mellipes** (Provancher). Que. Known only from the lectotype.
Bassus mellipes Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 429. ♀.
- Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 551 (syn.). — Smith, 1958. Rev. Subfam. Orthocentrinae Amer. No. of Mexico; unpublished Ph. D. dissertation, Univ. of Wis., p. 322-324.
- monticola** (Cushman). Newfoundland (Labrador), N. W. T., and Alaska, s. to N. Y., Colo., and Wash.
Hypoleptus monticola Ashmead, 1897. In Slosson, Ent. News 8: 237. Nomen nudum.
Hypolepus(!) *alticola* Ashmead, 1906. In Slosson, Ent. News 17: 324. Nomen nudum.
Hypoleptus monticola Cushman, 1922. U. S. Natl. Mus., Proc. 61 (8): 16. ♀.
- premitus** (Davis). Que. w. to Yukon and Alaska, s. to Fla., Ill., Colo., and Wash.
Camerotops(!) *premitus* Davis, 1897. Amer. Ent. Soc., Trans. 24: 226. "♂" = ♀.
Phaenosenus alticola Ashmead, 1897. In Slosson, Ent. News 8: 237. Nomen nudum.
Camerotops kodiakensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 232. ♀. N. syn.
Brephoctonus hygrotrecha Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Survey Bul. 22: 305. ♂, ♀. N. syn.
Stenomacrus alticola Cushman, 1922. U. S. Natl. Mus., Proc. 61 (8): 27. ♀.
- Taxonomy: Smith, 1958. Rev. Subfam. Orthocentrinae Amer. No. of Mexico; unpublished Ph. D. dissertation, Univ. of Wis., p. 309-314.
- terebrator** Roman. Greenland.
Stenomacrus terebrator Roman, 1934. Ann. and Mag. Nat. Hist. (10) 14: 608. ♀.
- ulmicola** (Ashmead). N. H. s. to Fla., w. to Wis., Iowa, Kans., and Okla. Host: "Leaf miner on elm."
Brephoctonus flavosus Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 202. ♂.

- Neurateles ulmicola* Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 203. ♀.
Neurateles lirioidendri Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 203. ♂, ♀.
undulatus (Davis). Northern Ill.
Deleter undulatus Davis, 1897. Amer. Ent. Soc., Trans. 24: 221. ♀ (♂ misdet.).

Genus LEIPAULUS Townes

Leipaulus Townes, 1945. Amer. Ent. Soc., Mem. 11: 552.

Type-species: *Deleter suffuscus* Davis. Monotypic and orig. desig.

This is a genus of moderate size; Townes (1971) had seen 20 species. The genus is known from the Holarctic, Oriental, Australian, and Ethiopian Regions. There is at least one undescribed Nearctic species.

Taxonomy: Townes, 1958. Ent. Soc. Wash., Proc. 60: 221 (syn.). — Townes, 1971. Amer. Ent. Inst., Mem. 17: 215 (name resurrected).

ridibundus (Gravenhorst). Nearctic Region; Europe.

Orthocentrus ridibundus Gravenhorst, 1829. Ichn. Europaea, v. 3, p. 366. ♂.

Taxonomy: Townes, 1971. Amer. Ent. Inst., Mem. 17: 215 (distribution).

suffuscus (Davis). N. S. w. to B. C., s. to S. C., La., Colo., Ariz., and Calif.

Deleter suffuscus Davis, 1897. Amer. Ent. Soc., Trans. 24: 221. ♂.

Genus PLECTISCUS Gravenhorst

Plectiscus Gravenhorst, 1829. Ichn. Europaea, v. 2, p. 978.

Type-species: *Plectiscus impurator* Gravenhorst. Desig. by Westwood, 1840.

Brephoctonus Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 159.

Type-species: *Plectiscus impurator* Gravenhorst. Monotypically included and desig. by Foerster, 1871.

According to Townes (1971) this genus is Neotropical, Holarctic, and Oriental; 15 species were known to him, 14 of them being either undescribed or unidentified.

Taxonomy: Townes, 1958. Ent. Soc. Wash., Proc. 60: 221. — Townes, 1971. Amer. Ent. Inst., Mem. 17: 215-216.

Genus NEURATELES Ratzeburg

Neurateles Ratzeburg, 1848. Ichn. d. Forstins., v. 2, p. 86.

Type-species: *Neurateles papyraceus* Ratzeburg. Monotypic.

Neuratelus(!) Foerster, 1868. Naturh. Ver. Rheinlande, Verh. 25: 159, 218.

This is a Neotropical and Holarctic genus of moderate size.

alaskensis (Ashmead), n. comb. N. H., N. W. T., Colo., Alta., Alaska.

Hypoleptus alaskensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 227. ♀ (♂ misdet.). A female in the U. S. Natl. Museum collection is here selected as lectotype. It is labeled "8-22, [18]97, St. Paul Isl., Alaska, Type No. 5672, *Hypoleptus alaskensis* Ashm. [written by Ashmead], Lectotype, *Hypoleptus alaskensis* Ashmead, Revision L. K. Smith [written by Lois K. Smith]."

Taxonomy: Townes, 1945. Amer. Ent. Soc., Mem. 11: 549 (identification apparently based on a specimen which was then a syntype). — Smith, 1958. Rev. Subfam. Orthocentrinae Amer. No. of Mexico; unpublished Ph. D. dissertation, Univ. of Wis., p. 350-352.

leucopsis (Ashmead). Colo.

Orthocentrus leucopsis Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 24. ♂.

UNPLACED TAXA OF ICHNEUMONIDAE

Anomalon laterale Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 175. ♀.
 "L'Amerique sept.; Bastard."

Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 104.

Asymmictus nigrofrons Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 325. ♀. "Agricultural College, Michigan."

Atractodes provancheri Dalla Torre, 1902. Cat. Hym., v. 3, p. 723. N. name for *A. singularis* Provancher (which see).

Atractodes rufipes Provancher, 1874. Nat. Canad. 6: 151. ♂, ♀. Que.

Taxonomy: Barron, 1975. Nat. Canad. 102: 551.

Atractodes singularis Provancher, 1876. Nat. Canad. 8: 328. ♂. Que. Preocc. by Foerster, 1876; replaced by *A. provancheri* Dalla Torre (which see).

Taxonomy: Barron, 1975. Nat. Canad. 102: 568.

Bassus areolatus Provancher, 1874. Nat. Canad. 6 (1): 31 (key); 6 (2): 58. ♀. Preocc. by Holmgren, 1856.

Taxonomy: Barron, 1975. Nat. Canad. 102: 428-429.

Campoplex? Arcticus Curtis, 1853. In Ross, Narrative of Second Voyage in Search of a No.-W. Passage 1829-33, App., p. lxii. sex not indicated. Arctic America.

Taxonomy: Townes, 1961. Ent. Soc. Wash., Proc. 63: 105.

Cratichneumon Davisi Bradley, 1904. Ztschr. System. Hym. Dipt. 4: 107. ♀. Colo.

Cremastus piceus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 176. ♀. Bosque Co., Tex. The holotype was presumably to have been deposited in the U. S. Natl. Museum collection, but has not been found.

Taxonomy: Cresson, 1916. Amer. Ent. Soc., Mem. 1: 49.

Habronyx? flavistigma Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 362. ♂. N. Y.

Hemiteles cincticornis Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 21. ♀. Colo. Host: *Apanteles laeviceps* Ash. The type locality was stated to be Cusack Ranch, but the type specimens of *Apanteles laeviceps* (described by Ashmead in the same paper) are labeled: West Cliff, Colo.

Hemiteles texanus Ashmead, 1890 (1889). U. S. Natl. Mus., Proc. 12: 404. ♀. Tex. No type specimen can be found; the species was entered by Ashmead in the U. S. Natl. Museum type catalog under no. 2011, and may have been so labeled by Ashmead, because in his manuscript for his 1900 work on the classification of Ichneumonoidea Ashmead recorded the name of the species and its type catalog number.

Ichneumon paradoxus Provancher, 1882. Nat. Canad. 13 (no. 154): 306 (key); 13 (no. 155): 325. ♀. Que.

Taxonomy: Barron, 1975. Nat. Canad. 102: 526-527.

Ichneumon quadri-punctatus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 33. ♂. Ont. Preocc. by Schrank, 1871.

Taxonomy: Barron, 1975. Nat. Canad. 102: 539.

Limneria illepidata Cresson, 1872. Amer. Ent. Soc., Trans. 4: 172. ♂. Tex.

Mesoleptus fasciatus Provancher, 1885. Canad. Ent. 17: 116. ♂. Southwestern B. C.

Taxonomy: Barron, 1975. Nat. Canad. 102: 469.

Mesostenus rufotinctus Provancher, 1874. Nat. Canad. 6: 301. ♂. Que.

Taxonomy: Barron, 1975. Nat. Canad. 102: 555.

Orthocentrus lucens Provancher, 1879. Nat. Canad. 11: 280. ♀. Que.

Taxonomy: Smith, 1958. Rev. Subfam. Orthocentrinae Amer. No. of Mexico; unpublished Ph. D. dissertation, Univ. of Wis., p. 360-361. — Barron, 1975. Nat. Canad. 102: 500.

Pezomachus thripites Taylor, 1860. Amer. Agr. 19: 300. ♀. No locality.

Phygadeuon excavatus Provancher, 1874. Nat. Canad. 6: 285. ♀. Que.

Taxonomy: Barron, 1975. Nat. Canad. 102: 468.

Tryphon exobscurus Walkley, 1958. In Krombein, U. S. Dept. Agr., Agr. Monog. 2, sup. 1, p. 62. Unnecessary n. name for *Stilpnus obscurus* Cresson (which see).

Stilpnus obscurus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 259. ♂. Colo. Formerly preocc. secondarily in *Tryphon* by *T. obscurus* Stephens, 1835. The replacement name *Tryphon exobscurus* Walkley (which see) was proposed while *S. obscurus* stood as "*Tryphon obscurus* (Cresson)" among the unplaced species of Ichneumonidae; therefore, *T. exobscurus* is an unnecessarily proposed replacement name.

UNPLACED NOMINA NUDA OF ICHNEUMONIDAE

The following *nomina nuda* are not placeable in the synonymy of described species because they have not been associated with particular specimens since they were published. Most of them probably pertain to specimens which by now have been destroyed.

Unplaceable *nomina nuda* published by Harris (1835): *Cryptus annulipes*, *C. attractus*, *C. bucephalus*, *C. calceatus*, *C. cardinalis*, *C. clyta*, *C. crescentus*, *C. ectypus*, *C. facetus*, *C. facilis*, *C. isochronus*, *C. latus*, *C. leucotelus*, *C. mellipes*, *C. palmapectus*, *C. pleuriticus*, *C. polyspeirus*, *C. recurvulus*, *C. spinulosus*, *C. subspinosus*, *C. tennellus*, *C. versicolor*, *Ichneumon* (*Ichneumon*) *ales*, *I. (I.) anxifer*, *I. (I.) (Trogus) atratus*, *I. (I.) baculus*, *I. (I.) biarquatus*, *I. (I.) dimelampus*, *I. (I.) metathoracicus*, *I. (I.) orbitalis*, *I. (I.) petiolatus*, *I. (I.) plantaris*, *I. (I.) platiceps*, *I. (I.) spatiosus*, *I. (I.) stolphorus*, *I. (I.) trichocerus*, *I. (I.) wau*.

Miscellaneous unplaceable *nomina nuda* published in the references, cited: *Anomalon Cecropiae* Harris (1833), *Bathymetis regularis* Ashmead (in Slosson, 1900), *B. washingtonensis* Ashmead (in Slosson, 1906), *Campoplegidea* (*Viereckiana*) *triangularis* Viereck (1926), *Campoplex paniscus* Osborn (1892), *Centeterus suturalis* Ashmead (in Riley and Howard, 1890, p. 152), *Cremastus fumipennis* Ashmead (1900, p. 584), *Cryptus propitius* "Cr." Ashmead (1890, p. 43), *Eiphosoma femorata* "Cress." Ashmead (1900, p. 580), *Erochoides borealis* "Cress." Evans (1896), *Hemiteles mesochori* "Ashm." Crevecoeur (1922), *Hemiteles orgyiae* "Riley" Ashmead (1890, p. 43), *Ichneumon alternator* "S." Harris (1833), *I. araneum* Clarkson (1890), *I. basiator* "S." Harris (1833), *I. cingor* "S." Harris (1833), *Ichyracis* (!) *americana* Ashmead (in Slosson, 1906), *Lampronota succincta* "Cr." Riley and Howard (1890, p. 464), *Limmeria oligiae* Ashmead (in Riley and Howard, 1890, p. 158), *Megarhyssa magnifica* Viereck (1910), *Mesochorus? chrysopae* Ashmead (in Riley and Howard, 1890, p. 156), *Mesoleius bicolor* Davis (in Slosson, 1894), *Ophion imbecilis* "S." Harris (1833), *Polysphincta phycitis* Riley (in Riley and Howard, 1890, p. 464), *Rhythmonotus bilineatus* Ashmead, 1900, p. 581, *Scambus monta* "Cress." Washburn (1918), *Sinophorus johnsoni* Ashmead (1900, p. 581), *Spilocryptus lividicorpus* "Cress." Procter (1938), *Spudastica rufipes* Ashmead (1900, p. 581), *Thyreodon costale* "Cress." Viereck (1928).

Taxonomy: Harris, 1833; 1835. In Hitchcock, Rpt. Geol. Min. Bot. Zool. Mass., p. 587; ed. 2, p. 584-585. — Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 43. — Clarkson, 1890. Canad. Ent. 22: 122. — Riley and Howard, 1890. U. S. Dept. Agr., Insect Life 3: 151-158, 460-464. — Osborn, 1892. Iowa Agr. Expt. Sta., Bul. 18: 515. — Slosson, 1894. Ent. News 5: 4. — Evans, 1896. Canad. Ent. 28: 11. — Ashmead, 1900. In Smith, N. J. State Bd. Agr., Ann. Rpt. 27, sup., p. 563-585. — Slosson, 1900; 1906. Ent. News 11: 319; 17: 324. — Viereck, 1910. In Smith, N. J. State Mus., Ann. Rpt. (for 1909), p. 627. — Washburn, 1918. Minn. State Ent., Ann. Rpt. 17: 172. — Crevecoeur, 1922. Kans. Acad. Sci., Trans. 30: 386. — Viereck, 1926. Roy. Soc. Canada, Proc. and Trans. (3) 20 (5): 178. — Viereck, 1928. N. Y. State Mus. Bul. 274: 185. — Procter, 1938. Biol. Survey Mt. Desert Region, v. 6, p. 402.

Family STEPHANIDAE

BY ROBERT W. CARLSON

This small family is worldwide in distribution, but with species apparently most numerous in the tropic and subtropic parts of the world. They are parasites of coleopterous and hymenopterous wood borers.

Revision: Elliot, 1922. Zool. Soc. London, Proc. 92: 705-831 (spp. of world, largely from literature). — Townes, 1949. U. S. Natl. Mus., Proc. 99: 361-370.

Genus SCHLETTERERIUS Ashmead

Schlettererius Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 150.

Type-species: *Stephanus cinctipes* Cresson. Monotypic and orig. desig.

Only a single species is known.

cinctipes (Cresson). Southwestern S. Dak., n. Idaho, and s. B. C. s. to s.e. Ariz. and s. Calif.; Australia (Tasmania). Ecology: Kirk (1975) reared the species from *Pinus ponderosa*, *Picea engelmanni*, and *Abies concolor* infested by species of *Sirex*, *Urocerus*, and *Xeris*. The species has also emerged from *Pseudotsuga menziesii*. Host: *Sirex noctilio* F.,

Siricidae. Taylor (1967) developed a laboratory culture in Tasmania on *Sirex noctilio* from field collected *cinctipes* adults shipped from Calif. Additional material was imported from Ariz. and N. Mex., and *cinctipes* has been released and established in Tasmania as a parasite of *Sirex noctilio* (Taylor, 1977, p. 430). *S. noctilio* does not occur within the natural range of *Schlettererius cinctipes*.

Stephanus cinctipes Cresson, 1880. Amer. Ent. Soc., Trans. 8: xviii in Proc. ♀.

Biology: Taylor, 1967. Austral. Ent. Soc., Jour. 6: 13-19 (life history, behavior, egg, larva). — Kirk, 1975. Pan-Pacific Ent. 51: 58-59. — Taylor, 1977 (1976). Entomophaga 21: 429-440 (introduction and establishment of various parasitic Hym. on *Sirex noctilio*).

Genus MEGISCHUS Brulle

Megischus Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 537.

Type-species: *Megischus annulator* Brulle. Desig. by Viereck, 1914. The type-species is regarded as a synonym of *M. furcatus* (Lepeletier and Serville).

Bothrioceros Sichel, 1860. Soc. Ent. de France, Ann. (3) 8: 759.

Type-species: *Bothrioceros europaeus* Sichel. Desig. by Viereck, 1914.

Hemistephanus Enderlein, 1906. Stettin. Ent. Ztg. 67: 301.

Type-species: *Stephanus macrurus* Schletterer. Orig. desig.

According to Townes (1949, stephanid revision, p. 363) *Megischus* is a genus of about 40 valid species and is pantropic in distribution.

arizonicus Townes. Southeastern Ariz.; n.w. Mexico.

Megischus arizonicus Townes, 1949. U. S. Natl. Mus., Proc. 99: 368. ♂, ♀.

bicolor (Westwood). Mass. w. to s. Ont., n. Iowa, and e. Utah., s. to s. Fla., s. Tex., s. Ariz., and s. Calif. Ecology: Specimens are recorded as having emerged from *Quercus*, *Carya*, *Cercidium*, and *Pinus*. Host: Buprestid in *Cercidium torreyanum*.

Stephanus bicolor Westwood, 1841. Ann. Nat. Hist. 7: 538. ♀.

Stephanus Sickmanni Schletterer, 1889. Berlin. Ent. Ztschr. 33: 152. ♀. N. syn.

Megischus floridanus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 349. ♂, ♀.

Megischus canadensis Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 349. ♀. N. syn.

Stephanus Sickmannii Dalla Torre, 1901. Cat. Hym., v. 3, p. 9. Emend.

Biology: Townes, 1949. U. S. Natl. Mus., Proc. 99: 367 (behavior and ecology).

brunneus (Cresson). Southern Fla.; Cuba.

Megischus brunneus Cresson, 1865. Ent. Soc. Phila., Proc. 4: 84. ♂, ♀.

Stephanus brunneus Dalla Torre, 1901. Cat. Hym., v. 3, p. 6. Emend.

californicus Townes. Northern Calif. s. to s. Calif.

Megischus californicus Townes, 1949. U. S. Natl. Mus., Proc. 99: 364. ♂, ♀.

texanus Cresson. Southwestern Okla., s. Tex., Ariz., s. Calif.; n.w. Mexico.

Megischus texanus Cresson, 1872. Amer. Ent. Soc., Trans. 4: 190. ♀.

Superfamily CHALCIDOIDEA

By GORDON GORDH

The Chalcidoidea are among the most difficult groups of Hymenoptera to identify because of their small size and the lack of adequate keys to the North American species. Several species vie for the distinction of being the smallest insect (about 0.2 mm long), and most species are less than 3-4 mm long. The characters used to distinguish chalcidoids from other Hymenoptera include the presence of a prepectus, failure of the pronotum to meet the tegula, 13 or fewer segments comprising the geniculate antenna, and drastically reduced wing venation.

Ashmead (1904) recognized 14 families and provided the first comprehensive modern classification of the Chalcidoidea. Despite its many errors, this was a prodigious work and remarkable considering the primitive optical equipment and state of knowledge about the Chalcidoidea at that time. Nikol'skaya (1952) elevated the number of families to 24, and Boucek and Hoffer (1957) (subsequently translated by Peck, 1964) recognized 18 families. In this catalog Burks has reduced the number of families to eleven. Casual thought may lead one to wonder why there is so much inconsistency among workers regarding higher classification of chalcidoids. These classifications are based on external morphology, and the chalcidoids are exceedingly plastic morphologically. This plasticity generates differences of opinion over the limits of higher taxa because workers weight characters differently.

Chalcidoids are found in all zoogeographical regions, in all terrestrial habitats, and all families are found in each zoogeographic region. Despite their omnipresence, chalcidoids remain one of the poorest known superfamilies. Taxonomically, the western Palearctic fauna is best known, followed by the Nearctic. The remainder of the zoogeographical regions (Neotropical, Ethiopian, Australian, and Oriental) are almost completely unknown with respect to their endemic faunas. Much of our knowledge of chalcidoids stems from species which are associated with agriculture.

The body size and searching habits of chalcidoids make them suitable for fossilization in resinous amber, but fossil records of the Chalcidoidea are incomplete. Fewer than 50 species are known, and these belong to less than half of the chalcidoid families. The most comprehensive accounts of fossil chalcidoids are by Brues (1910), Doutt (1973), and Yoshimoto (1975). The last study provides a summary of knowledge about fossil chalcidoids. Yoshimoto (1975) reports that mymarids, trichogrammatids, and tetracampids are referable to the Cretaceous Period (70-90 million years before present).

Owing to the paucity of knowledge about fossil chalcidoids and their morphological plasticity, the relationship of this superfamily to other parasitic Hymenoptera has not been conclusively established. We are not certain that the Chalcidoidea are monophyletic in the Hennigian sense, although some investigators have that opinion. An interpretation of chalcidoid phylogeny based on the known fossil record is provided by Yoshimoto (1975).

The actual numerical dimension of the Chalcidoidea can only be speculated. The ichneumonid specialist Henry Townes (1969) has estimated that there are 60,000 species of Ichneumonidae.

DeBach (1974) has estimated that somewhere between 70-90 percent of the parasitic Hymenoptera remain to be described. I believe that the Chalcidoidea will ultimately be recognized as larger than the Ichneumonidae. There are some who would disagree with this estimate, but their estimates are based on impressions developed from examining species that repeatedly have been submitted for identification. These species mostly are associated with the agroecosystem and represent only a portion of the total chalcidoid fauna. My primary interest in making these assertions is to stimulate research on the Chalcidoidea because they are a fertile area for investigations in biology, behavior, ecology, and systematics.

Chalcidoids have diverse and frequently specialized feeding habits. Most species of chalcidoids are parasitic, but phytophagy probably has evolved several times in the Chalcidoidea because it is found in several distantly related taxa and many unrelated species of plants serve as hosts. Phytophagy is found most frequently in association with gall-forming habits, but the evolutionary significance of this observation remains unknown.

Agaonids demonstrate the most intimate expression of phytophagy in the Chalcidoidea. This group is poorly represented in North America because all agaonids develop in fig seeds (*Ficus* spp.), and these plants occur naturally only in tropical and subtropical climates. All figs are dependent on agaonids for pollination, and agaonids can only develop within the receptacles of *Ficus*. Host specificity seems to be the trend in agaonids with each species of fig having its own agaonid for pollination (Ramirez, 1970 a,b; Grandi, 1961). Numerous other chalcidoids are associated with *Ficus* asinquillines (Hill, 1967 a,b).

Other taxa of chalcidoids with phytophagous species include the Eurytomidae, Torymidae, brachyscelidiphagine Pteromalidae, and Tanaostigmatidae.

Some ecologists prefer to use the term parasitoid to characterize parasitic insects. Protelean parasite is a phrase often used to distinguish between typical parasites and insects that are parasitic in the larval stage only (Askew, 1971).

One definition of parasitism for all parasitic organisms is impractical because animal species are parasitic in many different ways. The parasitological definition of parasitism in the sense of parasitic worms and protozoa is unsuitable in the present context because parasitic chalcidoids do not behave in a manner consistent with that definition. Therefore it seems more appropriate to list some of the biological attributes of parasitic chalcidoids. Parasitic chalcidoids are characterized as follows: (1) they are obligate parasites in the larval stage only; (2) they require only one host to complete development; (3) they attack related taxa (other arthropods and usually insects); (4) if the parasite completes development, the host invariably dies; (5) the ratio of size between the parasite and host approximates unity (except in some cases where the parasitic larvae are gregarious or polyembryonic development occurs).

Adults of some species host feed, but the significance of this behavior is not always clear. Host feeding may provide nutrients necessary for ovary or egg development, or it may be a convenient source of nutrients necessary for sustaining life (Flanders, 1953; Doutt, 1964; Quezada et al., 1973).

Parasitism by insects reaches its most elaborate development in the Chalcidoidea. Primary parasitism (larval development on a phytophagous host) is the most common type of parasitism by chalcidoids. Hyperparasitism (a parasite attacking another species of parasite) is found almost exclusively in the Hymenoptera, and reaches its most extensive development in the Chalcidoidea as indicated by the fact that most families have hyperparasitic species. Further evidence of the extensiveness of hyperparasitism in this superfamily is found in the fact that several types of hyperparasitism have evolved in the group. These include secondary (a parasite attacking a primary parasite), tertiary (a parasite attacking a secondary parasite) and quaternary (a parasite attacking a tertiary parasite). Hyperparasitism probably evolves out of primary parasitism in situations involving strong interspecific competition.

An unusual type of hyperparasitism occurs in *Coccophagoides utilis* Doutt and various related genera such as *Coccophagus*, *Encarsia*, and *Prospaltella*. Female larvae develop as primary parasites of armored-scale insects, and the male larvae develop as hyperparasites of their own females (Broodryk and Doutt, 1966). This phenomenon is called adelphoparasitism or autoparasitism and appears restricted to the aphelinines (Zinna, 1961; Flanders, 1959, 1967).

Parasitic chalcidoids can be categorized on the basis of where the egg is deposited and how the larva feeds. Most species attack the host directly, but adult female eucharitids and perilampine pteromalids oviposit on vegetation and the first-instar larva (planidium) searches for the host (Smith, 1912; Clausen, 1940 a,b). Species in which the adult female directly attacks the host

lay their eggs on the host's body and the larvae develop externally, or deposit their eggs inside the host's body and the larvae develop internally. There is a tendency for parasites that attack exposed hosts to develop internally (exception: elachertine Eulophidae), and parasites that attack concealed hosts to develop externally.

The intra- and interspecific relationships among parasitic chalcidoids vary. Some species are solitary (one parasite per host), and others are gregarious (several parasites per host). When more than one parasite species develops on a host simultaneously, the condition is termed multiple parasitism. When more eggs of one parasite species are laid on a host than can develop to maturity, the condition is termed superparasitism. Supernumerary individuals are eliminated through larval combat or physiological suppression (Salt, 1961).

The distinction between parasitism and predation sometimes fails, and some chalcidoids could be called predators. A prime distinction between parasites and predators is that predators frequently consume several prey, but parasites consume only one host per individual. The eunotine pteromalids and some mymarids could be regarded as egg predators because their larvae feed externally on scale-insect eggs in the "brood chamber" after they are oviposited by the female scale-insect (Clausen, 1940 a).

Parasitic species that attack many species of hosts are called polyphagous; parasitic species that attack only a few species of hosts are called stenophagous; and parasitic species that attack only one species of host are monophagous. Complete host specificity is difficult to establish because it is based essentially on negative evidence. The fact that a parasite will not attack a host under some conditions does not constitute proof that it will not parasitize that species. Nevertheless, there is a tendency towards specialization in the Chalcidoidea, and this is reflected by: (1) repeated recovery of a parasite from a host species over a large area, but not from related host species that occur sympatrically; (2) demonstrated preference for a host species when a choice is available; (3) superior reproductive capability on a host species; and (4) physical limitations that prevent a parasite from attacking a potential host.

Some polyphagous chalcidoids appear to prefer habitats rather than a taxonomically cohesive group of hosts. For example, *Zagrammosoma* species parasitize leaf-mining insects whether they are Lepidoptera, Diptera, or perhaps Hymenoptera. In contrast, related *Diglyphus* species parasitize only leaf-mining agromyzid Diptera. Other chalcidoids are extremely polyphagous. *Dibrachys cavus* (Walker) is an example. This species, like several others, has an exceedingly long host list that includes representatives of several orders. It usually develops as a primary parasite, but frequently also acts as a facultative hyperparasite (Graham, 1969). No explanation has been provided as to why one species should be so polyphagous and a closely related, morphologically similar species should be stenophagous or even monophagous.

Likewise, there are associations between host stage attacked and the taxonomic assignment of the parasite. For instance, the Trichogrammatidae and Mymaridae exclusively develop on the egg stage of other insects and the spalangine pteromalids are pupal parasites (Annecke and Doutt, 1961; Boucek, 1963; Doutt and Viggiani, 1968).

Chalcidoids parasitize more hosts in more different taxonomic categories than any other group of parasitic insects. This spectrum extends from spider eggs (*Desantisca*) to aculeate Hymenoptera (*Melittobia*, Leucospidae). A detailed account of the biology of chalcidoids requires more space than is available here. However, a short summary of some interesting host relationships is provided.

A bizarre host association is found in *Ixodiphagus* and *Hunterellus* (Encyrtidae) whose species are primary, internal parasites of tick larvae and nymphs. These genera are cosmopolitan and may prove to be beneficial insects in tick control (Cooley and Kohls, 1934; Cole, 1965; Doube and Heath, 1975).

The mymarid *Caraphractus cinctus* Walker is unusual in that it parasitizes dytiscid beetle eggs that are submerged beneath the surface of the water. The female parasite swims in the water by vibrating her wings and oviposits in the host's eggs. Females have considerable discriminative ability, and can detect eggs that have been parasitized (Jackson, 1958, 1966).

The Eucharitidae are parasitic on Formicidae. The association apparently is an old one, and eucharitids oviposit on vegetation visited by worker ants. The eggs hatch, and the triungulin larvae are phoretically transported to the ant nest. Inside the nest the triungulin larvae eventually move into the brood chamber where they parasitize immature ants (Clausen, 1923; 1940 b,c).

Other information about host association of chalcidoids is limited by a lack of knowledge about the immature stages of many groups of potential hosts. However, the higher taxonomic categories

ries that include the most host species for chalcidoids include Lepidoptera, Homoptera, Diptera, Coleoptera, and Hymenoptera. Chalcidoids generally have failed to adapt to the nymphal stage of paurometabolous insects. The host spectrum of chalcidoids is being expanded constantly by more comprehensive biological studies of other insects. Given the diversity of habits, host associations, and stages attacked, it seems reasonable to conclude that any insect potentially includes several niches where a chalcidoid can develop.

All known Hymenoptera develop parthenogenetically and chalcidoids demonstrate three types: arrhenotoky, thelytoky, and deuterotoky. Arrhenotoky is the most common type of parthenogenesis among chalcidoids. Uninseminated arrhenotokous females deposit haploid eggs that develop into hemizygous males. Inseminated arrhenotokous females produce female offspring from fertilized eggs and males from unfertilized eggs. Arrhenotoky is a mechanism whereby lethal and deleterious genes can be relatively rapidly eliminated from a population and superior genotypes can be relatively rapidly selected.

Thelytoky is parthenogenesis in which males are unknown or rare and females produce females by various asexual mechanisms. Cytologically, diploidy is maintained by apomixis and automixis. Apomixis (ameiotic thelytoky) is characterized by an absence of meiosis, and chromosome number is not reduced. Automixis (meiotic thelytoky) has reduction divisions, and diploidy is maintained in several ways. Rossler and DeBach (1973) review the methods of maintaining a constant chromosome number.

Thelytoky is common among parasitic Hymenoptera, but the extent of thelytoky in the Chalcidoidea is not known because our knowledge of their biology is limited. Many species are known from the original description only, and many species have been described from the female sex only. Thelytoky may be more common than now realized. In the rather well known genus *Aphytis*, DeBach (1969) records that about 30% of the species are thelytokous.

The evolutionary significance of thelytoky is an issue of debate. Traditional views hold that thelytoky is an "evolutionary blind alley". However, Rossler and DeBach (1972) have shown that at least one species of thelytokous chalcidoid has females that are capable of sexual reproduction.

Deuterotoky is parthenogenesis in which unfertilized eggs develop into both sexes. The cytological mechanism of deuterotoky has not been examined in chalcidoids. This form of parthenogenesis is common in some other animals, and has been reported in some species of chalcidoids (Doutt, 1959).

The cytogenetics of the Hymenoptera have been reviewed by Crozier (1975). That paper points to a lack of knowledge developed about chalcidoid karyotypes and cytological phenomena.

Hymenoptera are haplodiploid and this has been confused with sex determination. The correlation between males being haploid and females being diploid is positive and strong, but haploidy and diploidy in themselves do not determine sex. Diploid males are known to occur (Whiting, 1945). Several theories have been advanced to explain sex determination in the Hymenoptera, but in no instance has one theory proven adequate to explain determination in all groups (Whiting, 1940, 1943; daCunha and Kerr, 1957; Slobodchikoff and Daly, 1971). Crozier (1975) suggests that any general theory should accommodate the multiple allele case with as little modification as possible.

Polyembryony is a cytological phenomenon in which a single egg develops into many individual progeny. Among Hymenoptera the process occurs in the Platygastriidae (Proctotrupoidea) and copidosomatine Encyrtidae (Silvestri, 1906; Leiby, 1922, 1926).

Sex ratio in many species of animals approximates unity. In arrhenotokous chalcidoids the sex ratio usually is female biased and fluctuates between 60 and 80 percent female. Numerous factors have been implicated in the determination of sex ratio including size, stage, or species of host (Abdelrahman, 1974 a,b; Avidov and Podoler, 1968; Clausen, 1940 a), rate of oviposition (Abdelrahman, 1974 b), egg orientation (King, 1961), genetic factors (Wilkes, 1964), differential mortality (Roberts, 1933; Flanders, 1937; Abdelrahman, 1974 a), density fluctuations (Flanders, 1956), nutrition (Flanders, 1965; Moran *et al.*, 1969), and many others. This list could be lengthened substantially and its only limitation now is lack of research.

Mayr (1969) defines sibling species as "pairs or groups of closely related species which are reproductively isolated but morphologically identical or nearly so." Recent studies of chalcidoids have demonstrated that this group has many sibling species complexes (Hafez and Doutt, 1954; Claridge and Askew, 1960; DeBach, 1959, 1960, 1969; Khasimuddin and DeBach, 1976, a,b,c; Rao and DeBach, 1969 a,b,c). These complexes suggest that chalcidoids are in an active state of

evolution and speciating rapidly. Factors of chalcidoid biology that promote rapid speciation include: (1) short generation time; (2) several generations per season; (3) intensive inbreeding via sib mating; (4) microgeographic isolation; and (5) host preference.

Chalcidoids are the most important group in applied biological control. Other taxa (Tachinidae, Ichneumonidae, Braconidae, Proctotrupeoidea) are used extensively in biological control, but species-for-species chalcidoids have been used more successfully. DeBach (1964) lists 25 pest species with which complete biological control was achieved. Chalcidoids are responsible for control in 13 of these programs, a number far greater than any other taxonomic group. Agricultural pests in these control programs include many Homoptera, but some Coleoptera have also been controlled by chalcidoids (Taylor, 1937; Tooke, 1953; Williams *et al.*, 1951).

It is a pleasure to acknowledge the comments and suggestions on the preceding account made by the following individuals: Kenneth Cooper, Paul DeBach, Eric Grissell, Peter Price, and David Rosen.

Taxonomy: Ashmead, 1904. Carnegie Mus., Mem. 1 (4): 225-555. —Brues, 1910. N. Y. Ent. Soc. Jour. 18 (1): 1-22 (Fossils). —Nikol'skaya, 1952. Akad. Nauk SSSR 44, 593 pp. —Boucek and Hoffer, 1957. Klic Zuireny CRS 2: 208-288. —DeBach, 1959. Ent. Soc. Amer., Ann. 52 (4): 354-362. —DeBach, 1960. Ent. Soc. Amer., Ann. 53 (6): 701-705. —Annecke and Douth, 1961. Rep. So. Africa Dept. Agr. Tech. Serv., Ent. Mem. 5: 1-71. —Boucek, 1963. Mus. Natl. Prague, Acta Ent. 35: 429-512. —Peck, Boucek, and Hoffer, 1964. Canad. Ent. Soc. Mem. 34: 120 pp. —Douth and Viggiani, 1968. Calif. Acad. Sci., Proc. (4) 35 (20): 477-586. —Townes, 1969. Amer. Ent. Inst., Mem. 11: 1-300. —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. London, 16: 908 pp. —Douth, 1973. Pan-Pacific Ent. 49 (3): 221-228 (fossils). —Yoshimoto, 1975. Canad. Ent. 107 (5): 499-528 (fossils).

Biology: Silvestri, 1906. Lab. Zool. Gen. e Agr. Portici, Bol. 1: 17-64. —Smith, 1912. U. S. Dept. Agr., Tech. Ser. 19 (4): 33-69. —Leiby, 1922. Jour. Morph. 37: 195-285. —Clausen, 1923. Ent. Soc. Amer., Ann. 16 (3): 195-219. —Leiby, 1926. Ent. Soc. Amer., Ann. 19 (3): 290-299. —Roberts, 1933. U. S. Dept. Agr., Tech. Bul. 365: 1-21. —Cooley and Kohls, 1934. 5th Pacific Sci. Congr., Proc. 5: 3375-3381. —Flanders, 1937. Calif. Univ. Pubs., Ent. 6 (15): 401-422. —Taylor, 1937. Biol. Cont. Ins. Fiji 239 pp. —Clausen, 1940 a. Entomoph. Insects, 688 pp. —Clausen, 1940 b. Ent. Soc. Wash., Proc. 42 (8): 161-170. —Clausen, 1940 c. Wash. Acad. Sci., Jour. 30: 504-516. —Whiting, 1940. Jour. Morph. 66 (2): 323-355. —Whiting, 1943. Genetics 28: 365-382. —Whiting, 1945. Quart. Rev. Biol. 20: 231-260. —Williams *et al.*, 1951. Bul. Ent. Res. 42 (1): 23-28. —Tooke, 1953. Union So. Africa Dept. Agr., Ent. Mem. 3, 282 pp. —Flanders, 1953. Jour. Econ. Ent. 46 (4): 541-544. —Hafez and Douth, 1954. Canad. Ent. 86 (2): 90-96. —Flanders, 1956. Insectes Sociaux 3 (2): 322-334. —daCunha and Kerr, 1957. Forma et Functio 1 (1): 33-36. —Jackson, 1958. Roy. Ent. Soc. Lond., Trans. 110 (17): 533-556. —Douth, 1959. Ann. Rev. Ent. 4: 161-182. —Flanders, 1959. Ent. Expt. et Apl. 2 (2): 125-142. —Claridge and Askew, 1960. Entomophaga 5 (2): 141-153. —Grandi, 1961. Univ. Bologna Inst. Ent., Bol. 26: 1-13. —King, 1961. Nature 189 (4761): 330-331. —Salt, 1961. Soc. Expt. Biol., Symp. 15: 96-119. —Zinna, 1961. Lab. Ent. Agr. "Filippo Silvestri", Portici, Bol. 19: 301-358. —DeBach, 1964. in: Biol. Control Ins. Pests Weeds, pp. 673-713. —Douth, 1964. in: Biol. Control Ins. Pests Weeds, pp. 145-167. —Wilkes, 1964. Science 144 (3616): 305-307. —Cole, 1965. WHO-EBL 43: 65. —Flanders, 1965. Amer. Nat. 99: 489-494. —Broodryk and Douth, 1966. Hilgardia 37 (9): 233-254. —Jackson, 1966. Roy. Ent. Soc. Lond., Trans. 118 (2): 23-49. —Flanders, 1967. Entomophaga 12 (5): 415-427. —Hill, 1967 a. Figs (*Ficus* spp.) of Hong Kong, 130 pp. —Hill, 1967 b. Jour. Nat. Hist. 1: 413-434. —Avidov and Podoler, 1968. Israel Jour. Ent. 3 (1): 1-16. —Mayr, 1969. Principles Syst. Zool., 428 pp. —Moran *et al.*, 1969. Roy. Ent. Soc. Lond., Trans. 121 (2): 41-58. —DeBach, 1969. Israel Jour. Ent. 4: 11-28. —Rao and DeBach, 1969 a. Hilgardia 39 (19): 515-553. —Rao and DeBach, 1969 b. Hilgardia 39 (19): 555-567. —Rao and DeBach, 1969 c. Evolution 23: 525-533. —Ramirez, 1970 a. Univ. Kans., Sci. Bul. 49 (1): 1-44. —Ramirez, 1970 b. Evolution 24 (4): 680-691. —Askew, 1971. Parasitic Insects, 316 pp. —Slobodchikoff and Daly, 1971. Amer. Zool. 11: 273-282. —Rossler and DeBach, 1972. Entomophaga 17 (4): 391-423. —Rossler and DeBach, 1973. Hilgardia 42 (5): 149-176. —Quezada, DeBach and Rosen, 1973. Hilgardia 41 (18): 543-604. —Abdelrahman, 1974 a. Austral. Jour. Zool. 22 (2): 213-230. —Abdelrahman, 1974 b. Austral. Jour. Zool. 22 (2): 231-247. —DeBach, 1974. Biol. Control by Nat. Enemies, 323 pp. —Crozier, 1975. Hymen. Anim. Cytogen. 3: Ins. 7, 95 pp.

- Doube and Heath, 1975. Jour. Med. Ent. 12 (4): 443-447. —Khasimuddin and DeBach, 1976 a. Entomophaga 21 (1): 81-92. —Khasimuddin and DeBach, 1976 b. Entomophaga 21 (1): 113-122. —Khasimuddin and DeBach, 1976 c. Ent. Soc. Amer., Ann. 69 (1): 15-20.

Family TORYMIDAE

By E. E. GRISSELL

This family, represented in every zoogeographical region, contains in excess of 70 genera and 600 species. Members of the subfamily Agaoninae are exclusively phytophagous. Most members of the Megastigmminae are phytophagous, but a few parasitic species are known in Europe. The other subfamilies of Torymidae are largely parasitic, frequently on gall-forming insects. Hosts are reported in the Coleoptera, Diptera, Hymenoptera, Lepidoptera and Orthoptera.

Revision: Crawford, 1914. Ent. Soc. Wash., Proc. 16: 123 (Nearctic key). —Hoffmeyer, 1930. Ent. Meddel. 17: 232-285 (Palearctic key). —Nikol'skaya, 1952. Chalcid fauna of the U. S. S. R., pp. 101-149 (Palearctic key; Eng. transl. 1963). —Joseph, 1964. Roy. Ent. Soc. London, Proc., Ser. B. Taxonomy 33: 63-66 (classification).

Taxonomy: Peck, 1963. Canad. Ent., Sup. 30: 526-590 (bibliography).

Morphology: Breland, 1938. N. Y. Ent. Soc., Jour. 46: 355-399. —Copland and King, 1972. Roy. Ent. Soc. London, Trans. 124: 191-212 (female reproductive system).

SUBFAMILY AGAONINAE

By B. D. BURKS

The members of this subfamily develop as gall makers within the fruits of figs, *Ficus* spp. As Hill (1967) has stated, "Pollination of fig flowers is effected through a unique symbiotic association with chalcid wasps. No other means of pollination is available to the plant, and in their turn the wasps cannot develop anywhere except in the gall flowers of the figs."

Taxonomy: Grandi, 1963. Univ. Bologna, Ist. di Ent., Bol. 26: 319-373 (world cat. of genera and spp.). —Wiebes, 1966. Zool. Verhandl. 83, 44 pp. (world host list). —Hill, 1967. Figs of Hong Kong, Hong Kong Univ. Press, pp. 91-98 (world genera).

Biology: Hill, 1967. Figs of Hong Kong, Hong Kong Univ. Press, pp. 7-12, 99-102.

Genus BLASTOPHAGA Gravenhorst

Genus BLASTOPHAGA Subgenus BLASTOPHAGA Gravenhorst

Blastophagus Gravenhorst, 1827 (1826). Uebers. Arb. Schles. Gesell. Vaterland. Kultur, p. 23. Suppressed by Opinion 694, Internatl. Comn. Zool. Nomencl., 1964.

Type-species: *Blastophagus grossorum* Gravenhorst. Monotypic.

Blastophaga Gravenhorst, 1829. Schles. Gesell. Vaterland. Kultur, Beitr. Ent., p. 27.

Emend. Validated by Opinion 694, Internatl. Comn. Zool. Nomencl., 1964.

Kradibia Saunders, 1883. Ent. Soc. London, Trans., pp. 20, 23.

Type-species: *Kradibia cowani* Saunders. Monotypic.

Kradibiella Girault, 1915. Queensland Mus., Mem. 4: 313.

Type-species: *Kradibiella nigricorpus* Girault. Orig. desig.

Paraceratosolen Girault, 1915. Queensland Mus., Mem. 4: 312.

Type-species: *Paraceratosolen latipennis* Girault. Orig. desig.

Taxonomy: China, 1960. Bul. Zool. Nomencl. 18: 69-72 (request for validation of *Blastophaga* Gravenhorst, 1829, and suppression of *Blastophagus* Gravenhorst, 1827). —Internatl. Comn. Zool. Nomencl., 1964. Opinion 694, Bul. Zool. Nomencl. 21: 31-32 (validation of *Blastophaga* Gravenhorst, type-species *B. grossorum* Gravenhorst). —Hill, 1967. Figs of Hong Kong, Hong Kong Univ. Press, p. 91.

psenes (Linnaeus). Ariz., Calif.; worldwide in frost-free areas. Introduced from Algeria. Host:

Fruit of the inedible caprifig. First introduced into California in 1890 to

pollinate and thus to improve the quality of cultivated edible figs. Ten years of effort were required before this insect was successfully established. Fig wasp.

Cynips Psenes Linnaeus, 1758. Syst. Nat., ed. 10, p. 554. Nom. nud., but validated by Opinion 694, Internatl. Comn. Zool. Nomencl., 1964.

Cynips Psenes Linnaeus, 1767. Syst. Natl., ed. 12, tom. 1, pars 2, p. 919.

Blastophaga grossorum Gravenhorst, 1829. Beitr. Ent., besonders in Bezug auf die Schles. Fauna, v. 1, pp. 27-29.

Taxonomy: Condit and Enderud, 1956. Hilgardia 25: 64-85, 616 (bibliography on caprification).

Biology: Grandi, 1929. R. Ist. Super. Agr., Lab. di Ent., Bol. 2: 1-145. —Quayle, 1938. Insects of Citrus and other Subtropical Fruits, pp. 408-416. —Buscalioni and Grandi, 1938. R. Univ. Bologna, Ist. Ent., Bol. 10: 245-266. —Joseph, 1954. Agra Univ., Jour. Res. (Sci.) 3: 408. —Grandi, 1955. Accad. Naz. dei Lincei, Atti, Mem., Cl. Sci., (8) 5: 3. —Grandi, 1956. Univ. Bologna, Ist. Ent., Bol. 21: 111. —Mrak, 1957. Food Tech. 11: 547. —Kuttamathiathu, 1958. Ann. Sci. Nat., Zool. et Biol. Anim., (11) 20: 201. —Seraffimova, 1965. Akad. na Selsk. Nauki. Gradinar., Nauka 2: 269.

Morphology: Grandi, 1929. R. Ist. Super. Agr., Lab. di Ent., Bol. 2: 1-145.

Genus *BLASTOPHAGA* Subgenus *SECUNDEISENIA* Schulz

Eisenia Ashmead, 1904. Carnegie Mus., Mem. 1: 233. Preocc. by Malm, 1877, and Vaillant, 1889.

Type-species: *Eisenia mexicana* Ashmead. Orig. desig.

Eiseniella Ashmead, 1906. Ent. Soc. Wash., Proc. 8: 31. N. name. Preocc. by Michaelsen, 1900.

Secundeisenia Schulz, 1906. Spolia Hym., p. 146. N. name for *Eisenia* Ashmead.

Pegoscapus Cameron, 1906. Estac. Centr. Agron. Cuba, Prim. Informe, An., p. 275.

Type-species: *Pegoscapus longiceps* Cameron. Monotypic.

Allopade Strand, 1911. Arch. f. Naturgesch. 77: 210. N. name for *Eisenia* Ashmead.

Blastophaga subg. *Valentiniella* Grandi, 1919. Lab. Zool. Gen. e Agr. Portici, Bol. 13: 18, 25.

Type-species: *Valentiniella estherae* Grandi, Desig. by Gahan and Fagan, 1923.

Blastophaga subg. *Valentiniella* Grandi, 1928. R. Ist. Super. Agr., Lab. di Ent., Bol. 1: 69. Emend.

Taxonomy: Hill, 1967. Figs of Hong Kong, Hong Kong Univ. Press, p. 91.

mexicana (Ashmead). Fla.; West Indies, Mexico. Host: *Ficus aurea*, *F. laevigata*.

Eisenia mexicana Ashmead, 1904. Carnegie Mus., Mem. 1: 233. ♀.

Taxonomy: Gahan and Peck, 1946. Wash. Acad. Sci., Jour. 36: 315.

Biology: Butcher, 1964. Fla. Ent. 47: 235-238.

SUBFAMILY IDARNINAE

By E. E. GRISSELL

Members of this subfamily are not well known taxonomically or biologically. All have been reared from the receptacles of *Ficus*, but little exact biological information is available. Known biologies indicate these wasps are parasitic upon pollinating Agaoninae.

Genus *COLYOSTICHUS* Mayr

Colyostichus Mayr, 1885. Zool.-Bot. Gesell. Wien, Verh. 35: 157-158, 237.

Type-species: *Colyostichus longicauda* Mayr. Desig. by Ashmead, 1904.

brevicaudis Mayr. Fla. Host: *Ficus altissima*.

Colyostichus brevicaudis Mayr, 1885. Zool.-Bot. Gesell. Wien, Verh. 35: 239. ♀.

Taxonomy: Butcher, 1964. Fla. Ent. 47: 237 (in key).

Genus NEOSYCOPHILA Grandi

Neosycophila Grandi, 1923. Genova Mus. Civ. Stor. Nat., Ann. 51: 106.

Type-species: *Neosycophila omeomorpha* Grandi. Orig. desig.

Taxonomy: Burks, 1967. In Krombein, et al., U. S. Dept. Agr., Agr. Monog. 2, Sup. 2: 249.
—Burks, 1969. Fla. Ent. 52: 119-120.

bicolor (Ashmead). Fla.; W. Indies. Host: *Ficus citrifolia*.

Sycophila bicolor Ashmead, 1900. Ent. Soc. London, Trans. pp. 252, 335. ♀, ♂.

Taxonomy: Butcher, 1964. Fla. Ent. 47: 237 (in key).

incerta (Ashmead). Fla.; W. Indies. Host: *Ficus citrifolia*.

Sycophila incerta Ashmead, 1900. Ent. Soc. London, Trans., pp. 253, 335. ♀.

Genus IDARNES Walker

Idarnes Walker, 1843. Ann. and Mag. Nat. Hist. 12: 47.

Type-species: *Idarnes carme* Walker. Monotypic.

Tetragonaspis Mayr, 1885. Zool.-Bot. Gesell. Wien, Verh. 35: 205.

Type-species: *Tetragonaspis gracilicornis* Mayr. Desig. by Gahan and Fagan, 1923.

Ganosoma Mayr, 1885. Zool.-Bot. Gesell. Wien, Verh. 35: 204.

Type-species: *Ganosoma robustum* Mayr. Desig. by Gahan and Fagan, 1923.

Taxonomy: Butcher, 1964. Fla. Ent. 47: 237 (In key). —Gordh, 1975. Kans. Univ. Sci. Bul. 50: 389-455 (external morph., biol., key to Neotropical spp.).

carme Walker. Fla.; W. Indies, Puerto Rico, Brazil. Host: *Ficus aurea*.

Idarnes carme Walker, 1843. Ann. and Mag. Nat. Hist. 12: 47. ♀.

SUBFAMILY TORYMINAE

By E. E. GRISSELL

Revision: Crawford, 1914. Ent. Soc. Wash., Proc. 16: 122-126. —Hoffmeyer, 1930. Ent. Meddel. 17: 232-285.

Taxonomy: Breland, 1938. N. Y. Ent. Soc., Jour. 46: 355-399 (phylogeny).

Genus ALLOTORYMUS Huber

Allotorymus Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 104.

Type-species: *Syntomaspis splendens* Provancher. Orig. desig.

splendens (Provancher). Ont., Colo., B. C.

Syntomaspis splendens Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 196.
♀, ♂.

Taxonomy: Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 105 (female, male). —Burks, 1964 (1963). Canad. Ent. 95: 1262.

Genus TORYMUS Dalman

Callimome Spinola, 1811. Paris Mus. d'Hist. Nat., Ann. 17: 146-148. Suppressed by Internatl. Comn. Zool. Nomencl., 1944, Opinion 155, pp. 227-238.

Type-species: *Ichneumon bedeguaris* Linnaeus. Desig. by Curtis, 1835.

Misocampe Latreille, 1818. Nouv. Dict. Hist. Nat., ed. 2, p. 213. Suppressed by Internatl. Comn. Zool. Nomencl., 1944, Opinion 155, pp. 227-238.

Type-species: *Ichneumon bedeguaris* Linnaeus. Desig. by Gahan and Fagan, 1923.

Torymus Dalman, 1820. Svenska Vetensk. Akad., Handl. 41: 135, 178.

Type-species: *Ichneumon bedeguaris* Linnaeus. Desig. by Ashmead, 1904.

Misocampus Stephens, 1829. Cat. Brit. Ins., v. 1, p. 395. Emend.

Syntomaspis Foerster, 1856. Hym. Stud. 2: 43-44.

Type-species: *Torymus eurytonus* Foerster. Desig. by Gahan and Fagan, 1923. The type-species is considered a synonym of *Torymus cyaneus* Boheman.

Lioterphus Thomson, 1875. Skand. Hym. v. 4, pp. 60, 99.

Type-species: *Torymus pallidicornis* Boheman. Desig. by Ashmead, 1904.

Hemitorymus Ashmead, 1904. Carnegie Mus., Mem. 1: 243.

Type-species: *Hemitorymus thoracicus* Ashmead. Orig. desig.

Members of this genus exhibit a diverse range of habits. A few species are phytophagous, but the majority are parasitic on gall-forming Hymenoptera and Diptera. A few parasitize gall-forming Psyllidae. Several species are known to develop on the host larva as well as phytophagously in surrounding plant tissue.

Revision: Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 1-114. —Grissell, 1976. Univ. Calif.

Pubs. Ent. 79: 1-120.

Taxonomy: Hobbs, 1948. Pan-Pacific Ent. 24: 95-96. —Goodpasture and Grissell, 1975. Canad. Jour. Genet. and Cytol. 17: 413-422.

advenus (Osten Sacken). Conn., N. J., N. Y., D. C., N. C., Fla., La. Host: *Asphondylia rudbeckiae* conspicua O. S.; cecidomyiid gall in blossom of *Vernonia noveboracensis*; *Procecidochares atra* (Loew); *Andricus quercuspetiolicola* (O. S.)?, *Callirhytis quercusventricosa* (Bass.)?, *Diastrophus nebulosus* (O. S.)?

Callimome advena Osten Sacken, 1870. Amer. Ent. Soc., Trans. 3: 59-60. ♂, ♀.

aea (Walker). N. Y., N. J., Pa., W. Va., Minn., Utah, Calif. Ecology: From seeds of *Amelanchier canadensis*. Host: *Megastigmus amelanchieris* Cush.

Callimome aea Walker, 1843. Ann. and Mag. Nat. Hist. 12: 104. ♀.

Syntomaspis amelanchieris Cushman, 1917. Ent. Soc. Wash., Proc. 19: 82-83. ♀, ♂.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 151.

Biology: Cushman, 1917. Ent. Soc. Wash., Proc. 19: 84. —Milliron, 1949. Amer. Midland Nat. 41: 393-395.

aeneoscapus (Huber). Wyo., Idaho, Utah, Ariz., Oreg., Nev., Calif. Ecology: From gall on *Chrysothamnus*. Host: *Diarthronomyia artemisiae* Felt, *Rhopalomyia salviae* Felt.

Callimome aeneoscapus Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 35. ♀.

aereus (Huber). D. C., Va., Fla., Mo., Tex., Ariz. Ecology: From galls on *Quercus laurifolia*, *Q. macrocarpa*?, *Q. schneckii*. Host: *Dryocosmus imbricariae* (Ashm.).

Callimome aereum Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 71. ♀, ♂.

alaskensis (Huber). Alaska.

Callimome alaskensis Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 31-32. ♀.

anthomyiae Ashmead. Ga., Fla. Host: *Chalcodermus inaequicollis* Horn; muscid leaf miner (probably *Pegomya* sp.) of cultivated plant.

Torymus anthomyiae Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 189. ♀.

asteridis (Huber). N. H., Conn. Ecology: From cecidomyiid gall on aster.

Callimome asteridis Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 43. ♀, ♂.

atheatus Grissell. Tex., N. Mex., Idaho, Utah, Ariz., Oreg., Nev., Calif. Ecology: From fruits of *Sphaeralcea*.

Torymus atheatus Grissell, 1976. Univ. Calif. Pubs. Ent. 79: 63. ♀, ♂.

atriplicis (Huber). Ariz., Calif. Host: *Asphondylia neomexicana* (Ckll.).

Callimome atriplicis Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 44. ♀.

aucupariae (Rodzianko). Minn. Host: Probably *Megastigmus aucupariae* Ratz.

Syntomaspis aucupariae Rodzianko, 1908. Soc. Imp. Nat. Moscou, Bul. (n. s.) 21: 602. ♀, ♂.

axillaris Ashmead. Va., W. Va.

Torymus axillaris Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 333. ♀.

azureus Boheman. Mont., N. Mex.; Holarctic. Ecology: From *Picea engelmanni* cones (N. Amer. record). Host: *Perrisia strobi* Winn.; *Laspeyresia strobilella* (L.) (Palearctic region).

Torymus azureus Boheman, 1834. Svenska Vetensk. Akad., Handl. 54: 369-370. ♀.

baccharidis (Huber). Calif. Host: *Rhopalomyia californica* Felt on *Baccharis*.

Callimome baccharidis Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 46-47. ♀, ♂.

Callimome pilularidis Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 45-46. ♀, ♂.

- Biology: Doult, 1961. Ent. Soc. Amer., Ann. 54: 51 (*baccharicidis*). —Burks, 1965. Ent. News 65: 74-76 (host). —Force, 1970. Ent. Soc. Amer., Ann. 63: 1675-1688 (*baccharicidis*).
—Force, 1974. Science 184: 624-632.
- bedeguaris** (Linnaeus). Que., Ont., Ill., Iowa, Nebr., Alta., Utah, Ariz., Wash., Oreg., Nev., Calif.; Europe. Host: *Diplolepis bicolor* (Harris), *D. ignota* (O. S.), *D. polita* (Ashm.), *D. rosae* (L.), *D. tuberculatrix* (Ckll.), *D. variabilis* (Bass.).
Ichneumon Bedeguaris Linnaeus, 1758. Syst. Nat., ed. 10, p. 567. ♀.
Torymus elegans Boheman, 1834. Svenska Vetensk. Akad., Handl. 54: 352. ♀, ♂.
Callimome divisus Walker, 1871. Notes on Chalcid., pt. 2, p. 34. ♀.
Callimome druparum Mayr, 1874. Zool.-Bot. Gesell. Wien, Verh. 24: 103. Misident. of *druparum* Boheman.
Callimome chrysochlora Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 37-39. Misident., in part, of *chrysochlora* Osten Sacken.
- Taxonomy: Mayr, 1874. Zool.-Bot. Gesell. Wien, Verh. 24: 103 (misdet. of *druparum* Boheman). —Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 37-39. (misdet., in part, of *chrysochlora* Osten Sacken).
- Biology: Judd, 1959. Canad. Ent. 91: 728-730.
- bicoloratus** (Huber). N. Mex., Idaho, Ariz., Wash., Oreg., Calif. Host: *Amphibolips trizonata* Ashm., *Callirhytis quercuspomiformis* (Bass.), *Diplolepis bicolor* (Harris)?, gall on *Quercus chrysolepis*.
Callimome bicoloratum Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 73. ♀, ♂.
- boharti** Grissell. N. Mex., Ariz., Nev., Calif.
Torymus boharti Grissell, 1976. Univ. Calif. Pubs. Ent. 79: 65. ♀, ♂.
- brodiei** (Ashmead). Ont., Ill. Host: *Acraspis erinacei* (Beut.), *A. pezomachoides* (O. S.)?; *Mayetiola rigidae* (O. S.).
Syntomaspis Brodiei Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 187. ♀, ♂.
- californicus** (Ashmead). Oreg., Calif. Ecology: From pimply gall on *Quercus douglasi*, ?strawberry gall on *Quercus dumosa*. Host: *Andricus chrysolepidicola* (Ashm.), *A. lasius* (Ashm.), *A. quercuscalifornicus* (Bass.), *Disholcaspis corallina* (Bass.), *D. chrysolepidis* (Beut.), *D. plumbella* Kinsey, *D. simulata* Kinsey, *D. truckeensis* (Ashm.), *D. sp.* on *Quercus douglasi*, *Besbicus mirabilis* Kinsey, *B. conspicuus* (Kinsey), *Callirhytis quercusagrifoliae* (Bass.), *C. quercuspomiformis* (Bass.), *C. sp.* on *Quercus chrysolepis*, *Heteroecus pacificus* (Ashm.), *Trichoteras vacciniifoliae* (Ashm.).
Syntomaspis californica Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 127. ♀.
Callimome californica subdolum Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 85-86. ♀, ♂.
- capillaceus albitarsis** (Huber). Ill., Kans., Tex., Colo., N. Mex., Idaho, Utah, Ariz., Nev., Calif. Ecology: From stem gall on *Ambrosia*, seed-pod gall on *Mimosa biuncifera*, gall on *Solidago rigida*. Host: *Asphondylia helianthiglobulus* O. S., cecidomyiid flower gall on *Ratibida columnaris*, *Lasioptera* sp. on *Aster*, tephritid gall on *Chrysothamnus*; *Desmoris fulvus* (Lec.).
Callimome albitarse Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 80. ♀.
- Biology: Breland, 1939. Ent. Soc. Amer., Ann. 32: 719, 724.
- capillaceus capillaceus** (Huber). Tex., N. Mex., Ariz., Calif.; Mexico (Baja California Norte, San Luis Potosi, Sonora, Veracruz). Ecology: From gall on *Hymenoclea*; seed pods of *Prosopis*. Host: *Asphondylia neomexicana* (Ckll.), *websteri* Felt, *A. sp.* bud galls on *Larrea divaricata*, *Mayetiola rigidae* (O. S.), cecidomyiid galls on *Rhus copallina lanceolata* (buds) and *Artemisia*? leaves.
Callimome capillaceum Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 74-75. ♀.
Syntomaspis medicaginis Gahan, 1919. Ent. Soc. Amer., Ann. 12: 162. ♀, ♂. Preocc. by Mayr, 1874.
Callimome sativae Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 77. N. name.
- capite** (Huber). D. C., Wis., Utah, Nev. Ecology: From mine on *Solidago*. Host: *Lasioptera* sp.
Callimome capite Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 32-33. ♀, ♂.
- cecidomyiae** (Walker). Que., Ont., N. Y., Ohio, Kans., Wash., Calif. Host: *Cecidomyia communis* (nomen nudum), *C. spongivora* Walk., *Rhabdophaga strobiloides* (O. S.).
Callimome Cecidomyiae Walker, 1844. Ann. and Mag. Nat. Hist. 14: 15. ♀.

Callimome strobiloides Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 40. ♀.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., bul. 32 (4): 151-152.

chrysochlorus (Osten Sacken). Conn., Colo., Alta., Idaho, Wash. Host: *Diptolepis bicolor* (Harris), *D. dichloceras* (Harris), *D. fusiformans* (Ashm.), *D. lens* Weld, *D. polita* (Ashm.). Previous records for this species (Peck, 1963, Canad. Ent., Sup. 30, p. 538) mostly apply to *T. bedeguaris* and *T. solitarius*. Records given here are only for those specimens which I have examined.

Callimome chrysochlorata Osten Sacken, 1870. Amer. Ent. Soc., Trans. 3: 63-64. ♀, ♂.

citripes (Huber). Colo., N. Mex., Idaho, Utah, Ariz., B. C., Wash., Oreg., Calif. Ecology: From stem gall on *Helianthus lenticularis*. Host: *Euaresia bullans* (Wied.). *Gymnocarena tricolor* (Doane), *Eutreta diana* (O. S.).

Callimome citripes Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 48. ♀, ♂.

coccineus (Huber). Maine, Mass., Conn., Va. Host: *Amphibolips confluenta* (Harris), *A. quercuspongifica* (O. S.).

Callimome coccineum Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 68-69. ♀.

coeruleus (Ashmead). Fla. Ecology: From gall on *Rubus* sp. Host: *Amphibolips confluenta* (Harris).

Callimome coerulea Ashmead, 1881. Amer. Ent. Soc., Trans. 9: Proc. p. xxxiii. ♀, ♂.

coloradensis (Huber). Kans.(?), Colo., Idaho, Utah, Wash. Host: Cecidomyiid gall on *Artemisia*, *Dasineura?* sp. on *Helianthus*.

Callimome coloradensis Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 49. ♀, ♂.

cruentatus (Huber). Conn. Host: Cynipid leaf gall on *Quercus virginiana*.

Callimome cruentatum Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 50-51. ♀, ♂.

dasyneurae (Huber). Ohio, Tex., Wyo., N. Mex., Utah, Ariz., Nev., Calif. Host: *Dasineura ulmea* Felt, *Walshomyia cupressi* Gagne, *W. sp. nr. juniperina* Felt.

Callimome dasyneurae Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 56-57. ♀, ♂.

dennoi Grissell. Calif. Host: *Walshomyia* sp. nr. *juniperina* Felt.

Torymus dennoi Grissell, 1976. Univ. Calif. Pubs. Ent. 79: 26. ♀, ♂.

denticulatus (Breland). Utah, Ariz., Calif.; Mexico (Chihuahua). Ecology: From staminate flw. gall on *Quercus agrifolia*, leaf gall on *Q. utahensis* and *Q. turbinella*. Host: *Andricus crystallinus* Bass., *A. kingi* Bass., *A. tostus* (Kinsey), *Antron clavuloides* (Kinsey), *A. quercusechinus* (O. S.) bisex. gen., *Callirhytis uvellae* Weld, *Dros pedicellatum* (Kinsey), *Dryocosmus dubiosus* (Full.) bisex. gen., *Sphaeroterus trimaculosus* (Mck. and Eg.). The host *Andricus tostus* is known only from Mexico.

Callimome denticulata Breland, 1939. Brooklyn Ent. Soc., Bul. 34: 85-86. ♀, ♂.

diabolus Moser. N. Y. Host: *Phytophaga* sp. on *Celtis occidentalis*.

Torymus diabolus Moser, 1965. N. Y. State Mus., Sci. Ser., Bul. 402: 26-27. ♀.

dryophantae (Ashmead). Fla. Host: *Bassetia quercuscastebaei* (Ashm.).

Syntomaspis dryophantae Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 187. ♀.

dubiosus (Huber). D. C. Ecology: From leaf gall on *Carya*.

Callimome dubiosum Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 24-25. ♀.

duplicatus (Huber). Que., south to Fla., west to Nebr. Host: *Diastrophus cuscuteaefornis* O. S.

Callimome duplicatum Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 27-28. ♀, ♂.

durus (Osten Sacken). Conn., D. C. Host: *Diplosis caryae* O. S.

Callimome dura Osten Sacken, 1870. Amer. Ent. Soc., Trans. 3: 59. ♂.

ebrius (Osten Sacken). Conn., N. J., D. C., Va., Ohio, Tex. Host: *Lasiophora vitis* O. S.

Callimome ebria Osten Sacken, 1870. Amer. Ent. Soc., Trans. 3: 58-59. ♀, ♂.

elegantissimus (Ashmead). Ont.?, Fla. Host: *Disholcaspis quercusvirens* (Ashm.); *Xanthoterus quercusforticorne* (Walsh)?

Callimome elegantissima Ashmead, 1881. Amer. Ent. Soc., Trans. 9: Proc. p. xxxiv. ♀.

fagopirum (Provancher). Eastern seaboard to Fla., northern U. S., southern Canada. Host:

Dasineura rosarum (Hardy), *D. serrulatae* (O. S.), *Rhabdophaga salicifolia* Felt;

- Diastrophus cuscuteaeformis* O. S., *D. kincaidii* Gill, *D. nebulosus* (O. S.), *D. turgidus* Bass., *Disholcaspis quercusvirens* (Ashm.).
- Callimome breviceauda* Osten Sacken, 1870. Amer. Ent. Soc., Trans. 3: 62. ♀, ♂. Preocc. by Walker, 1833.
- Callimome*(?) *fagopirum* Provancher, 1881 (Aug.). Nat. Canad. 12: 291. ♀, ♂.
- Callimome Sackenii* Ashmead, 1881 (Oct.). Amer. Ent. Soc., Trans. 9: Proc. p. xxxii. N. name.
- Callimome brevissimicauda* Ashmead, 1881. Amer. Ent. Soc., Trans. 9: Proc. p. xxxiii. ♀.
- Callimome virentis* Ashmead, 1881. Amer. Ent. Soc., Trans. 9: Proc. p. xxxiv. ♀.
- Callimome fagopyrum* Provancher, 1883. Petite Faune Ent. Canada Hym., p. 820. Misspelling, in index only.
- Torymus ostensackenii* Dalla Torre, 1898. Cat. Hym. v. 5, p. 311. N. name for *brevicauda* O. S.
- Callimome alamedensis* Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 28-29. ♀, ♂.
- ferrugineipes** (Huber). N. Mex., Ariz., Calif.
- Callimome ferrugineipes* Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 33. ♀, ♂.
- festivus** Hobbs. Alaska, N. W. T., Oreg. Host: *Dasineura* sp. in seeds of *Thuja* and *Chamaecyparis*.
- Torymus festivus* Hobbs, 1950. Pan-Pacific Ent. 26: 173-174. ♀, ♂.
- flavicoxa** (Osten Sacken). Que., Maine, N. H., Mass., Conn., Ont., N. J., Va., B. C., Oreg., Calif. Host: *Belonocnema treatae* Mayr, *Diastrophus nebulosus* (O. S.), *Diplolepis radicum* (O. S.), *D. terrigena* Weld, *Liposthenes glechomae* (L.).
- Callimome flavicoxa* Osten Sacken, 1870. Amer. Ent. Soc., Trans. 3: 61. ♀.
- Cleonymus superbus* Provancher, 1888. Nat. Canad. 17: 407. ♀.
- Taxonomy: Burks, 1964 (1963). Canad. Ent. 95: 1257.
- flaviventris** Ashmead. Conn.?, Kans.
- Torymus flaviventris* Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App. p. iv. ♀.
- floridensis** Peck. Fla. Ecology: From gall on *Quercus phellos* or *Q. laurifolia*. Host: *Amphibolips quercusfuliginosa* (Ashm.).
- Callimome robustum* Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 72. ♀. Preocc. by Ratzeburg, 1852.
- Torymus floridensis* Peck, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 523. N. name.
- frankiei** Grissell. Calif. Host: *Walshomyia cupressi* Gagne.
- Torymus frankiei* Grissell, 1973. Pan-Pacific Ent. 49: 236. ♀, ♂.
- fullawayi** (Huber). Ariz., Oreg., Calif.; Mexico (Michoacan). Host: *Andricus quercuscalifornicus* (Bass.), *A. tibialis* (Kinsey), *Callirhytis quercusagrifoliae* (Bass.), *C. quercuspomiformis* (Bass.), *Disholcaspis plumbella* Kinsey, *Dryocosmus dubiosus* (Full.) unisex. and bisex. gen., *Heteroecus pacificus* (Ashm.).
- Syntomaspis caerulea* Fullaway, 1912. N. Y. Ent. Soc., Jour. 20: 275. ♀. Preocc. by Ashmead, 1881.
- Callimome fullawayi* Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 19. N. name.
- Taxonomy: Breland, 1939. Brooklyn Ent. Soc., Bul. 34: 87.
- fulvus** (Huber). Md., Iowa, Nebr.
- Callimome fulvum* Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 26-27. ♀.
- hainesi** Ashmead. Tex., N. Mex., Ariz., Calif.; Mexico to El Salvador. Host: *Asphondylia websteri* Felt.
- Torymus hainesi* Ashmead, 1893. Ent. News 4: 278. ♀.
- Callimome asphondyliae* Gahan, 1919. Ent. Soc. Amer., Ann. 12: 161-162. ♂, ♀. Preocc. by Kieffer and Jorgensen, 1910.
- helianthi** Brodie. Ont., Tex., Utah. Host: *Trishormomya helianthi* (Brodie).
- Torymus helianthi* Brodie, 1894. Biol. Rev. Ontario 1: 45-46. ♀.
- Torymus brevis* Breland, 1948. Ent. Soc. Wash., Proc. 50: 57. ♀, ♂.
- Taxonomy: Breland, 1948. Ent. Soc. Wash., Proc. 50: 58.
- Biology: Breland and Schmitt, 1948. Ent. News 59: 230.

- hircinus** Ashmead. Va. (? lapsus for w. Va.), W. Va. Ecology: From twig gall on willow.
Torymus hircinus Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 333. ♀, ♂.
- hirsutus** (Huber). Ariz. Host: *Tanaostigmodes* stem gall on *Acacia greggii*.
Callimome hirsutum Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 74. ♀, ♂.
- huberi** (Hoffmeyer). Tex. Host: Cecidomyiid? gall on *Celtis* sp.
Callimome tarsale Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 76. ♂, ♀. Preocc. by Walker, 1833.
Callimome huberi Hoffmeyer, 1929. Ent. Meddel. 16: 333. N. name.
- kinseyi** (Huber). Mont., Idaho, Utah, Nev., Calif. Host: *Diarthonomyia artemisiae* Felt, cecidomyiid galls on *Chrysothamnus* and *Erigeron*, *Trypeta* sp. on *Chrysothamnus viscidiflorus*.
Callimome kinseyi Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 44. ♀, ♂.
- koebelei** (Huber). Tex., Mont., Wyo., N. Mex., Idaho, Utah, Ariz., Wash., Nev., Calif.; Mexico (Nuevo Leon). Host: *Rhopalomyia californica* Felt.
Callimome koebelei Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 52. ♀, ♂.
- Biology: Douthett, 1961. Ent. Soc. Amer., Ann. 54: 51. — Force, 1970. Ent. Soc. Amer., Ann. 63: 1675-1688. — Force, 1974. Science 184: 624-632.
- larreae** Grissell. Tex., N. Mex., Ariz., Calif.
Torymus larreae Grissell, 1976. Univ. Calif. Pubs. Ent. 79: 76. ♀, ♂.
- lissus** (Walker). Fla., Ill. Ecology: From leaf gall on *Quercus laurifolia*. Host: *Belonocnema treatae* Mayr, *Disholcaspis quercusomnivora* (Ashm.), *D. quercusvirens* (Ashm.).
Callimome lissus Walker, 1843. Soc. Ent. de France, Ann. 1: 150. ♂.
Callimome aenea Ashmead, 1881. Amer. Ent. Soc., Trans. 9: Proc. p. xxxiii. ♀, ♂.
Callimome dryorhizoxeni Ashmead, 1885. Amer. Ent. Soc., Trans. 12: Proc. p. xiii. ♀.
Torymus omnivora Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 188. ♂, ♀.
- Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 152.
- lividus** (Ashmead). Fla., La.
Callimome lividus Ashmead, 1885. Amer. Ent. Soc., Trans. 12: Proc. p. xiii. ♀.
- longicauda** (Provancher). Que., Ont.
Callimome(?) *longicauda* Provancher, 1883. Nat. Canad. 14: 34. ♀.
- Taxonomy: Burks, 1964 (1963). Canad. Ent. 95: 1256.
- longior** Brodie. Ont., N. Dak., Tex., Ariz., Calif. Host: *Trishoromomyia helianthi* (Brodie).
Torymus longior Brodie, 1894. Biol. Rev. Ontario 1: 45-46. ♀.
- longiscapus** Grissell. Calif. Host: *Callirhytis agrifoliae* (Ashm.).
Torymus longiscapus Grissell, 1976. Univ. Calif. Pubs. Ent. 79: 78. ♀, ♂.
- longistigmus** (Huber). Idaho, Wash., Calif. Host: Woody cecidomyiid gall on willow.
Callimome longistigmum Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 47. ♀, ♂.
- magnificus** (Osten Sacken). N. H., Conn., N. Y., N. J., D. C., Fla., Kans., Colo., Utah. Host: *Diplolepis radicum* (O. S.).
Callimome magnifica Osten Sacken, 1870. Amer. Ent. Soc., Trans. 3: 62. ♀, ♂.
- mellipes** (Huber). Mass., Conn. Host: Cecidomyiid gall on *Populus* sp.
Callimome mellipes Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 23. ♀, ♂.
- memnonius** Grissell. Tex. Host: *Disholcaspis cinerosa* (Bass.).
Torymus memnonius Grissell, 1973. Pan-Pacific Ent. 49: 237-238. ♀, ♂.
- mexicanus** Ashmead. Ariz.; Mexico (Guanajuato, Durango). Host: *Andricus championi* Ashm.
Torymus Mexicanus Ashmead, 1899. Ent. News 10: 195. ♀, ♂.
- missouriensis** (Huber). N. C., Ind., Mo. Host: Cecidomyiid stem gall on *Rubus*; cynipid gall.
Callimome missouriensis Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 42. ♀, ♂.
- multicolor** (Huber). Calif. Host: Cecidomyiid gall on *Ephedra* sp.
Callimome multicolor Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 51-52. ♀.
- neuroterus** Ashmead. Fla. Host: *Neuroterus quercusminutissimus* (Ashm.).
Torymus neuroterus Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 188. ♂.

- nitidulus** Walker. Maine, Mont.; Europe, Asia. Host: *Oligotrophus betulae* Winn. The host was recorded in Europe.
Callimome nitidulus Walker, 1833. Ent. Mag. 1: 138. ♂.
Torymus pallidicornis Boheman, 1834 (1833). Svensk. Vetensk. Akad., Handl. 56: 363. ♀.
- Taxonomy: Eady, 1958. Ent. Monthly Mag. 94: 260.
- obscurus** (Breland). Ind., Ky., Tenn., Ala., Miss., Ill., Mo., Tex., Ariz., Calif.; Mexico (Nuevo Leon). Host: *Lasiopoda murtfeldtiana* Felt.
Callimome obscura Breland, 1939. Ent. Soc. Amer., Ann. 32: 721. ♀, ♂.
- Biology: Satterthwait, 1948. Jour. Econ. Ent. 41: 729-730.
- occidentalis** (Huber). Oreg., Nev., Calif. Host: Cecidomyiid galls on *Juniperus occidentalis*.
Callimome occidentale Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 79. ♀, ♂.
- ochreateus** Say. Ind. Ecology: In *Liatris* receptacle. Type material destroyed.
Torymus ochreateus Say, 1836. Boston Jour. Nat. Hist. 1: 275. ♀, ♂.
- osborni** (Huber). Wyo. Host: Cynipid on *Rosa* sp.
Callimome osborni Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 93. ♀, ♂.
- oviperditor** (Gahan). Kans., Idaho. Host: *Cicadetta calliope* (Wlkr.), *Tibicen aurifera* Say.
Syntomaspis oviperditor Gahan, 1927. Ent. Soc. Wash., Proc. 29: 99-100. ♀, ♂.
- pachypsyllae** (Ashmead). Ohio, Kans., Tex., N. Mex., Idaho. Host: *Pachypsylla venusta* O. S., *P. celtidismamma* Riley, *P. celtidisvesicula* Riley.
Monodontomerus pachypsyllae Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App. p. III. ♀, ♂.
- Taxonomy: Moser, 1965. N. Y. State Mus., Sci. Ser., Bul. 402: 22, 33-34.
- pavidus** Say. Ind. Type material destroyed.
Torymus pavidus Say, 1836. Boston Jour. Nat. Hist. 1: 275. ♂.
- perplexus** (Huber). Oreg. Host: *Besbicus mirabilis* (Kinsey).
Callimome perplexum Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 49. ♀.
- persimilis** Ashmead. Va., (? lapsus for W. Va.), W. Va. Host: Cecidomyiid gall on willow.
Torymus persimilis Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 334. ♀.
- potamius** Grissell. Idaho, Utah, Ariz., Nev., Calif. Host: *Pontania* sp. galls.
Torymus potamius Grissell, 1976. Univ. Calif. Pubs. Ent. 79: 34-35. ♀, ♂.
- prunicola** (Huber). N. Mex., Ariz.
Callimome prunicola Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 91. ♀.
- racemariae** (Ashmead). N. Y. to Fla., Ala., w. to Ill., Colo., Tex. Host: *Amphibolips confluenta* (Harr.), *A. gainesi* Bass., *A. quercusfuliginosa* (Ashm.), *A. quercusinanis* (O. S.), *A. quercusjuglans* (O. S.), *A. quercusracemaria* (Ashm.), *Disholcaspis cinerosa* (Bass.), *D. quercusglobulus* (Fitch), *D. quercusmamma* (Walsh), *D. terrestris* Weld, *Dryocosmus imbricariae* (Ashm.).
Callimome racemariae Ashmead, 1881. Amer. Ent. Soc., Trans. 9: Proc. p. xxxiii. ♀, ♂.
Syntomaspis racemariae Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 187. Emend.
- Biology: Balduf, 1926. Canad. Ent. 58: 137-143, 163.
- Morphology: Snodgrass, 1910. U. S. Natl. Mus., Proc. 39: 65.
- rhoditidis** (Huber). Mass. Host: *Diptolepis* sp. on *Rosa*.
Callimome rhoditidis Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 34. ♀, ♂.
- rudbeckiae** Ashmead. Ont., Colo. Ecology: From gall on *Rudbeckia* sp. Host: Cecidomyiid on *Desmodium grandiflorum*.
Torymus rudbeckiae Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 26, 45. ♀, ♂.
- rugglesi** Milliron. Del., Md., Va. Ecology: From *Ilex opaca* seeds.
Torymus rugglesi Milliron, 1959. Ent. Soc. Amer., Ann. 52: 52. ♀, ♂.
- scalaris** (Huber). Fla., Wis., Kans., Tex., Ariz., Calif. Host: *Pachypsylla celtidisgemma* Riley.
Callimome scalaris Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 21. ♀, ♂.
- solidaginis** (Huber). Conn., N. Y., N. C. Host: Cecidomyiid.
Callimome solidaginis Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 92. ♀, ♂.

- solitarius** (Osten Sacken). Colo., Alta., Idaho, Utah, Ariz., Wash., Nev., Calif. Host: *Diastrophus kincaidii* Gill., *Diptolepis bicolor* (Harris), *D. spinosa* (Ashm.), *D. tuberculatrix* (Ckll.).
Callimome solitaria Osten Sacken, 1870. Amer. Ent. Soc., Trans. 3: 64. ♀.
Callimome rosae Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 35-36. ♀.
Callimome tubularis Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 39-40. ♀, ♂.
- Taxonomy:** Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 37-39 (misdet., in part, of *chrysochlora* Osten Sacken).
- splendidulus** Dalla Torre. Ont. Host: *Mayetiola rigidae* (O. S.).
Callimome splendidus Walker, 1844. Ann. and Mag. Nat. Hist. 14: 14. Preocc. by Foerster, 1841.
Torymus splendidulus Dalla Torre, 1898. Cat. Hym., v. 5, p. 313. N. name.
- Taxonomy:** Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 152-153.
- subcalifornicus** Grissell. Oreg., Calif. Host: *Trichoteraps vaccinifoliae* (Ashm.).
Torymus subcalifornicus Grissell, 1976. Univ. Calif. Pubs. Ent. 79: 44. ♀, ♂.
- sulcatus** (Huber). Oreg., Calif. Host: *Dischalcaspis truckeensis* (Ashm.), *Heteroecus flavens* (McC. and Egb.).
Callimome sulcatum Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 22. ♀.
- texanus** (Hoffmeyer). Tex., Ariz.; Mexico (Monterey). Host: *Amphibolips globulus* Beut., *A. trizonata* Ashm., *Atrusca aggregata* (Weld), *A. bella* (Bass.), *A. congesta* (Kinsey), *A. simulatrix* (Kinsey), *Dischalcaspis cinerosa* (Bass.).
Callimome texanum Hoffmeyer, 1930. Ent. Meddel. 17: 213. ♀, ♂.
- Taxonomy:** Breland, 1939. Brooklyn Ent. Soc., Bul. 34: 87.
- thalassinus** (Crosby). Conn., N. Y., Ohio, Minn., Wyo., N. Mex., Idaho, Utah, Ariz., Wash., Oreg., Nev., Calif. Host: *Harmolita* sp. from *Bouteloua* sp., *Elymus* sp., *Dactylis glomerata*, *Lolium multiflorum*, *L. temulentum*, *Muhlenbergia* sp., *Phleum* sp.
Syntomaspis thalassinus Crosby, 1908. Canad. Ent. 40: 43. ♀, ♂.
Callimome rohweri Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 58. ♀, ♂.
- theon** (Walker). Fla.
Callimome theon Walker, 1843. Soc. Ent. de France, Ann. 1: 149. ♀.
- Taxonomy:** Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 153.
- thompsoni** Fyles. Que. Ecology: From plum fruit.
Torymus Thomsoni Fyles, 1904 (1903). Ent. Soc. Ontario, Ann. Rpt. 34: 10-11. ♀.
Torymus thompsoni Fyles, 1916 (1915). Ent. Soc. Ontario, Ann. Rpt. 46: 55. Emend.
- tubicola** (Osten Sacken). Que., Mass. to N. C. and Ohio, Mo., La., Tex., Colo., N. Mex., Utah, Ariz., Oreg., Calif.; Mexico (Baja California Norte, Nayarit). Host: *Acraspis villosa* Gill., *Amphibolips globulus* Beut., *A. quercuscitriformis* (Ashm.), *A. quercusini* (O. S.), *A. quercuspongifica* (O. S.), *Andricus crystallinus* Bass., *A. kingi* Bass., *A. quercuscalifornicus* (Bass.), *A. quercusflocci* (Walsh), *A. quercuspetiolicola* (Bass.), *A. reniformis* McC. and Egb., *Antron dumosae* (Kinsey)?, *A. quercusechinus* (O. S.), *A. douglasii* (Ashm.), *Atrusca bella* (Bass.), *A. congesta* (Kinsey), *A. simulatrix* (Kinsey), *A. vanescens* (Kinsey), *Belonocnema kinseyi* Weld, *Besbicus conspicuus* (Kinsey), *B. mirabilis* (Kinsey), *B. multipunctatus* (Beut.), *Callirhytis congregata* (Ashm.), *C. quercusoperator* (O. S.), *C. quercuspomiformis* (Bass.), *C. quercusventricosa* (Bass.), *C. seminor* (Harr.), *C. tubicola* (O. S.), *Dischalcaspis cinerosa* (Bass.), *D. colorado* (Gill.), *D. corallina* (Bass.), *D. plumbella* Kinsey, *D. quercusglobulus* (Fitch), *D. quercusmammas* (Walsh), *D. rubens* (Gill.), *D. simulata* Kinsey, *D. s. vancouverensis* Kinsey, *D. terrestris* Weld, *Dros pedicellatum* (Kinsey), *Dryocosmus castanopsidis* (Beut.), *Heteroecus pacificus* (Ashm.), *Trichoteraps vacciniifoliae* (Ashm.), *Xanthoteraps politum* (Bass.).
Callimome tubicola Osten Sacken, 1870. Amer. Ent. Soc., Trans. 3: 60. ♂, ♀.
Callimome melanocerae Ashmead, 1885. Amer. Ent. Soc., Trans. 12: Proc. p. xiii. ♀.
Callimome citrifolii Ashmead, 1885. Amer. Ent. Soc., Trans. 12: Proc. p. xiii. ♀.
Syntomaspis citrifolius Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 187. Emend.
Callimome castanopsidis Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 64-65. ♀, ♂.
Callimome giganticum Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 65-66. ♀, ♂.

- Callimome gahani* Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 69. ♀, ♂. A questionable synonym.
- Callimome rubenidis* Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 78. ♀, ♂.
- Callimome minutissimum* Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 78-79. ♀.
- umbilicatus** (Gahan). Tex., N. Mex., Utah, Ariz., Oreg., Calif.; Mexico (Chihuahua, Morelos, Puebla, Sonora). Ecology: From flower heads of *Viguiera deltoidea* and *Senecio douglasii*. Host: *Asphondylia neomexicana* (Ckll.), *A. sp.* bud and flower galls on *Clematis drummondii*, *Lasioptera sp.* on *Aster spinosus*, cecidomyiid galls on *Ambrosia sp.* (terminal stem), *Larrea sp.* (stem), *Mimulus sp.*, *Schrankia sp.* (seed pod gall), *Suaeda sp.*; tephritid stem gall on *Eupatorium adenophorum*.
- Syntomaspis umbilicata* Gahan, 1919. Ent. Soc. Amer., Ann. 12: 163. ♀, ♂.
- Callimome tricolor* Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 96. ♀, ♂.
- varians** (Walker). N. S., Que., Maine, Vt., Conn., Ont., N. Y., Pa., Va., N. C., Ohio, Mich., Man., B. C.; Europe. Ecology: From seeds of apple, *Crataegus spp.*, *Malus silvestris*, *Pyrus spp.*, *Sorbus intermedia*, and *S. latifolia*?
- Callimome varians* Walker, 1833. Ent. Mag. 1: 122. ♀.
- Torymus druparum* Boheman, 1834 (1833). Svensk. Vetensk. Akad., Handl. 54: 361.
- Taxonomy: Eady, 1958. Ent. Monthly Mag. 94: 260 (*Syntomaspis* Foerster). —Olsson, 1957. Vaxtskyd. 21: 58 (syn.: *druparum* Boheman).
- Biology: Crosby, 1909. N. Y. (Cornell) Agr. Expt. Sta., Bul. 265: 369-375. —Cushman, 1916. Jour. Agr. Res. 7: 487. —Knight, 1922. N. Y. (Cornell) Agr. Expt. Sta., Bul. 410: 490. —Lathrop, 1936. Maine Agr. Expt. Sta., Bul. 384: 392. —Hammer, 1939. Jour. Econ. Ent. 32: 259-264. —Lathrop and Dirks, 1944. Jour. Econ. Ent. 37: 199-204. —Frost, 1951. Pa. Agr. Expt. Sta., Bul. 535: 19, 22, 28.
- vesiculi** Moser. N. Y., s. to Ga., w. to Idaho and Ariz. Host: *Pachypsylla celtidismamma* Riley, *P. celtidisvesicula* Riley.
- Torymus vesiculi* Moser, 1956. Kans. Ent. Soc., Jour. 29: 58. ♀, ♂.
- Taxonomy: Moser, 1965. N. Y. State Mus., Bul. 402: 21-22, 33-34.
- warreni** (Cockerell). N. Y., N. C., Tex., Colo., N. Mex., Utah, Ariz., Calif.; Mexico (Baja California Norte). Host: *Amphibolips globulus* Beut., *Autron dumosae* (Kinsey), *Disholcaspis cinerosa* (Bass.), *D. colorado* (Gill.), *D. edura* Weld, *D. pruniformis* Kinsey, *D. quercusglobulus* (Fitch), *D. quercusmamma* (Walsh), *D. rubens* (Gill.), *D. spongiosa* (Karsch).
- Syntomaspis warreni* Cockerell, 1911. Ent. News 22: 82. ♀.
- Callimome cinerosum* Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 84-85. ♀.
- xanthopus** (Schulz). Kans. Host: Cecidomyiid on cedar.
- Megastigmus flavipes* Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App. p. III. ♂.
- Preocc. by Walker, 1833.
- Megalostigmus xanthopus* Schulz, 1906. Spolia Hym., p. 147. N. name.
- Torymus abortus* Crosby, 1914. Ent. News 25: 27. N. name.

Genus DIOMORUS Walker

- Diomorus* Walker, 1834. Ent. Mag. 2: 159.
- Type-species: *Diomorus nobilis* Walker. Monotypic.
- Dihomerus* Schulz, 1906. Spolia Hym., p. 148. Emend.
- viridis** (Provancher). Que.
- Haltichella viridis* Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 192. ♀.
- Taxonomy: Burks, 1964 (1963). Canad. Ent. 95: 1259 (prob. = *zabriskiei* Cresson).
- zabriskiei** Cresson. N. Y., N. J., W. Va., Kans., B. C., Calif. Host: *Crossocerus fergusonii* Pate, *C. insolens* (Fox), *Ectemnius lapidarius* (Panz.), *E. stirpicola* (Pack.), *E. (Hyprocrabro) paucimaculatus* (Pack.), *E. (H.) spiniferus* (Fox), *Eupilis (Corynopis) arapaho* Pate, *E. (C.) rufigaster* (Pack.), *Ceratina dupla* Say.
- Diomorus zabriskii* (!) Cresson, 1878. Psyche 2: 189. ♀.
- Diomorus zabriskiei* Peck, 1951. In Muesebeck, et. al., U. S. Dept. Agr., Agr. Monog. 2: 527. Valid emend.

Biology: Krombein, 1960. Ent. News 71: 32, 67. — Krombein, 1964. Biol. Soc. Wash., Proc. 77: 102-103.

Genus *PHYSOTHORAX* Mayr

Physothorax Mayr, 1885. Zool.-Bot. Gesell. Wien, Verh. 35: 159, 196.

Type-species: *Physothorax disciger* Mayr. Desig. by Gahan and Fagan, 1923.

Members of this genus have been reared from the receptacles of figs. As with Idarninae, the exact relationship of wasp to host is not known.

Revision: Burks, 1969. Fla. Ent. 52: 115-119 (Nearctic spp.).

bidentulus Burks. Fla. Host: *Ficus altissima?*, *F. aurea*, *F. citrifolia*.

Physothorax bidentulus Burks, 1969. Fla. Ent. 52: 118-119. ♀, ♂.

pallidus Ashmead. Fla.; W. Indies. Host: *Ficus aurea*, *F. citrifolia*.

Physothorax pallidus Ashmead, 1900. Ent. Soc. London, Trans., p. 254. ♀, ♂.

russelli Crawford. Fla. Host: *Ficus aurea*.

Physothorax russelli Crawford, 1910 (1909). Ent. Soc. Wash., Proc. 11: 204. ♀.

Taxonomy: Butcher, 1964. Fla. Ent. 47: 237 (fig associates).

SUBFAMILY ERIMERINAE

By E. E. GRISSELL

Members of this subfamily are parasites of insects in grass stems.

Taxonomy: Breland, 1938. N. Y. Ent. Soc., Jour. 46: 357 (phylogeny).

Genus *ERIMERUS* Crawford

Erimerus Crawford, 1914. Ent. Soc. Wash., Proc. 16: 123.

Type-species: *Torymus wickhami* Ashmead. Orig. desig.

wickhami (Ashmead). Utah. Ecology: From galls on *Hilaria (Harmolita)?*.

Torymus wickhami Ashmead, 1904. Ent. News 15: 302. ♀.

Taxonomy: Crawford, 1914. Ent. Soc. Wash., Proc. 16: 123.

Genus *PSEUDERIMERUS* Gahan

Pseuderimerus Gahan, 1919. U. S. Natl. Mus., Proc. 55: 124.

Type-species: *Pseuderimerus mayetiola* Gahan. Orig. desig.

Taxonomy: Peck, *et al.*, 1964. Ent. Soc. Canad., Mem. 34: 21 (placed as Monodontomerinae).

femoratus Gahan. Calif. Host: *Mayetiola destructor* (Say).

Pseuderimerus femoratus Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 32-33. ♀.

mayetiola Gahan. Calif. Host: *Mayetiola destructor* (Say).

Pseuderimerus mayetiola Gahan, 1919. U. S. Natl. Mus., Proc. 55: 125. ♀, ♂.

Taxonomy: Hill and Pinckney, 1940. U. S. Dept. Agr., Tech. Bul. 715: 10-13.

Biology: Packard, 1928. U. S. Dept. Agr., Tech. Bul. 81: 14. — Gahan, 1934 (1933). U. S. Dept.

Agr., Misc. Pub. 174: 30-32.

semiflavus Gahan. Calif. Host: *Mayetiola destructor* (Say).

Pseuderimerus semiflavus Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 33. ♀.

SUBFAMILY MONODONTOMERINAE

By E. E. GRISSELL

The Monodontomerinae are a loose assemblage of taxa not particularly well defined morphologically or biologically. All species are parasitic, with hosts in the Diptera, Hymenoptera, Lepidoptera, and Coleoptera.

Revision: Crawford, 1914. Ent. Soc. Wash., Proc. 16: 123-124 (key to genera). —Szelenyi, 1957. Mus. Nat. Hungarici, Ann. Hist.-Nat., n. s., 8: 381-388 (key to genera). —Szelenyi, 1960. Acad. Sci. Hungarici, Acta Zool. 5: 141-146 (rev. key to genera).

Genus LIODONTOMERUS Gahan

Lochites Foerster, 1856. Hym. Stud., v. 2, pp. 43, 44, 120. Preocc. by *Lochites* Gistel, 1848 (Protozoa).

Type-species: *Lochites papaveris* Foerster. Monotypic.

Liodontomerus Gahan, 1914. U. S. Natl. Mus., Proc. 48: 159.

Type-species: *Liodontomerus perplexus* Gahan. Orig. desig.

Lochitica Ghesquiere, 1946. Rev. de Zool. et de Bot. Africaines 34: 368. N. name for *Lochites* Foerster.

Members of this genus are parasitic upon *Bruchophagus* in leguminous seeds.

Taxonomy: Nikol'skaya, 1952. Chalcid fauna of the U. S. S. R. 44: 135 (Holarctic. Eng. transl. 1963). —Burks, in Butler and Hansen, 1958. Pan-Pacific Ent. 34: 224.

Biology: Neunzig and Gyrisco, 1959. Jour. Econ. Ent. 52: 899-901.

insuetus Gahan. Nebr., Kans., Okla., N. Mex., Utah, Ariz., Calif.; Holarctic. Host:

Bruchophagus gibbus (Boh.), *B. platyptera* (Walk.), *B. roddei* (Guss.).

Liodontomerus insuetus Gahan, 1917. U. S. Natl. Mus., Proc. 53: 208. ♀.

Biology: Butler, et al., 1968. Ariz. Univ. Agr. Exp. Sta., Tech. Bul. 185: 7.

longfellowi (Girault). N. Y., Md., Va., W. Va., Ohio, Mich., Minn., Iowa, S. Dak., Utah, Idaho, Oreg.; Holarctic. Host: *Bruchophagus gibbus* (Boh.), *B. platyptera* (Walk.) complex.

Idiomacromerus longfellowi Girault, 1917 (May 14). Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 8. ♀, ♂.

Liodontomerus secundus Gahan, 1917 (May 26). U. S. Natl. Mus., Proc. 53: 208. ♀, ♂.

Biology: Urbahns, 1919. Jour. Agr. Res. 16: 169-170. —Butler and Hansen, 1958. Pan-Pacific Ent. 34: 227.

perplexus Gahan. Iowa, S. Dak., Utah, Ariz., Calif.; Holarctic. Host: *Bruchophagus platyptera* (Walk.) complex.

Liodontomerus perplexus Gahan, 1914. U. S. Natl. Mus., Proc. 48: 159. ♀, ♂.

Biology: Urbahns, 1920. U. S. Dept. Agr., Bul. 812: 17-18. —Sorenson, 1930. Utah Agr. Expt. Sta., Bul. 218: 27-32. —Butler, et al., 1968. Ariz. Univ. Agr. Exp. Sta., Tech. Bul. 185: 7-9.

Genus IDIOMACROMERUS Crawford

Idiomacromerus Crawford, 1914. Ent. Soc. Wash., Proc. 16: 124.

Type-species: *Idiomacromerus bimaculipennis* Crawford. Orig. desig.

bimaculipennis Crawford, Kans., Utah, Calif. Host: *Eurytoma compressa* Bugbee, *E. seminis* Bugbee.

Idiomacromerus bimaculipennis Crawford, 1914. Ent. Soc. Wash., Proc. 16: 124. ♀.

Genus PLATYKULA Huber

Platykula Huber, 1927. U. S. Natl. Mus., Proc. 70 (14): 106.

Type-species: *Syntomaspis albihirta* Ashmead. Orig. desig.

albihirta (Ashmead). Fla.

Syntomaspis albihirta Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 187. ♀.

Genus DIMEROMICRUS Crawford

Dimeromicrus Crawford, 1910. U. S. Natl. Mus., Proc. 38: 127.

Type-species: *Dimeromicrus ashmeadi* Crawford. Orig. desig.

cecidomyiae (Ashmead). Fla., Tex. Host: Cecidomyiid on *Baccharis halimifolia*.

Megastigma(!) *cecidomyiae* Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 185. ♀, ♂.

Lochites auriceps Ashmead, 1894. Linn. Soc. London, Jour., Zool. 25: 153. ♀, ♂.

Taxonomy: Milliron, 1949. Amer. Midland Nat. 41: 347.

smithi (Schread). Conn. Host: *Caryomyia* sp. gall.

Lochites smithi Schread, 1937. Brooklyn Ent. Soc., Bul. 32: 102. ♀, ♂.

Genus MONODONTOMERUS Westwood

Monodontomerus Westwood, 1833. London, Edinb. and Dublin Phil. Mag. and Jour. (3) 2: 443.

Type-species: *Monodontomerus obscurus* Westwood. Monotypic.

Paroligosthenus Cameron, 1913 (1912). Indian Forest Rec. 4: 94.

Type-species: *Paroligosthenus trichiophthalmus* Cameron. Monotypic.

Revision: Gahan, 1941. U. S. Natl. Mus., Proc. 90: 461-482 (Nearctic spp.). —Steffan, 1952.

Paris Mus. d' Hist. Nat., Bul. 24: 288-290 (Europe, N. Africa). —Nikol'skaya, 1952. Chalcid fauna of the U. S. S. R. 44: 137-140 (Palearctic. Eng. transl. 1963).

aereus Walker. N. B. ?, New England; India; Holarctic. Host: *Archips argyrospilus* (Walk.), *Malacosoma americanum* (F.), *Nygmia phaeorrhoea* (Donov.), *Orygia leucostigma* (J. E. Smith), *Porthetria dispar* (L.); *Blepharipa scutellata* (R. D.), *Carcelia laxifrons* Vill., *Compsilura concinnata* (Meig.), *Exorista larvarum* (L.), *Townsendiellomyia nidicola* (Tns.); *Apanteles lacteicolor* Vier., *A. melanoscelus* (Ratz.), *Iseropus coelebs* (Walsh), *Meteorus versicolor* (Wesm.), *Phobocampe uncinata* (Grav.).

Monodontomerus aereus Walker, 1834. Ent. Mag. 2: 158. ♀.

Taxonomy: Muesebeck, 1931. Jour. Agr. Res. 43: 445-460.

Biology: Howard and Fiske, 1911. U. S. Dept. Agr., Bur. Ent. Bul. 91: 86-308. —Muesebeck and Dohanian, 1927. U. S. Dept. Agr., Bul. 1487: 19-20. —Burgess and Crossman, 1929. U. S. Dept. Agr., Tech. Bul. 86: 77-80. —Proper, 1934. Jour. Agr. Res. 48: 361-376. —Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139: 114-116. —Wilbert, 1960. Entomophaga 5: 203. —Blunck and Wilbert, 1962. Ztschr. f. Angew. Ent. 50: 203.

bakeri Gahan. Colo.

Monodontomerus bakeri Gahan, 1941. U. S. Natl. Mus., Proc. 90: 475. ♀.

clementi Grissell. Wyo. Host: *Dianthidium heterulkei* Schwarz.

Monodontomerus clementi Grissell, 1973. Pan-Pacific Ent. 49: 235. ♀, ♂.

dentipes (Dalman). Que., Maine, Conn., Ont., N. Y., N. J., Pa., Ohio, Mich., Wis., Idaho; Holarctic. Host: *Orygia pseudotsugata* (McD.); Tachinidae; *Diprion similis* (Htg.), *Gilpinia hercyniae* (Htg.), *Rogas unicolor* (Wesm.).

Torymus dentipes Dalman, 1820. Svenska Vetensk. Akad., Handl. 41: 173, 178. ♂, ♀.

Monodontomerus viridaeneus Provancher, 1881. Nat. Canad. 12: 290. ♀.

Taxonomy: Finlayson, 1960. Canad. Ent. 92: 37, 39, 44 (immature stages).

Biology: Morris, Cameron, and Jepson, 1937. Bul. Ent. Res. 28: 377-380, 389, 391. —Finlayson and Finlayson, 1958. Canad. Ent. 90: 558-559. —Drooz and Fedde, 1972. Environ. Ent. 1: 522-523.

Morphology: Bucher, 1948. Canad. Jour. Res. 26D: 230-281.

dianthidii Gahan. Calif. Host: *Dianthidium* sp.

Monodontomerus dianthidii Gahan, 1941. U. S. Natl. Mus., Proc. 90: 464. ♀, ♂.

emarginatus Gahan. Colo. Host: *Megachile* sp.

Monodontomerus emarginatus Gahan, 1941. U. S. Natl. Mus., Proc. 90: 476. ♀.

indiscretus Gahan. Maine. Host: *Heterarthrus nemoratus* (Fall.).

Monodontomerus indiscretus Gahan, 1941. U. S. Natl. Mus., Proc. 90: 469. ♀.

mandibularis Gahan. N. Y., D. C., Ohio, Ill., Mo., La. Host: *Anthophora abrupta* Say, *A. bomboides* Kirby, *Melitoma taurea* (Say), *Osmia cordata* Robt.

Monodontomerus mandibularis Gahan, 1941. U. S. Natl. Mus., Proc. 90: 474. ♀, ♂.

Biology: Rau, 1947. Ent. Soc. Amer., Ann. 40: 221-226.

mexicanus Gahan. Ind., Calif.; Mexico. Host: *Trypoxylon (Trypoxylon) mexicanum* Sauss., *Parancistrocerus vagus* (Sauss.), *Ancyloscelis armata* Smith.

Monodontomerus mexicanus Gahan, 1941. U. S. Natl. Mus., Proc. 90: 468. ♀, ♂.

Biology: Torchio, 1974. Kans. Ent. Soc., Jour. 47: 58.

minor (Ratzeburg). Conn., N. Y., south to Va., west to Calif.; Europe. Host: *Thyridopteryx ephemeraeformis* (Haw.), *Phryganidia californica* Pack., *Samia cynthia* (Drury), *Malacosoma americana* (F.), *Grapholitha molesta* (Busck), *Choristoneura fumiferana* (Clem.)?, *Gambrus extrematis* (Cress.). Recorded as hyperparasite of Lepidoptera in European literature.

Torymus minor Ratzeburg, 1848. Ichn. d. Forstins., v. 2, p. 178. ♀, ♂.

Monodontomerus subobsoletus Gahan, 1941. U. S. Natl. Mus., Proc. 90: 480. ♀, ♂.

Taxonomy: Grissell, 1973. Pan-Pacific Ent. 49: 233-234 (figs.).

Biology: Allen, 1962. U. S. Dept. Agr., Tech. Bul. 1265: 102.

montivagus Ashmead. Ont., Del., Ill., Mo., Mont., Colo., N. Mex., Utah, B. C., Calif. Host: *Choristoneura fumiferana* (Clem.); *Anthidium emarginatum* (Say), *Megachile pacifica* (Panzer), *Dianthidium pudicum* (Cress.), *D. pudicum consimile* (Ashm.), *D. curvatum sayi* Ckll., *Osmia cordata* Robertson, *O. texana* Cress.; *Anthophora abrupta* Say, *A. linsleyi* Timb., *A. bomboidea neomexicana* Ckll., *A. occidentalis* Cress., *Melissodes?* sp.; *Xylocopa tabaniformis orpifex* Smith; *Bombus morrisoni* Cress.; *Ancistrocerus tuberculocephalus* (Sauss.).

Monodontomerus montivagus Ashmead, 1890. Colo. Biol. Assoc. Bul. 1: 25, 45. ♀.

Monodontomerus americanus Girault, 1917. Descr. Stellarum Nov., p. 11. ♀.

Taxonomy: Grissell, 1973. Pan-Pacific Ent. 49: 236.

Biology: Linsley and McSwain, 1942. Amer. Midland Nat. 27: 403, 409-412.

obscurus Westwood. N. Y., Md., Pa., D. C., W. Va., Ga., Mo., Iowa, Idaho; Holarctic. Host: *Osmia cordata* Robt., *O. lignaria* Say, *Megachile pacifica* (Panzer).

Monodontomerus obscurus Westwood, 1833. London, Edinb. and Dublin Phil. Mag. and Jour. Sci. (3) 2: 443. ♀.

Taxonomy: Steffan, 1952. Paris Mus. d'Hist. Nat., Bul. (2) 24: 289-290. — Eady, 1958. Ent. Monthly Mag. 94: 269.

Biology: Eves, 1970. Melanderia (Wash. State Ent. Soc.) 4: 1-18. — Hobbs and Kronic, 1971. Canad. Ent. 103: 674-685.

Morphology: Radu and Botoc, 1968. Stud. Univ. Babes, Bolyai Ser. Biol. 13: 71-76 (female genitalia).

saltuosus Grissell. N. Mex., Calif. Host: *Orgyia pseudotsugata* (McD.).

Monodontomerus saltuosus Grissell, 1973. Pan-Pacific Ent. 49: 232-233. ♀, ♂.

Genus ZAGLYPTONOTUS Crawford

Zaglyptonotus Crawford, 1914. Ent. Soc. Wash., Proc. 16: 124-125.

Type-species: *Zaglyptonotus schwarzi* Crawford. Orig. desig.

mississippiensis Breland. Ala., Miss. Host: *Neotephritis finalis* (Loew).

Zaglyptonotus mississippiensis Breland, 1938. Ent. Soc. Amer., Ann. 31: 205. ♀, ♂.

schwarzi Crawford. Fla., Kans., Tex., Colo., Idaho. Host: *Desmoris fulvus* (Lec.)?; *Isophrictis similiella* (Chamb.); tephritid seed maggot from ironweed.

Zaglyptonotus schwarzi Crawford, 1914. Ent. Soc. Wash., Proc. 16: 126. ♀.

Biology: Brandhorst, 1943. Kans. Acad. Sci., Trans. 46: 168. — Needham, 1948. Ecol. Monog. 18: 446.

Genus GLYPHOMERUS Foerster

Glyphomerus Foerster, 1856. Hym. Stud., v. 2, pp. 43, 44, 145.

Type-species: *Ichneumon stigma* Fabricius. Orig. desig.

Oligosthenus Foerster, 1856. Hym. Stud., v. 2, p. 145. Unnecessary n. name.

Taxonomy: Boucek, 1970. R. Lab. Ent. Agr. Portici, Bol. 27: 28-32 (Palearctic spp.).

stigma (Fabricius). Que. to Fla., Oreg., Calif.; Europe, Japan. Host: *Diplolepis rosae* (L.); *Melitoma taurea* (Say).

Ichneumon stigma Fabricius, 1793. Ent. System. v. 2, p. 188.

Oligosthenus bimaculatus Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 196.
♀.

Taxonomy: Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 186.

Genus ERIDONTOMERUS Crawford

Eridontomerus Crawford, 1907. N. Y. Ent. Soc., Jour. 15: 178-179.

Type-species: *Eridontomerus primus* Crawford. Orig. desig.

isosomatis (Riley). N. Y. and Mich. to Tenn., Utah, Ariz. Host: *Mayetiola destructor* (Say); *Harmolita albomaculata* (Ashm.), *H. linearis* (Walk.), *H. longula* (Dalm.), *H. festucae* P. and E., *H. grandis* (Riley), *H. hordei* (Harris), *H. maculata* (How.), *H. secale* (Fitch), *H. tritici* (Fitch), *H. vaginicola* (Doane), *H. websteri* (How.).
Stictonotus isosomatis Riley, 1882. U. S. Dept. Agr., Ann. Rpt. for 1881-1882, p. 186. ♀, ♂.
Eridontomerus primus Crawford, 1907. N. Y. Ent. Soc., Jour. 15: 179. ♀, ♂.

Taxonomy: Gahan, 1921 (1920). Ent. Soc. Wash., Proc. 22: 235.

Biology: Phillips and Poos, 1927. Jour. Agr. Res. 34: 483-488. — Knowlton and Janes, 1933. Utah Agr. Expt. Sta., Bul. 243: 11-12.

Genus PSEUDOTORYMUS Masi

Holaspis Mayr, 1874. Zool.-Bot. Gesell. Wien, Verh. 24: 83. Preocc. by Lankester, 1873 (Pisces).

Type-species: *Torymus militaris* Boheman. Desig. by Ashmead, 1904.

Pseudotorymus Masi, 1922. Genova Mus. Civ. Stor. Nat., Ann. 49: 235. N. name for *Holaspis* Mayr.

lazeullesi (Ashmead). N. B., Que., Conn., w. to Colo. Ecology: From clover heads; oak galls. Host: *Harmolita* sp. in rye stems, *H.* sp. in timothy stems.

Syntomaspis lazeullesi Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 26, 45. ♀.

Biology: Webster, 1906 (1905). Ent. Soc. Wash., Proc. 7: 116.

Genus CRYPTOPRISTUS Foerster

Cryptopristus Foerster, 1856. Hym. Stud., v. 2, pp. 43, 44.

Type-species: *Torymus caliginosus* Walker. Monotypic.

Websterellus Ashmead, 1893. Ohio Agr. Exp. Sta., Tech. Ser., Bul. 1 (3): 164.

Type-species: *Websterellus tritici* Ashmead. Monotypic.

harrisii (Fitch). N. Y., Va., Ohio, Ky., Kans. Host: *Harmolita grandis* (Riley), *H. hordei* (Harris)?, *H. tritici* (Fitch).

Torymus Harrisii Fitch, 1862 (1861). N. Y. State Agr. Soc., Trans. 21: 152. ♀, ♂.

Websterellus tritici Ashmead, 1893. Ohio Agr. Expt. Sta., Tech. Ser., Bul. 1 (3): 164. ♀, ♂.

Cryptopristus americanus Girault, 1917. Descr. Stellarum Nov., p. 8. ♀.

Biology: Webster, 1893. U. S. Dept. Agr., Insect Life 6: 151. — Gahan, 1921 (1920). Ent. Soc. Wash., Proc. 22: 237.

Genus DITROPINOTUS Crawford

Ditropinotus Crawford, 1907. N. Y. Ent. Soc., Jour. 15: 178.

Type-species: *Ditropinotus aureoviridis* Crawford. Orig. desig.

aureoviridis Crawford. N. Y. to Ala. and Kans., Utah, Oreg. Host: *Mayetiola destructor* (Say); *Eurytoma parva* Phillips, *Harmolita linearis* (Wlkr.), *H. elymicola* P. and E., *H. grandis* (Riley), *H. secale* (Fitch), *H. tritici* (Fitch), *H. vaginicola* (Doane), *Eurytoma* spp., *Merisoporus chalcidiphagus* (W. and R.).

Ditropinotus aureoviridis Crawford, 1907. N. Y. Ent. Soc., Jour. 15: 178. ♀, ♂.

Ditropinotus flavicoxus Gahan, 1912. Ent. Soc. Wash., Proc. 14: 5. ♀, ♂.

Taxonomy: Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 25-30.

Biology: Hill, Pinckney, and Udine, 1939. U. S. Dept. Agr., Tech. Bul. 689: 5, 10, 13.

— Chamberlain, 1941. U. S. Dept. Agr., Tech. Bul. 784: 25-28, 35-38.

Morphology: Hill and Pinckney, 1940. U. S. Dept. Agr., Tech. Bul. 715: 6, 11-13.

Genus ANTISTROPHOPLEX Crawford

Antistrophoplex Crawford, 1914. Ent. Soc. Wash., Proc. 16: 122-125.

Type-species: *Antistrophoplex bicoloripes* Crawford. Orig. desig.

bicoloripes Crawford. Iowa, Kans. Host: *Antistrophus lygodesmiaepisum* Walsh on *Lygodesmia*.

Antistrophoplex bicoloripes Crawford, 1914. Ent. Soc. Wash., Proc. 16: 125. ♀.

Biology: Brandhorst, 1964. Ent. Soc. Amer., Ann. 57: 74-77.

Genus MICRODONTOMERUS Crawford

Microdontomerus Crawford, 1907. N. Y. Ent. Soc., Jour. 15: 178, 179.

Type-species: *Torymus anthonomi* Crawford. Orig. desig.

anthidii (Ashmead). Calif. Host: *Dianthidium pudicum consimile* (Ashm.).

Torymus anthidii Ashmead, 1896. Ent. News 7: 24. ♀.

anthonomi (Crawford). N. J., Va., S. C., Mo., La., Tex., Utah, Idaho, Wash., Oreg. Host: *Acanthoscelides horni* (Pic), *Bruchus brachialis* Fahr., *B. pisorum* (L.), *Brachytarsoides alternatus* (Say), *Anthonomus grandis* Boh., *Ancylics comptana fragariae* (W. and R.), *Coleophora malivorella* Riley; *Bracon mellitor* Say, *Leptochilus* sp.

Torymus anthonomi Crawford, 1907. Canad. Ent. 39: 133. ♀, ♂.

Taxonomy: Pierce, Cushman, and Hood, 1912. U. S. Dept. Agr. Bur. Ent., Bul. 100: 1, 31, 49, 57-62.

fumipennis Crawford. Wyo., s. to N. Mex., w. to Pacific Coast. Host: *Malacosoma californicum* (Pack.), *M. fragile* Stretch, *Choristoneura rosaceana* (Harr.).

Microdontomerus fumipennis Crawford, 1917 (1916). Insecutor Insectiae Menstruus 4: 141-142. ♀, ♂.

Biology: Langston, 1957. Calif. Univ. Pubs., Ent. 14: 29-30.

Genus ROPTROCERUS Ratzeburg

Pachyceras Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 217. Suppressed by Internatl. Comn. Zool. Nomencl., 1957, Opinion 437, pp. 25-40.

Type-species: *Pachyceras xylophagorum* Ratzeburg. Autobasic.

Roptrocerus Ratzeburg, 1848. Ichn. d. Forstins., v. 2, p. 209. Unnecessary n. name for

Pachyceras thought to be preocc. by *Pachycerus* Gyllenhal, 1826. Validated by Internatl. Comn. Zool. Nomencl., 1957 (Opinion 437).

Type-species: *Pachyceras xylophagorum* Ratzeburg. Desig. by Ashmead, 1904.

Rhothrocerus Dalla Torre, 1898. Cat. Hym., v. 5, p. 98. Emend.

Taxonomy: Hedqvist, 1963. Studia. Forest. Suecica 11: 61-70 (Palearctic spp.).

xylophagorum (Ratzeburg). Que. and N. H. to N. C. and La., w. to B. C., Wash., and Ariz.

Host: *Orthotomicus caelatus* (Eichh.), *Phloeosinus dentatus* (Say)?, *Polygraphus rufipennis* (Kby.), *Scolytus rugulosus* (Ratz.), *Dendroctonus frontalis* Zimm., *D. monticolae* Hopk., *D. pseudotsugae* Hopk., *Ips calligraphus* (Germ.), *I. grandicollis* (Eichh.)?, *I. pini* (Say).

Pachyceras Xylophagorum Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 218. ♀.

Pachyceras Eccoptogastri Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 218. ♀.

Roptrocerus rectus Provancher, 1887. Addit. Corr. Faune Ent. Canada. Hym., p. 202. ♀.

Platygerrhus(?) *scolyti* Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 335. "♀" = ♂.

Taxonomy: Hedqvist, 1963. Studia. Forest. Suecica 11: 66-70. —Burks, 1964 (1963). Canad. Ent. 95: 1261.

Biology: Evenden, 1943. U. S. Dept. Agr., Cir. 664: 17. —Reid, 1957. Canad. Ent. 89: 6-7.

—Berisford *et al.*, 1970. Canad. Ent. 102: 489.

SUBFAMILY MEGASTIGMINAE

By E. E. GRISSELL

Genus MEGASTIGMUS Dalman

Megastigmus Dalman, 1820. Svenska Vetensk. Akad., Handl. 41: 178.Type-species: *Pteromalus bipunctatus* Swederus. Desig. by Crosby, 1913.*Trogocarpus* Rondani, 1877. Soc. Ent. Ital., Bol. 9: 204.Type-species: *Torymus ballestrerii* Rondani. Monotypic.*Megalostigmus* Schulz, 1906. Spolia Hym., p. 147. Emend.*Xanthosomoides* Girault, 1913. Canad. Ent. 45: 220.Type-species: *Xanthosomoides maculatipennis* Girault. Orig. desig.*Epimegastigmus* Girault, 1915. Queensland Mus., Mem. 4: 297, 307.Type-species: *Xanthosomoides fulvipes* Girault. Orig. desig.

Nearctic species of this genus are phytophagous in rosaceous and coniferous seeds. Some European species are reported to be parasitic on Cynipidae.

Revision: Milliron, 1949. Amer. Midland Nat. 41: 257-420 (Nearctic spp.). —Boucek, 1970.

Ent. Gaz. 21: 265-275 (west European spp.).

Biology: Lessmann, 1962. Ztschr. f. Angew. Ent. 49: 363-371 (immature stages). —Lessmann, 1962. Ztschr. f. Angew. Ent. 50: 233-241 (host plants).

aculeatus aculeatus (Swederus). Mass., N. Y., N. C., Ohio, Ill.; Europe, Iran, Japan, China.Host: *Rosa canina*, *R. eglanteria*, *R. virginiana*, *R. palustris*?*Pteromalus Aculeatus* Swederus, 1795. Svenska Vetensk. Akad., Handl. 16: 221-222. ♀.

Taxonomy: Balduf, 1957. Ent. Soc. Amer., Ann. 50: 479-483. —Balduf, 1959. Ill. Biol. Monog. 26: 124-130 (also biology).

aculeatus nigroflavus Hoffmeyer. N. J. and Pa., south to Va., west to Ill.; Japan, Russia. Host: *Rosa eglanteria*, *R. gallica*, *R. multiflora*, *R. virginiana*.*Megastigmus aculeatus* var. *nigroflavus* Hoffmeyer, 1931. Ent. Meddel. 16: 324-326. ♀, ♂.

Biology: Balduf, 1969. Ill. Biol. Monog. 26: 124-126.

albifrons Walker. Ariz., Calif. Host: *Pinus ponderosa*.*Megastigmus albifrons* Walker, 1869. Roy. Ent. Soc. London, Trans., p. 314. ♂.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 151.

Biology: Keen, 1958. U. S. Dept. Agr., Tech. Bul. 1169: 102-105.

amelanchieris Cushman. N. H., Vt., N. Y., Pa., W. Va., Minn. Host: *Amelanchier canadensis*, *A. laevis* X *humilis*, *A. sanguinea*, *Sorbus aucuparia*.*Megastigmus amelanchieris* Cushman, 1918 (1917). Ent. Soc. Wash., Proc. 19: 81. ♀, ♂.

Biology: Milliron, 1949. Amer. Midland Nat. 41: 363.

americanus Milliron. N. H., Ont., N. Y. Host: *Sorbus aucuparia*?*Megastigmus slossonae* Crosby, 1913. Ent. Soc. Amer., Ann. 6: 157. ♀. Nomen nudum.*Megastigmus americanus* Milliron, 1949. Amer. Midland Nat. 41: 285, 347, 349, 365. ♀, ♂.

Taxonomy: Gahan, 1951. Canad. Ent. 83: 172.

atedius atedius Walker. Ont., Colo., Calif.; Europe. Host: *Picea engelmannii*?, *P. pungens*, *P. sitchensis*; *Abies arizonica*?. Introduced into Europe from No. America.*Megastigmus Atedius* Walker, 1851. Ann. and Mag. Nat. Hist. 7: 214. ♀.*Megastigmus piceae* Rohwer, 1915. Canad. Ent. 47: 97-98. ♀, ♂.*Megastigmus zwolferi* Scheffer-Immel, 1957. Ztschr. f. Angew. Ent. 41: 52-57. ♀, ♂.

Taxonomy: Boucek, 1970. Ent. Gaz. 21: 265-267 (synonymy).

Biology: Keen, 1958. U. S. Dept. Agr., Tech. Bul. 1169: 106. —Hedlin, 1973. Canad. Ent. 105: 118.

atedius montana Milliron. Mont. Host: *Picea engelmannii*.*Megastigmus piceae* var. *montana* Milliron, 1949. Amer. Midland Nat. 41: 305, 347, 352. ♀, ♂.

Biology: Keen, 1958. U. S. Dept. Agr., Tech. Bul. 1169: 106.

brevicaudis Ratzeburg. Minn. Host: *Sorbus aucuparia*.

Megastigmus brevicaudis Ratzeburg, 1852. Ichn. d. Forstins., v. 3, p. 225. ♀.

Biology: Milliron, 1949. Amer. Midland Nat. 41: 363-365, 393, 402.

caperatus Milliron. Ont. Host: *Picea*? sp.

Megastigmus caperatus Milliron, 1949. Amer. Midland Nat. 41: 306, 347, 350. ♀.

flavipes Ashmead. Fla.

Megastigmus flavipes Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 128. ♂.

floridanus Milliron. Fla.

Megastigmus floridanus Milliron, 1949. Amer. Midland Nat. 41: 342, 348, 350. ♀.

formosus Milliron. Que., Ont. Host: *Crataegus*? sp., *Rosa*? sp.

Megastigmus formosus Milliron, 1949. Amer. Midland Nat. 41: 339, 348, 350. ♀.

gahani Milliron. Minn., Mo., Colo. Host: *Physocarpus opulifolius* var. *intermedius*, *P. opulifolius* var. *luteus*?

Megastigmus gahani Milliron, 1949. Amer. Midland Nat. 41: 275, 347, 351, 365. ♀, ♂.

hoffmeyer Walley. Que., Ont., N. Y. Host: *Abies amabilis*?; *Tsuga canadensis*.

Megastigmus spermatrophus var. *canadensis* Hoffmeyer, 1930. Ent. Meddel. 17: 218. ♀, ♂.

Preocc. by Ashmead, 1887.

Megastigmus spermatrophus var. *hoffmeyer* Walley, 1932. Canad. Ent. 64: 188. N. name.

laricis Marcovitch. N. Y. Host: *Larix laricina*.

Megastigmus laricis Marcovitch, 1914. Canad. Ent. 46: 435. ♀, ♂.

lasiocarpae Crosby. Colo., Alta., B. C., Wash. Host: *Abies amabilis*, *A. lasiocarpa*.

Megastigmus lasiocarpae Crosby, 1913. Ent. Soc. Amer., Ann. 6: 163. ♀, ♂.

Biology: Keen, 1958. U. S. Dept. Agr., Tech. Bul. 1169: 105.

melanus Milliron. Mich.?

Megastigmus melanus Milliron, 1949. Amer. Midland Nat. 41: 302, 347, 351. ♀.

milleri Milliron. B. C., Calif. Host: *Abies grandis*, *A. magnifica* var. *shastensis*.

Megastigmus milleri Milliron, 1949. Amer. Midland Nat. 41: 323, 344, 347, 352. ♀, ♂.

Taxonomy: Hussey and Klingler, 1954. Ent. Monthly Mag. 90: 198-201.

Biology: Keen, 1958. U. S. Dept. Agr., Tech. Bul. 1169: 106.

nigrovariegatus Ashmead. N. S. to Va., w. to Alaska, Calif. Host: *Rosa acicularis*, *R. acicularis* var. *engelmannii*, *R. arkansana*, *R. blanda*, *R. californica*, *R. canina*, *R. carolina*, *R. eglanteria*, *R. lunelli*, *R. macounii*, *R. palustris*, *R. pyrifera*, *R. rugosa*, *R. setigera*, *R. spaldingii*, *R. spinosissima*, *R. suffulta*, *R. ultramontana*, *R. virginiana*, *R. woodsii*, *R. xanthina*.

Megastigmus nigrovariegatus Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 26, 45. ♀.

Taxonomy: Balduf, 1945. Ent. Soc. Wash., Proc. 47: 185-198. —Milliron, 1949. Amer. Midland Nat. 41: 373-390. —Balduf, 1957. Ent. Soc. Amer., Ann. 50: 478-483. —Balduf, 1959. Ill.

Biol. Monog. 26: 130-145. —Boucek, 1971. Ent. Gaz. 22: 43-46.

physocarp Crosby. Que., Ont., Mich., Ind., Minn., Mo., Idaho. Host: *Physocarpus opulifolius*, *P. opulifolius* var. *intermedius*.

Megastigmus physocarp Crosby, 1913. Ent. Soc. Amer., Ann. 6: 158. ♀, ♂.

Biology: Milliron, 1949. Amer. Midland Nat. 41: 365-366.

pinus marginatus Hoffmeyer. Oreg. Host: *Abies grandis*.

Megastigmus pinus var. *marginatus* Hoffmeyer, 1930. Ent. Meddel. 17: 216. ♂.

pinus pinus Parfitt. Conn., Colo., Wash., Oreg., Nev., Calif.; Scotland. Host: *Abies amabilis*, *A. concolor*, *A. grandis*, *A. lasiocarpa*, *A. magnifica*, *A. magnifica* var. *shastensis*, *A. nobilis*, *A. venusta*, *Picea sitchensis*?, *Thuja plicata*?

Megastigmus Pinus Parfitt, 1857. Zoologist 15: 5543. ♀.

Megastigmus pinus var. *crosbyi* Hoffmeyer, 1930. Ent. Meddel. 17: 215. ♀.

Biology: Laidlaw, 1931. Scot. Forestry Jour. 45: 179-184. —Hussey and Klingler, 1954. Ent.

Monthly Mag. 90: 198-201 (*pinus* Parfitt and var. *crosbyi* Hoffmeyer). —Keen, 1958. U. S.

Dept. Agr., Tech. Bul. 1169: 106-108. —Hussey, 1959. Ent. Monthly Mag. 95: 237.

rafni Hoffmeyer. Colo., N. Mex., Idaho, B. C., Oreg., Calif. Host: *Abies concolor*, *A. grandis*, *A. magnifica*, *A. magnifica* var. *shastensis*, *Pseudotsuga taxifolia*?
Megastigmus rafni Hoffmeyer, 1928. Ent. Meddel. 16: 331. ♀.

Taxonomy: Hoffmeyer, 1930. Ent. Meddel. 17: 216-217.

Biology: Keen, 1958. U. S. Dept. Agr., Tech. Bul. 1169: 108-110.

specularis Walley. N. B., N. H., Mass?, Conn., Minn., Man., Sask. Host: *Abies balsamea*.
Megastigmus specularis Walley, 1932. Canad. Ent. 64: 187. ♀, ♂.
Megastigmus groenblomi Kangas, 1945. Ann. Ent. Fenn. 11: 177-183. ♀, ♂.

Taxonomy: Boucek, 1970. Ent. Gaz. 21: 267-268 (synonymy).

Biology: Hedlin, 1957 (1956). Canad. Ent. 88: 691-697. — Annila, 1970. Ann. Ent. Fenn. 36: 186-190 (European hosts).

spermatrophus nigrodorsatus Milliron. Calif. Host: *Pseudotsuga macrocarpa*.
Megastigmus spermatrophus var. *nigrodorsatus* Milliron, 1949. Amer. Midland Nat. 41: 316, 346, 353. ♀, ♂.

Biology: Keen, 1958. U. S. Dept. Agr., Tech. Bul. 1169: 111.

spermatrophus spermatrophus Wachtl. Colo., N. Mex., B. C., Wash., Oreg., Calif.; Scotland, Germany, New Zeal. Host: *Pseudotsuga taxifolia*, *P. menziesii*; *Abies*? spp.
Megastigmus spermatrophus Wachtl, 1893. Wien. Ent. Ztg. 12: 25. ♀, ♂.
Megastigmus spermatotrophus Dalla Torre, 1898. Cat. Hym., v. 5, p. 287. Emend.

Biology: Crosby, 1909. N. Y. (Cornell) Agr. Expt. Sta., Bul. 265: 379-380. — Miller, 1916. Jour. Agr. Res. 6: 65-68. — Milliron, 1949. Amer. Midland Nat. 41: 367-368, 390-391. — Hussey, 1955. Roy. Ent. Soc. London, Trans. 106: 133-151. — Hedlin, 1958. Ent. Soc. B. C., Proc. 55: 37. — Keen, 1958. U. S. Dept. Agr., Tech. Bul. 1169: 110-111. — Hussey, 1959. Ent. Monthly Mag. 95: 237.

tsugae heterophyllae Milliron. B. C. Host: *Tsuga heterophylla*.
Megastigmus tsugae var. *heterophyllae* Milliron, 1949. Amer. Midland Nat. 41: 309, 347, 353. ♀, ♂.

Biology: Keen, 1958. U. S. Dept. Agr., Tech. Bul. 1169: 111.

tsugae tsugae Crosby. Western U. S. Host: *Abies amabilis*?, *Tsuga mertensiana*.
Megastigmus tsugae Crosby, 1913. Ent. Soc. Amer., Ann. 6: 162. ♀.

Biology: Keen, 1958. U. S. Dept. Agr., Tech. Bul. 1169: 111.

Genus EUMEGASTIGMUS Hussey

Eumegastigmus Hussey, 1956. Roy. Ent. Soc. London, Proc., Ser. B: Taxonomy 25: 157.
Type-species: *Eumegastigmus hypogaea* Hussey. Orig. desig.

transvaalensis Hussey. Calif.; S. Africa, Canary Isls. Host: *Schinus molle* seeds.
Eumegastigmus transvaalensis Hussey, 1956. Roy. Ent. Soc. London, Proc., Ser. B: Taxonomy 25: 161. ♀, ♂.

Biology: Harper and Lockwood, 1961. Calif. Dept. Agr., Bul. 50: 129.

SUBFAMILY PODAGRIONINAE

By E. E. GRISELL

Members of this subfamily are parasitic in mantid egg cases.

Taxonomy: Ferriere, 1955. Soc. Roy. Ent. de Belg., Mem. 27: 207. — Burks, 1958. In Krombein, et al., U. S. Dept. Agr., Agr. Monog. 2, Sup. 1: 82. — Habu, 1962. Faun. Jap., Chalcid., Leucospid., Podagrionid., p. 178.

Genus PODAGRION Spinola

Podagrion Spinola, 1811. Paris Mus. d'Hist. Nat., Ann. 17: 147.
Type-species: *Podagrion splendens* Spinola. Monotypic.
Palmon Dalman, 1825. Svenska Vetensk. Akad., Handl. 56: 388.

- Type-species: *Palmon bellator* Dalman. Desig. by Gahan and Fagan, 1923.
Priomerus Walker, 1833. Ent. Mag. 1: 116, 118.
 Type-species: *Priomerus pachymerus* Walker. Monotypic.
Pachytomus Westwood, 1847. Ent. Soc. London, Trans. 4: 260.
 Type-species: *Pachytomus klugianus* Westwood. Monotypic.
Notopodion Dahlbom, 1857. Öfvers. Svenska Vetensk. Akad., Forh. 14: 295.
 Type-species: *Podagrion splendens* Spinola. Desig. by Gahan and Fagan, 1923.
Bactyrischion Costa, 1857. Accad. della Sci. Fis. e Mat. Napoli, Mem. (A) 2: 223.
 Type-species: *Bactyrischion bicolatum* Costa. Monotypic.
Blephonira Holmgren, 1868. Eug. Resa, Zool., 6, Ins. 1: 438.
 Type-species: *Blephonira fulvipes* Holmgren. Monotypic.
Cyanostola Saussure, 1890. In Grandidier, Hist. Madagascar 20, Hym. 1, pl. 15, fig. 30.
 Type-species: *Cyanostola coerulea* Saussure. Monotypic.
Notopodium Schulz, 1906. Spolia Hym., p. 144. Emend.
Podagrion Schulz, 1906. Spolia Hym., p. 150. Emend.
Podagrionella Girault, 1913. Arch. f. Naturgesch. 79 (A) pt. 6: 96.
 Type-species: *Podagrionella bella* Girault. Monotypic.
Pachytomoidella Girault, 1913. Wis. Nat. Hist. Soc., Bul. 11: 40.
 Type-species: *Pachytomoidella magniclavus* Girault. Orig. desig.
Propodagrion Girault, 1915. Queensland Mus., Mem. 4: 287.
 Type-species: *Propodagrion worcesteri* Girault. Orig. desig.
Propachytomoides Girault, 1917. Insector Inscitiae Menstruus 5: 152.
 Type-species: *Propachytomoides semialbiclavus* Girault. Orig. desig.
- Taxonomy: Ferriere, 1955. Soc. Roy. Ent. de Belg., Mem. 27: 216.
brasiliense Howard. Fla.; W. Indies. Host: Mantid egg mass.
Podagrion brasiliensis Howard, 1894. Linn. Soc. London, Jour., Zool. 25: 83. ♀.
- Taxonomy: Gahan, 1951. Canad. Ent. 83: 176.
crassiclava Gahan, Fla., Tex., Ariz.; Mexico. Host: *Mantis* sp., *Stagmomantis limbata* (Hahn).
Podagrion crassiclava Gahan, 1922. U. S. Natl. Mus., Proc. 61 (24): 6. ♀, ♂.
mantidiphagum Girault. Ariz.; Mexico, W. Indies. Host: Egg mass of undet. mantid.
Podagrion mantidiphagum Girault, 1917. Entomologist 50: 37. ♀, ♂.
mantis Ashmead. N. J. to Fla., w. to Mo., La., Kans., Tex., Ariz., Calif.; Mexico, Hawaii. Host: *Stagmomantis carolina* (Johan.), *S. limbata* (Hahn)?, *Tenodera angustipennis* Sauss., *T. aridifolia sinensis* Sauss.
Podagrion mantis Ashmead, 1886. Canad. Ent. 18: 57. ♀.
- Biology: Breland, 1941. Ent. Soc. Amer., Ann. 34: 99-133. —Gurney, 1959. Ent. Soc. Wash., Proc. 61: 23.

UNPLACED TAXA OF TORYMINAE

By E. E. GRISELL

- Diomorus biorhizae* Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 186. ♀. Ont. Host: *Xanthoteras quercusforticorne* (Walsh).
 Taxonomy: Burks, 1967. In Krombein, et al., U. S. Dept. Agr., Agr. Monog. 2, Sup. 2: 250 (Probably a species of *Torymus*; type apparently lost).
Lochites punctata Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 185. ♂. Fla.

Family PTEROMALIDAE

By B. D. BURKS

This is the largest and most difficult family of the Chalcidoidea. Almost all species are parasitic, but a very few are gall formers, a few are phytophagous, and some others should be considered to be predaceous. The latter feed, as larvae, on a succession of eggs or larvae of their prey, while enclosed within stems of grasses or other herbaceous plants.

Revision: Kurdjumov, 1913. Ent. Obozr. 13: 1-24 (genera). — Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 1-908 (British and North Western European species, with numerous North American forms considered).

Taxonomy: Ashmead, 1904. Carnegie Mus., Mem. 1: 270-285, 311-334. — Girault, 1913-1915. Queensland Mus., Mem. 2: 303-334; 3: 313-346; 4: 185-202. — Boucek, 1957. In Kratochvil, Klic. Zvireny CSR, v. 2, pp. 220-242 (Eng. transl., 1964.. Ent. Soc. Canada, Mem. 34: 26-58). — Riek, 1970. In CSIRO, Ins. Australia, pp. 920-923.

SUBFAMILY ORMYRINAE

Genus MONOBAEUS Foerster

Monobaeus Foerster, 1860. Naturh. Ver. Rheinlande, Verh. 17: 95.

Type-species: *Monobaeus cingulatus* Foerster. Desig. by Ashmead, 1904.

hegeli Girault. Mich.

Monobaeus hegeli Girault, 1917. Ent. News 28: 106. ♀.

Genus ORMYRUS Westwood

Ormyrus Westwood, 1832. London, Edinb. and Dublin Phil. Mag. and Jour. Sci. (3) 1: 127.

Type-species: *Ormyrus punctiger* Westwood. Monotypic.

Periglyphus Boheman, 1833. Svenska Vetensk. Akad., Handl. 54: 378.

Type-species: *Periglyphus gastris* Boheman. Monotypic.

Siphonura Nees, 1834. Hym. Ich. Aff. Monog., v. 2, p. 81.

Type-species: *Siphonura variolosa* Nees. Desig. by Gahan and Fagan, 1923.

Cyrtosoma Perris, 1840. Soc. Ent. de France, Ann. 9: 96.

Type-species: *Cyrtosoma papaveris* Perris. Monotypic.

Wania Risbec, 1951. Inst. Franc. d'Afr. Noire, Mem. 13: 294.

Type-species: *Wania ornata* Risbec. Monotypic.

brunneipes Provancher. Que., Ont., s. to Fla., w. to Mich. and Ill. Ecology: Emerges from bud galls of *Acraspis erinacei* (Beut.) on *Quercus alba*; from twig galls of *Callirhytis quercusventricosa* (Bass.), *Disholcaspis bassetti* (Gil.), and *D. quercusmamma* (Walsh) on *Quercus* spp.; from stem galls of *Aulacidea podagrae* (Bass.) on *Lactuca* sp.; from stem galls of *Diastraphus nebulosus* (O. S.) on *Rubus* sp.

Ormyrus brunneipes Provancher, 1887 (May). Addit. Corr. Faune Ent. Canada Hym., p. 198. ♀.

Ormyrus ventricosus Ashmead, 1887 (Nov.). Amer. Ent. Soc., Trans. 14: 189. ♂.

Taxonomy: Burks, 1964 (1963). Canad. Ent. 95: 1259 (syn.).

Biology: Triggerson, 1914. Ent. Soc. Amer., Ann. 7: 8-9.

distinctus Fullaway. Calif. Ecology: Emerges from twig or stem gall made by *Disholcaspis simulata* Kins. on *Quercus dumosa*.

Ormyrus distinctus Fullaway, 1912. N. Y. Ent. Soc., Jour. 20: 276. ♀.

dryorhizoxeni Ashmead. Fla. Ecology: Emerges from fig-shaped root gall of *Belonocnema treatae* Mayr on *Quercus virginiana*.

Ormyrus dryorhizoxeni Ashmead, 1885. Amer. Ent. Soc., Trans. 12: Proc. p. xiv. ♀.

labotus Walker. Fla. Ecology: Emerges from twig galls made by *Callirhytis difficilis* (Ashm.) and *Disholcaspis quercusvirens* (Ashm.) on *Quercus*.

Ormyrus labotus Walker, 1843. Soc. Ent. de France, Ann. (2) 1: 148. ♀, ♂.

Ormyrus andricus Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 128. ♀.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32: 153 (syn.; lectotype designated).

minutus Ashmead. N. J., Fla., Mich. Ecology: Emerges from leaf petiole gall of *Neuroterus noxiosus* (Bass.) on *Quercus* spp.

Ormyrus minutus Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 189. ♀, ♂.

quercipilulae (Fitch). Maine, N. Y., N. J. Ecology: Emerges from oak leaf gall of *Acraspis pezomachoides* (O. S.).

Pteromalus Quercipilulae Fitch, 1859 (1858). N. Y. State Agr. Soc., Trans. 18: 819.

quercus Ashmead. Fla. Ecology: Emerges from twig gall of *Callirhytis quercusbatatoides* (Ashm.) on *Quercus virginiana*.

Ormyrus quercus Ashmead, 1886. Amer. Ent. Soc., Trans. 14: 128. ♀, ♂.

rosae Ashmead. N. J., s. to Fla., w. to Kans., and Colo. Ecology: Emerges from leaf gall of *Diplolepis ignota* (O. S.) on *Rosa*.

Ormyrus rosae Ashmead, 1885. Amer. Ent. Soc., Trans. 12: Proc. p. xiv. ♀.

thymus Girault. Calif.

Ormyrus thymus Girault, 1917. Brooklyn Ent. Soc., Bul. 12: 87. ♀.

unifasciatipennis Girault. Calif.

Ormyrus unifasciatipennis(!) Girault, 1917. Brooklyn Ent. Soc., Bul. 12: 87. ♀.

unimaculatipennis Girault. La.

Ormyrus unimaculatipennis Girault, 1916. Canad. Ent. 48: 342. ♀.

vacciniicola Ashmead. Maine, Ont., s. to N. C. Ecology: Emerges from stem gall of *Hemadas nubilipennis* (Ashm.) on *Vaccinium*.

Ormyrus vacciniicola Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 189. ♀.

Biology: Driggers, 1927. N. Y. Ent. Soc., Jour. 35: 254-258. —McAlister and Anderson, 1932. Jour. Econ. Ent. 25: 1165-1169. —Judd, 1959. Amer. Micros. Soc., Trans. 78: 213-214.

SUBFAMILY PERILAMPINAE

Taxonomy: Riek, 1966. Austral. Jour. Zool. 14: 1207-1236 (subfam. of Pteromalidae).

Genus EUPERILAMPUS Walker

Euperilampus Walker, 1871. Notes on Chalcid., pt. 4, p. 67.

Type-species: *Perilampus gloriosus* Walker. Orig. desig.

Taxonomy: Burks, 1969. Ent. Soc. Wash., Proc. 71: 78-79.

krombeini Burks. N. Mex., Ariz. Superficially looks much like a chrysidid.

Euperilampus krombeini Burks, 1969. Ent. Soc. Wash., Proc. 71: 79. ♀, ♂.

triangularis (Say). Que., Maine., s. to Fla., w. to Kans., Colo.

Perilampus triangularis Say, 1828. Contrib. Maclur. Lyc. Phila. 1: 78.

Taxonomy: Glover, 1878. U. S. Dept. Agr., Ann. Rpt. for 1877, p. 101. —Crawford, 1914. Ent. Soc. Wash., Proc. 16: 69.

Morphology: Burks, 1938. Ent. Soc. Amer., Ann. 31: 161 (venation).

Genus PERILAMPUS Latreille

Perilampus Latreille, 1809. Gen. Crust. Ins., v. 4, p. 30.

Type-species: *Diplolepis violacea* Fabricius. Desig. by Latreille, 1810.

Cinipsillum Lamarck, 1817. Hist. Nat. Anim. sans Vert., v. 4, p. 156.

Type-species: *Chalcis violacea* Panzer. Desig. by Gahan and Fagan, 1923.

Cynipsillum Agassiz, 1845. Nomencl. Zool., Index Univ., p. 325. Emend.

The species described as *Perilampus alexinus* Walker is Chalcididae, genus *Brachymeria* Westwood (Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32: 164).

Revision: Smulyan, 1936. U. S. Natl. Mus., Proc. 83: 369-412. —Steffan, 1952. Soc. Ent. de France, Bul. 57: 68-74 (Palearctic spp.).

anomocerus Crawford. N. C., Colo., Idaho.

Perilampus anomocerus Crawford, 1914. Ent. Soc. Wash., Proc. 16: 72. ♀, ♂.

canadensis Crawford. Que., Ont., N. Y., Pa., Md., Va., Minn., La. Host: *Ectemnius* (*Hypocraebro*) *continuus* (F.), *E. (H.) stirpicola* (Pack.), *E. (H.) paucimaculatus* (Pack.), *Euphilis* sp.

Perilampus canadensis Crawford, 1914. Ent. Soc. Wash., Proc. 16: 74. ♀, ♂.

Biology: Krombein, 1960. Ent. News 71: 32, 66. —Harman and Kulman, 1962. Jour. Econ. Ent. 55: 1007. —Krombein, 1964. Biol. Soc. Wash., Proc. 77: 101-102.

carinifrons Crawford, Wis., Tex.

Perilampus carinifrons Crawford, 1914. Ent. Soc. Wash., Proc. 16: 71. ♀, ♂.

carolinensis Smulyan. Vt., Conn., N. Y., N. J., Va., N. C.

Perilampus carolinensis Smulyan, 1936. U. S. Natl. Mus., Proc. 83: 376. ♀, ♂.

chrysopae Crawford. Que., Ont., s. to Fla., w. to Wash., Oreg., Calif.; Mexico. Host: *Chrysopa* sp., *C. californica* Coq., *C. oculata* Say, *C. rufilabris* Burm., *Symphorobius angustus* (Banks). May also parasitize ichneumonid primary parasites of Chrysopidae.

Perilampus chrysopae Crawford, 1914. Ent. Soc. Wash., Proc. 16: 73. ♀, ♂.

Perilampus chrysopae var. *laevicephalus* Crawford, 1917 (1916). Insecutor Inscitiae Menstruus 4: 144. ♀, ♂.

Taxonomy: Kerrich, 1958. Opusc. Ent. 23: 82 (difficult to separate from Palearctic sp.).

Biology: Smith, 1917. Psyche 24: 66-68. —Parker, 1924. Soc. Ent. de France, Ann. 93: 275.

—Clancy, 1946. Univ. Calif. Pubs., Ent. 7: 440-448.

crawfordi Smulyan. N. Y., N. J., Pa., Md., Va.

Perilampus crawfordi Smulyan, 1936. U. S. Natl. Mus., Proc. 83: 384. ♀, ♂.

fulvicornis Ashmead. Que., s. to Fla., w. to B. C. and Calif. Host: *Zenillia* sp.; *Agathis acrobasis* (Cush.), *A. pini* Mues., *Apanteles* sp., *A. cacoeciae* Riley, *A. epinotiae* Vier., *Ascogaster* sp., *A. quadridentata* Wesm., *Bracon variabilis* (Prov.), *Calliphialtes grapholithae* (Cress.), *Macrocentrus pallisteri* DeG., *Meteorus* sp., *M. trachynotus* Vier., *Orgilus maculiventris* (Cress.), *Parasierola punctaticeps* Kief., *Phanerotoma fasciata* Prov., *P. tibialis* (Hald.), *Pimpla inconstans* (Cush.), *Temelucha cooki* (Weed).

Perilampus(?) *fulvicornis* Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 126. ♂.

Taxonomy: Peck, 1963. Canad. Ent., Sup. 30: 517. —Finlayson, 1967. Canad. Ent. 99: 1261 (larva).

Biology: Nickels et al., 1950. U. S. Dept. Agr., Tech. Bul. 1011: 20-21. —Judd, 1952. Nova Scotia Inst. Sci., Proc. 22: 2. —Raizenne, 1952. Canad. Div. Forest Biol., Forest Lep. South. Ont. and Par., p. 170. —Miller, 1953. Ohio Jour. Sci. 53: 62-63. —Miller, 1955. Ohio Jour. Sci. 55: 317-319. —Miller and Neiswander, 1956. Ohio Agr. Expt. Sta., Res. Bul. 779: 19.

—Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 87. —Beique, 1960. Canad. Ent. 92: 859. —Bennett, 1961. Tenn. Acad. Sci., Jour. 36: 353. —Harman and Kulman, 1962. Jour.

Econ. Ent. 55: 1007. —Guajardo and Ortiz, 1966. Soc. Nuevoleon Hist. Nat., Bol. 1: 45.

gahani Smulyan. Colo., N. Mex.

Perilampus gahani Smulyan, 1936. U. S. Natl. Mus., Proc. 83: 401. ♂.

granulosus Crawford. N. J., s. to Ala., w. to Kans. and Tex. Host: *Ancylys comptana fragariae* W. and R., *Gnorimoschema operculella* (Zell.). Almost certainly a secondary parasite of these hosts.

Perilampus granulosus Crawford, 1914. Ent. Soc. Wash., Proc. 16: 73. ♀, ♂.

hyalinus Say. Que., Ont., s. to Fla., w. to B. C., and Calif. Host: *Acemyia tibialis* Coq., *Acridomyia canadensis* Snyder, *Blaesoxipha atlantis* (Ald.), *B. hunteri* (Hough), *B. kellyi* (Ald.), *B. reversa* (Ald.), *Blepharipa scutellata* (R.-D.), *Compsilura concinnata* (Meig.), *Diplostichus lophyri* (Townes.), *Helicobia rapax* (Walk.), *Lespesia euchaetiae* (Web.), *L. frenchii* (Will.), *L. melalophae* (Allen), *Mericia aldrichi* (Townes.), *M. ampela* (Walk.), *Sarcophaga* sp., *Senotainia trilineata* (V. d. W.), *Servaisia coloradensis* (Ald.); *Apanteles hyphanthiae* Riley, *A. melanoscelus* (Ratz.), *Campoplex* sp., *C. validus* (Cress.), *Diprion* sp., *Hyposoter fugitivus* Say, *H. pilosulus* (Prov.), *Meteorus hyphanthiae* Riley, *Microplitis croceipes* (Cress.), *Monoctenus fulvus* (Nort.), *Neodiprion abbotii* (Leach), *N. lecontei* (Fitch), *N. pinetum* (Nort.), *N. pratti banksianae* Roh., *N. pratti* (Dyar), *N. swainei* Midd., *N. virginiana* Roh., *Phobocampe pallipes* (Prov.). This may be a species complex, rather than a single species; careful rearings have produced specimens, at present indistinguishable, that are either primary or secondary parasites.

Perilampus hyalinus Say, 1828. Contrib. Maclur. Lyc. Phila. 1: 79.

Perilampus Entellus Walker, 1843. Ann. and Mag. Nat. Hist. (1) 12: 103. ♀, ♂.

Perilampus cyaneus Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 573.

Perilampus aciculatus Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 199. ♀.

- Taxonomy: Finlayson, 1963. *Canad. Ent.* 95: 499-501 (larvae). — Burks, 1964 (1963). *Canad. Ent.* 95: 1259-1260 (*aciculatus* Prov.). — Burks, 1975. *Brit. Mus. (Nat. Hist.) Ent.*, *Bul.* 32: 150 (*entellus*; syn., lectotype).
- Biology: Cook and Davis, 1891. *Mich. Agr. Expt. Sta.*, *Bul.* 76: 16. — Quaintance and Brues, 1905. *U. S. Dept. Agr., Bur. Ent.* *Bul.* 50: 122. — Smith, 1912. *U. S. Dept. Agr., Bur. Ent., Tech. Ser.* 19: 34-63. — Thompson, 1915. *Bul. Sci. France et Belg.* 48: 321-324, 339-348 (planidium). — Smith, 1916. *Jour. Econ. Ent.* 9: 481. — Smith, 1916. *Science* 44: 925-926. — Smith, 1917. *Psyche* 24: 64-68. — Parker, 1924. *Soc. Ent. de France, Ann.* 93: 272, 300. — Proper, 1934. *Jour. Agr. Res.* 48: 373. — Decker, 1935. *Iowa State Col., Jour. Sci.* 9: 569. — Flanders, 1937. *Jour. Econ. Ent.* 30: 970. — Frisch, 1937. *Psyche* 43: 84-85. — Lal, 1939. *Current Sci.* 8: 58. — Smith, 1940 (1939). *Ent. Soc. Ont., Ann. Rpt.* 70: 61-62. — Salt, 1941. *Cambridge Phil. Soc., Biol. Rev.* 16: 252. — Baldwin and Coppel, 1950 (1949). *Canad. Ent.* 81: 244. — Craighead, 1950. *U. S. Dept. Agr., Misc. Pub.* 657: 612. — Raizenne, 1952. *Canad. Div. Forest Biol., Forest Lep. South. Ont. and Par.*, p. 31. — Smith, 1953. *Canad. Jour. Res.* 36: 254-258. — Tripp, 1962. *Canad. Ent.* 94: 1251. — Riordan, 1963. *Canad. Jour. Zool.* 41: 1242. — Becker and Benjamin, 1964. *Jour. Econ. Ent.* 57: 356. — Medler, 1965. *Ent. Soc. Amer., Ann.* 58: 140. — Huggans and Blickenstaff, 1966. *Mo. Agr. Expt. Sta., Res. Bul.* 903: 36. — Wilkinson *et al.*, 1966. *Ent. Soc. Amer., Ann.* 59: 791. — Hinks, 1971. *Canad. Ent.* 103: 182-187.
- laevis* Provancher. Described from Ont. but probably not North American. Boucek, 1974 (*Jour. Ent. (B)* 43: 134) has described a new genus, *Peckianus*, for this species and places it in the Eutrichosomatinae.
- Perilampus laevis* Provancher, 1887. *Addit. Corr. Faune Ent. Canada Hym.*, p. 199. ♀.
- lepreos* Walker. Ga. Type lost.
- Perilampus lepreos* Walker, 1946. *List. Hym. Brit. Mus., Chalcid.*, v. 1, p. 89.
- muesebecki* Smulyan. N. H., N. Y., Pa., D. C., Fla., Nebr., Kans., Colo.
- Perilampus muesebecki* Smulyan, 1936. *U. S. Natl. Mus., Proc.* 83: 407. ♀, ♂.
- nitidus* Smulyan. Pa., La.
- Perilampus canadensis* var. *nitidus* Smulyan, 1936. *U. S. Natl. Mus., Proc.* 83: 393. ♀, ♂.
- Taxonomy: Peck, 1951. In *Muesebeck, et al.*, *U. S. Dept. Agr., Agr. Monog.* 2: 517.
- ocellatus* Smulyan. Ga., Mo.
- Perilampus ocellatus* Smulyan, 1936. *U. S. Natl. Mus., Proc.* 83: 390. ♀, ♂.
- platygaster* Say. Que., Ont., s. to N. C., w. to Colo. and Tex. Host: *Meteorus dimidiatus* (Cress.).
- Perilampus platygaster* Say, 1836. *Boston Jour. Nat. Hist.* 1: 274.
- Biology: Strauss, 1916. *U. S. Dept. Agr., Bul.* 419: 10.
- prothoracicus* Smulyan. Ont., N. H., Md., Va., Mich., La., Nebr., Wash. Host: *Laspeyresia pomonella* (L.). Probably actually a secondary parasite.
- Perilampus fulvicornis* var. *prothoracicus* Smulyan, 1936. *U. S. Natl. Mus., Proc.* 83: 403. ♀.
- Taxonomy: Peck, 1963. *Canad. Ent.*, *Sup.* 30, p. 523.
- Biology: Raizenne, 1952. *Canad. Div. Forest Biol., Forest Lep. South. Ont. and Par.*, pp. 243-244.
- regalis* Smulyan. N. C., Mo.
- Perilampus regalis* Smulyan, 1936. *U. S. Natl. Mus., Proc.* 83: 378. ♀.
- robertsoni* Crawford. Ont., Ill., Nebr., Colo.
- Perilampus robertsoni* Crawford, 1914. *Ent. Soc. Wash., Proc.* 16: 71. ♀, ♂.
- rohweri* Smulyan Ont., N. J.
- Perilampus rohweri* Smulyan, 1936. *U. S. Natl. Mus., Proc.* 83: 396. ♀, ♂.
- similis* Crawford. Man., s. to Tex., w. to Alta., Oreg., Calif. Host: *Cremnops vulgaris* (Cress.), *Meteorus loxostegei* Vier.
- Perilampus similis* Crawford, 1914. *Ent. Soc. Wash., Proc.* 16: 73. ♀.
- Biology: Simmonds, 1947. *Bul. Ent. Res.* 38: 145, 378.

- stygicus* Provancher. Que., Maine, s. to Va., w. to Kans., La. Host: *Macrocentrus* sp.
Perilampus stygicus Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 406. ♀.
 Taxonomy: Burks, 1964 (1963). Canad. Ent. 95: 1260.
subcarinatus Crawford. N. Y., Ala., Tex., Nebr., Colo., Idaho, Calif.
Perilampus subcarinatus Crawford, 1914. Ent. Soc. Wash., Proc. 16: 70. ♀.
Perilampus bakeri Crawford, 1914. Ent. Soc. Wash., Proc. 16: 72. ♀, ♂.

- Taxonomy: Girault, 1916. Jour. Ent. and Zool. 8: 121 (syn.).
tristis Mayr. N. Y., s. to Va., w. to Mich. and Ky.; Europe. Host: *Ascogaster quadridentata* Wesm., *Cremastus* sp.
Perilampus tristis Mayr, 1905. Zool.-Bot. Gesell. Wien, Verh. 55: 564. ♀, ♂.
Perilampus batavus van Burgst, 1919 (1918). Tijdschr. v. Ent. 61: 146.
Perilampus capitatus Smulyan, 1936. U. S. Natl. Mus., Proc. 83: 397. ♀, ♂.

Taxonomy: Ruschka, 1924. Deut. Ent. Ztschr. 1: 93 (syn.). — Steffan, 1952. Soc. Ent. de France, Bul. 57: 69, 72 (syn.).

Biology: Bergold and Ripper, 1937. Ztschr. f. Parasitenk. 9: 394-417. — Simmonds, 1944. Sci. Agr. 25: 1-30. — Jaynes and Marucci, 1947. Jour. Econ. Ent. 40: 11-12. — Geier, 1957. Rev. Suisse de Zool. 64: 514. — Zech, 1959. Ztschr. f. Angew. Ent. 44: 214. — Zwolfer, 1963. Ztschr. f. Angew. Ent. 51: 352. — Balduf, 1966. Ent. Soc. Amer., Ann. 59: 1046-1049. — Gothilf, 1969. Entomophaga 14: 199.

Morphology: Parker, 1924. Soc. Ent. de France, Ann. 93: 265, 275 (larva). — Domenichini, 1953. Univ. Milano, Bol. Zool. e Bach. 19: 229 (gaster).

Genus CHRYSOLAMPUS Spinola

Chrysolampus Spinola, 1811. Paris Mus. d'Hist. Nat., Ann. 17: 147.

Type-species: *Diplolepis splendidula* Spinola. Monotypic.

Elatus Walker, 1848. List Hym. Brit. Mus., Chalcid., v. 2, pp. 104, 153.

Type-species: *Elatus thenae* Walker. Monotypic.

Lamprostylus Foerster, 1856. Hym. Stud., v. 2, p. 42 (no species).

Type-species: *Lamprostylus punctatus* Foerster. Included by Foerster, 1859.

Parelatus Girault, 1916. Queensland Mus., Mem. 5: 226.

Type-species: *Elatus ater* Girault. Orig. desig.

Revision: Crawford, 1914. Ent. Soc. Wash., Proc. 16: 74.

Taxonomy: Boucek, 1956. Mus. Natl. Pragae, Acta Ent. 1: 87-88. — Kerrich, 1958. Opusc. Ent. 33: 82.

anobii Burks. Va. Ecology: Reared from wood infested with anobiid beetles.

Chrysolampus anobii Burks, 1969. Ent. Soc. Wash., Proc. 71: 80. ♀, ♂.

lycti Crawford. W. Va. Host: *Lyctus striatus* Melsh.

Chrysolampus lycti Crawford, 1914. Ent. Soc. Wash., Proc. 16: 75. ♀, ♂.

parcipunctatus Crawford. Calif.

Chrysolampus parcipunctatus Crawford, 1914. Ent. Soc. Wash., Proc. 16: 75. ♀.

schwarzi Crawford. Utah.

Chrysolampus schwarzi Crawford, 1914. Ent. Soc. Wash., Proc. 16: 76. ♀.

sisymbrii (Ashmead). N. Mex.

Elatus sisymbrii Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 218. ♂.

SUBFAMILY BRACHYSCELIDIPHAGINAE

This subfamily, with numerous members in South America and Australia, has only one species in North America, and none in the Palearctic region.

Taxonomy: Gahan and Ferriere, 1947. Ent. Soc. Amer., Ann. 40: 271-302. — Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 95.

Genus **HEMADAS** Crawford

Hemadas Crawford, 1909. Canad. Ent. 41: 98.

Type-species: *Megorismus nubilipennis* Ashmead. Orig. desig.

Parhabritys Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. V, p. 2.

Type-species: *Megorismus nubilipennis* Ashmead. Orig. desig.

Revision: Gahan and Ferriere, 1947. Ent. Soc. Amer., Ann. 40: 292.

nubilipennis (Ashmead). Maine, Ont., Conn., N. J., Va., Fla., Ohio, Ind. Ecology: Produces stem galls on *Vaccinium* spp.

Megorismus nubilipennis Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 192. ♀.

Biology: Driggers, 1927. N. Y. Ent. Soc., Jour. 35: 253-259. —McAlister and Anderson, 1932.

Jour. Econ. Ent. 25: 1164-1169. —Judd, 1959. Amer. Micros. Soc., Trans. 78: 212-214.

Morphology: Snodgrass, 1910. U. S. Natl. Mus., Proc. 39: 65.

SUBFAMILY EUTRICHOSOMATINAE

Genus **EUTRICHOSOMA** Ashmead

Eutrichosoma Ashmead, 1899. Ent. Soc. Wash., Proc. 4: 204 (no species).

Type-species: *Eutrichosoma mirabile* Ashmead. Desig. by Ashmead, 1904.

mirabile Ashmead. Md., D. C., Ga., Kans., Okla., Tex., N. Mex., Mont., Idaho. Host: *Auletes tenuipes* (Lec.), *Smicronyx tychoides* (Lec.).

Eutrichosoma mirabile Ashmead, 1904. Carnegie Mus., Mem. 1: 291. ♀.

Eutrichosoma albipes Crawford, 1908 (1907). Ent. Soc. Wash., Proc. 9: 158. ♀, ♂.

Taxonomy: Gahan and Peck, 1946. Wash. Acad. Sci., Jour. 36: 315.

Biology: Pierce, 1910. Jour. Econ. Ent. 3: 453. —Pierce *et al.*, 1912. U. S. Dept. Agr., Bur.

Ent. Bul. 100: 75, 79.

SUBFAMILY CLEONYMINAE

Revision: Kerrich and Graham, 1957. Soc. Brit. Ent., Trans. 12: 265-311 (British and Swedish spp., with some Nearctic spp.). —Boucek, 1959 (1958). Mus. Natl. Pragae, Acta Ent. 32: 353-386 (genera of the world). —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 35-42 (Western European spp.).

TRIBE CLEONYMINI

Genus **HEYDENIA** Foerster

Heydenia Foerster, 1856. Hym. Stud., v. 2, pp. 46, 48, 49.

Type-species: *Heydenia pretiosa* Foerster. Monotypic.

Revision: Hedqvist, 1957. Opusc. Ent. 22: 39-48 (world fauna).

unica Cook and Davis. Md., Va., N. C., Ga., Ala., W. Va., Mich., Tex., Mont., Ariz., Calif. Host:

Dendroctonus sp., *D. frontalis* Zimm., *Ips* sp., *Phloeosinus* sp., *Pityophthorus* sp.,

Polygraphus sp., *Scolytus rugulosus* (Ratz.).

Heydenia unica Cook and Davis, 1891. Mich. Agr. Expt. Sta., Bul. 73: 15. ♀, ♂.

Biology: De Leon, 1934. Canad. Ent. 66: 60 (under name *hubbardi*, nom. nud.). —Franklin, 1969. Ga. Ent. Soc., Jour. 4: 121.

Genus **CLEONYMUS** Latreille

Cleonymus Latreille, 1809. Gen. Crust. Ins., v. 4, p. 29.

Type-species: *Diplolepis depressa* Fabricius. Desig. by Latreille, 1810.

californicus Girault. Calif.

Cleonymus californicus Girault, 1917. Jour. Ent. and Zool. 9: 11. ♀.

nigriclavus Girault. Fla.

Cleonymus nigriclavus Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 6. ♀.

TRIBE CHALCEDECTINI

Taxonomy: Steffan, 1968. Entomophaga 13: 209-211. —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 36.

Genus CHALCEDECTUS Walker

Chalcedectus Walker, 1852. Ann. and Mag. Nat. Hist. (2): 10: 47.

Type-species: *Chalcedectus maculicornis* Walker. Monotypic.

Chalcodectus Dalla Torre, 1898. Cat. Hym., v. 5, pp. 186, 569. Emend.

Chalcedectus Ashmead, 1899. Ent. Soc. Wash., Proc. 4: 201. Emend.

Episystole Girault, 1927. So. Austral. Mus., Rec. 3: 317.

Type-species: *Episystole poeta* Girault. Orig. desig.

Neochalcodectus Masi, 1936. Soc. Ent. Ital., Bol. 68: 68.

Type-species: *Neochalcodectus sinaiticus* Masi. Monotypic.

Taxonomy: Boucek, 1959. Mus. Natl. Pragae, Acta Ent. 33: 568.

texanus Brues. Tex.

Chalcedectes texanus Brues, 1907. Wis. Nat. Hist. Soc., Bul. 5: 106. ♂.

Genus EUCHRYSIA Westwood

Euchrysia Westwood, 1874. Thesaurus Ent. Oxon., p. 139.

Type-species: *Euchrysia cleptidea* Westwood. Desig. by Ashmead, 1904.

Revision: Girault, 1917. Brooklyn Ent. Soc., Bul. 12: 14-15.

hyalinipennis Ashmead. N. C., Fla., Mo., Tex., N. Mex., Ariz., Calif. Host: *Chrysobothris deleta* Lec., *C. mali* Horn, *Oncideres rhodosticta* Bates.

Euchrysia hyalinipennis Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 231. ♀.

maculipennis Ashmead. Calif.

Euchrysia maculipennis Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 232. ♂.

similis Girault. Kans.

Euchrysia similis Girault, 1917. Brooklyn Ent. Soc., Bul. 12: 15. ♀.

TRIBE TRIGONODERINI

Taxonomy: Hedqvist, 1968. Ent. Tidskr. 89: 35-63. —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 98-123.

Genus EPISTENIA Westwood

Epistenia Westwood, 1832. In Griffith, Cuvier's Animal Kingdom, v. 15 (Insecta, v. 2), p. 432.

Type-species: *Epistenia coeruleata* Westwood. Monotypic.

Dasyglenes Ashmead, 1888. Canad. Ent. 20: 173, 174.

Type-species: *Dasyglenes osmia* Ashmead. Monotypic.

Idiobia Brethes, 1927. Ent. Mitt. 16: 330.

Type-species: *Idiobia schmidt* Brethes. Monotypic.

Revision: Hedqvist, 1968. U. S. Natl. Mus., Proc. 124: 1-8.

Taxonomy: Boucek, 1959 (1958). Mus. Natl. Pragae, Acta Ent. 32: 381 (syn.).

burksi Hedqvist. Ind., Tex. Ecology: Reared from nest of twig-inhabiting aculeate.

Epistenia burksi Hedqvist, 1968. U. S. Natl. Mus., Proc. 124: 3. ♀, ♂.

coeruleata Westwood. N. Y., N. J., Va., Ga., Fla., Mo., Tex., Ariz., Nev., Calif. Host: *Ceratina* sp., *Ectemnius* sp., *Isodontia elegans* (Smith), *Leptochilus republicanus zendaloides*

(Robt.), *Osmia* sp., *Trypargilum* sp., *T. collinum rubrocinctum* (Pack.), *T. tridentatum* (Pack.).

Epistenia coeruleata Westwood, 1832. In Griffith, Cuvier's Animal Kingdom, v. 15 (Insecta, v. 2), p. 432.

Dasyglenes osmia Ashmead, 1888. Canad. Ent. 20: 174. ♀.

Biology: Krombein, 1959. Ent. News 70: 19.

media Hedqvist. N. Y., Tex., Nev., Calif.

Epistenia media Hedqvist, 1968. U. S. Natl. Mus., Proc. 124: 5. ♀, ♂.

odyneri Ashmead. Ga., Mich., N. Mex., Ariz., Calif. Host: *Leptochilus rufobasilaris* (Ashm.).

Epistenia odyneri Ashmead, 1896. In Davidson, Psyche 7: 336. ♀.

polita (Say). D. C., Va., N. C., Ga., Fla.

Spalangius (!) *politus* Say, 1828. Contrib. Maclur. Lyc. Phila. 1: 79. ♀.

Taxonomy: Gahan, 1951. Canad. Ent. 83: 174 (reasons for placing in *Epistenia*).

regalis Cockerell. Colo. Ecology: Reared from nest of *Odynerus*. This is probably a synonym of *coeruleata* Westwood.

Epistenia regalis Cockerell, 1934. Psyche 41: 228. ♀.

Genus PTINOBIUS Ashmead

Ptinobius Ashmead, 1896. Ent. Soc. Wash., Proc. 4: 11.

Type-species: *Charitopus magnificus* Ashmead. Monotypic.

Megormyrus Cockerell, 1926. Psyche 33: 36.

Type-species: *Megormyrus amabilis* Cockerell. Monotypic.

Revision: Rohwer, 1919. Ent. Soc. Wash., Proc. 21: 4-6.

Taxonomy: Boucek, 1959 (1958). Mus. Natl. Pragae, Acta Ent. 32: 363.

agrili Rohwer. Calif. Host: *Agrilus angelicus* Horn.

Ptinobius agrili Rohwer, 1919. Ent. Soc. Wash., Proc. 21: 5. ♀, ♂.

amabilis (Cockerell). Colo. Host: *Hoplitis producta* (Cress.), *Stelis* sp., *S. sexmaculata* Ashm.

Megormyrus amabilis Cockerell, 1926. Psyche 33: 37. ♀.

californicus Crawford. Calif.

Ptinobius californicus Crawford, 1917 (1916). Insecutor Inscitiae Menstruus 4: 142. ♀.

magnificus (Ashmead). Que., N. J., W. Va., Va., Kans., Tex. Host: *Agrilus ruficollis* (F.),

Amphicercus bicaudatus (Say), *Lixus scrobicollis* Boh., *Tessaropa tenuipes* (Hald.).

Charitopus magnificus Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App. p. IV. ♀.

Ptinobius dysphagae Girault, 1915. Ent. News 26: 130. ♂.

Taxonomy: Girault, 1917 (1916). Insecutor Inscitiae Menstruus 4: 142, 144.

Biology: Hopkins, 1891. W. Va. Agr. Expt. Sta., Bul. 15: 84.

texanus Crawford. Tex. Host: *Araecerus fasciculatus* (Deg.).

Ptinobius texanus Crawford, 1917 (1916). Insecutor Inscitiae Menstruus 4: 142. ♀, ♂.

Genus PLATYGERRHUS Thomson

Platygerrhus Thomson, 1878. Hym. Scand., v. 5, pp. 4, 13.

Type-species: *Platygerrhus gracilis* Thomson. Monotypic.

Taxonomy: Kerrich and Graham, 1957. Soc. Brit. Ent., Trans. 12: 300-303. — Hedqvist, 1968.

Ent. Tidskr. 89: 36-39. — Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 108-122.

algonquina (Girault). Que., N. H., Conn., Ill.

Trigonoderus algonquina Girault, 1917. Ent. News 28: 396. ♀.

americanus Hedqvist. Ariz., Alaska, Calif.

Platygerrhus americanus Hedqvist, 1968. Ent. Tidskr. 89: 38. ♀.

Genus PLUTOTHRIX Foerster

Plutothrix Foerster, 1856. Hym. Stud., v. 2, pp. 46, 49. No species.

Type-species: *Plutothrix foersteri* Mayr. Desig. by Mayr, 1904 by subsequent reference.

Anoglyphis Foerster, 1878. Naturh. Ver. Rheinlande, Verh. 35: 49.

Type-species: *Anoglyphis nubilosa* Foerster. Orig. desig.

unguttus (Girault). Que., Ont., N. H., Conn., N. Y., N. J., Md., D. C., Va., Ga., Ill., Mo., Nebr., Tex. Ecology: Parasitizes Coleoptera living in shelf fungi. Host: *Diaperis* sp., *Euparius marmoreus* Oliv., *Thymalus* sp.

Trigonoderus ungtuttus Girault, 1917. Ent. News 28: 396. ♀.

Taxonomy: Hedqvist, 1968. Ent. Tidskr. 89: 42.

Biology: Graves, 1960. Ent. Soc. Amer., Ann. 53: 74.

Genus TRIGONODERUS Westwood

Trigonoderus Westwood, 1832. London, Edinb., and Dublin Phil. Mag. and Jour. Sci. (3) 1: 127.

Type-species: *Trigonoderus princeps* Westwood. Monotypic.

Pterolycus Ratzeburg, 1848. Ichn. d. Forstins., v. 2, p. 208.

Type-species: *Pteromalus (Pterolycus) brandtii* Ratzeburg. Desig. by Gahan and Fagan, 1923.

Revision: Girault, 1917. Ent. News 28: 396-397.

aegeriae Ashmead. Fla.

Trigonoderus aegeriae Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 192. ♀.

Taxonomy: Hedqvist, 1968. Ent. Tidskr. 89: 46 (may belong in *Habrocytus*).

irvingi Girault. Colo.

Trigonoderus irvingi Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. V, p. 15. ♀.

nonstylatus Girault. Calif.

Trigonoderus nonstylatus Girault, 1917. Ent. News 28: 396. ♀.

Taxonomy: Hedqvist, 1968. Ent. Tidskr. 89: 44 (prob. belongs elsewhere).

Genus OGLOBLINISCA Hedqvist

Ogloblinisca Hedqvist, 1968. Ent. Tidskr. 89: 50.

Type-species: *Ogloblinisca maculata* Hedqvist. Orig. desig.

americana Hedqvist. Ont., Maine, Mass., Md., N. C., S. C.

Ogloblinisca americana Hedqvist, 1968. Ent. Tidskr. 89: 54. ♀, ♂.

Genus JANSSONIELLA Kerrich

Janssoniella Kerrich, 1957. In Kerrich and Graham, Soc. Brit. Ent., Trans. 12: 303.

Type-species: *Janssoniella caudata* Kerrich. Orig. desig.

caudata Kerrich. N. J., Idaho, B. C., Calif.; Europe. Ecology: Reared from bracket fungi infested with Coleoptera. Host: *Cis* sp.

Janssoniella caudata Kerrich, 1957. In Kerrich and Graham, Soc. Brit. Ent., Trans. 12: 304. ♀.

intermedia Hedqvist. B. C.; Europe.

Janssoniella intermedia Hedqvist, 1968. Ent. Tidskr. 89: 57, 58. ♀.

Genus GASTRACANTHUS Westwood

Gastracanthus Westwood, 1833. Mag. Nat. Hist. 6: 121.

Type-species: *Gastracanthus pulcherrimus* Westwood. Monotypic.

Hetroxys Westwood, 1833. Mag. Nat. Hist. 6: 495. N. name, unnecessarily proposed.

Etroxys Foerster, 1956. Hym. Stud., v. 2, pp. 66, 71. Emend.

Aetroxys Walker, 1872. Notes on Chalcid., p. 110. Emend.

Photismus Thomson, 1878. Hym. Scand., v. 5, pp. 4, 15.

Type-species: *Photismus nubilosus* Thomson. Monotypic.

Heteroxys Dalla Torre, 1898. Cat. Hym., v. 5, p. 101. Emend.
conicus (Girault). Que., Ont., Maine, N. Y., N. J., Md., Ind., B. C.
Trigonoderus conicus Girault, 1917. Ent. News 28: 396. ♀.

Taxonomy: Kerrich and Graham, 1957. Soc. Brit. Ent., Trans. 12: 283-284. —Boucek, 1959 (1958). Mus. Natl. Pragae, Acta Ent. 32: 365.

SUBFAMILY COLOTRECHNINAE

Taxonomy: Boucek, 1957. In Kratochvil, Klic Zvireny CSR 2: 232 (tribe). —Boucek, 1964. Canad. Ent., Mem. 34: 41 (subfamily). —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 850.

Genus COLOTRECHNUS Thomson

Genus COLOTRECHNUS Subgenus COLOTRECHNUS Thomson

Colotrechnus Thomson, 1878. Hym. Scand., v. 5, p. 46.
 Type-species: *Colotrechnus subcoeruleus* Thomson. Monotypic.

The typical subgenus does not occur in North America.

Genus COLOTRECHNUS Subgenus ZANONIA Masi

Zanonia Masi, 1921. Genova Mus. Civ. Stor. Nat., Ann. (3) 9: 184.
 Type-species: *Zanonia viridis* Masi. Monotypic.

Taxonomy: Masi, 1922. Soc. Ent. Ital. Bol. 54: 111 (closely rel. to *Colotrechnus* Thomson).
 —Delucchi, 1956. Ztschr. f. Angew. Ent. 39: 233 (syn. of *Colotrechnus* Thomson). —Burks, 1958. Fla. Ent. 41: 13 (subg. of *Colotrechnus* Thomson).
ignotus Burks. N. C., Fla., Okla., Tex., Ariz., Calif. Ecology: Reared from heads of *Bidens* and other Compositae.
Colotrechnus (*Zanonia*) *ignotus* Burks, 1958. Fla. Ent. 41: 14. ♀, ♂.

SUBFAMILY MACROMESINAE

Taxonomy: Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 42.

Genus MACROMESUS Walker

Macromesus Walker, 1848. List Hym. Brit. Mus., Chalcid., pt. 2, pp. 106, 161.

Type-species: *Macromesus amphiretus* Walker. Monotypic.
Wesenbergia Kryger, 1943. Ent. Meddel. 22: 360.

Type-species: *Wesenbergia oculata* Kryger. Orig. desig.

Taxonomy: Graham, 1959. Ent. Monthly Mag. 95: 73-78 (Macromesinae of Pteromalidae).
 —Hedqvist, 1960. Ent. Tidskr. 81: 140. —Boucek, 1961. Mus. Natl. Pragae, Acta Ent. 34: 57 (near Tridymini). —Hedqvist, 1963. Stud. Forest. Suecica II, pp. 57-58 (Cheilropachinae).
americanus Hedqvist. Ariz., Oreg., Calif. Host: *Cylindrocopturus longulus* (Lec.), *C. eatoni* Buc., *Pseudohylesinus nebulosus* (Lec.), *Scolytus praeceps* Lec., *S. unispinosus* Lec., *S. ventralis* Lec.
Macromesus americanus Hedqvist, 1960. Ent. Tidskr. 81: 140. ♀, ♂.

SUBFAMILY SPALANGIINAE

Revision: Boucek, 1963. Mus. Natl. Pragae, Acta Ent. 35: 429-512 (world fauna). —Boucek, 1965. Mus. Natl. Pragae, Acta Ent. 36: 593-602 (Ethiopian and Nearctic faunas).

Genus SPALANGIA Latreille

Spalangia Latreille, 1805. Hist. Nat. Crust. Ins., v. 13, p. 227.

Type-species: *Spalangia nigra* Latreille. Monotypic.
Prospalangia Brethes, 1915. Soc. Cient. Argentina, An. 79: 316.
 Type-species: *Prospalangia platensis* Brethes. Orig. desig.

Taxonomy: Ashmead, 1894. Ent. Soc. Wash., Proc. 3: 27-37. —Richardson, 1913. Jour. Morph. 24: 515. —Masi, 1917. Novitates Zool. 24: 188-189. —Burks, 1969. Smithsn. Contrib. Zool., 2: 1-7. (types in USNM).

attae Burks, Tex.; El Salvador. Ecology: Occurs in debris of nests of *Atta mexicana* (Smith) and *A. texana* (Buckley).

Spalangia attae Burks, 1969. Smithsn. Contrib. Zool., 2: 1. ♀.

cameroni Perkins. N. H., Miss., La., Tex., Ariz., Calif.; Cosmopolitan. Host: *Anastrepha suspensa* (Loew), *Fannia femoralis* (Stein), *Haematobia irritans* (L.), *Hippelates collusor* (Towns.), *Musca domestica* (L.), *Muscina* sp., *Ophyra* sp., *Phaenicia* sp., *Stomoxys calcitrans* (L.).

Spalangia cameroni Perkins, 1910. Fauna Hawaii., Hym. Sup. 2: 656. ♀, ♂.

Spalangia muscidarum var. *texensis* Girault, 1920. U. S. Natl. Mus., Proc. 58: 213. ♂.

Spalangia muscidaster Masi, 1940. R. Lab. Ent. Agr. Portici, Bol. 3: 295. ♂.

Spalangia atherigoniae Risbec, 1951. Inst. Franc. d'Afr. Noire, Mem. 13: 361. ♀, ♂.

Biology: Timberlake, 1924. Hawaii. Ent. Soc., Proc. 5: 426. —Simmonds, 1929. Agr. Jour. Fiji 2: 35. —Lever, 1934. Trop. Agr. 11: 36-37. —Sychevskaya 1963. Zool. Zhur. 42: 860.

—Legner *et al.*, 1966. Calif. Agr. 20: 11. —Legner, 1966. Jour. Econ. Ent. 59: 99. —Legner

et al., 1967. Ent. Soc. Amer., Ann. 60: 462-468. —Legner and Gerling, 1967. Ent. Soc.

Amer., Ann. 60: 678-691. —Legner and Olton, 1968. Ent. Soc. Amer., Ann. 61: 1306-1314.

—Gerling and Legner, 1968. Ent. Soc. Amer., Ann. 61: 1436-1443. —Legner, 1969. Ent. Soc.

Amer., Ann. 62: 220-226. —Wylie, 1971. Canad. Ent. 103: 1537-1544. —Wylie, 1972. Canad.

Ent. 104: 209-214 (oviposition).

drosophilae Ashmead. Que. and Ont., s. to Fla., w. to B. C., s. to Calif. Host: *Drosophila* sp., *D. melanogaster* Meig., *Hippelates collusor* (Towns.), *Meromyza americana* Fitch, *Oscinella carbonaria* (Loew), *O. frit* (L.), *O. minor* (Ad.), *O. soror* (Macq.), *Pseudogaurax anchora* (Loew).

Spalangia drosophilae Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 199. ♀.

Biology: Lindquist, 1936. Jour. Econ. Ent. 29: 1154-1158. —Simmonds, 1944. Bul. Ent. Res.

35: 222. —Simmonds, 1946. Bul. Ent. Res. 37: 95-97. —Simmonds, 1952. Bul. Ent. Res. 43:

533-540. —Simmonds, 1953. Bul. Ent. Res. 44: 387-393, 773-778. —Simmonds, 1954. Bul.

Ent. Res. 45: 527-537 (oviposition). —Simmonds, 1956. Bul. Ent. Res. 47: 361-376. —Legner

et al., 1966. Ent. Soc. Amer., Ann. 59: 977-984. —Legner, 1969. Ent. Soc. Amer., Ann. 62:

220-226.

endius Walker. Ont., N. Y., N. J., Md., N. C., S. C., Fla., Nebr., Calif.; Cosmopolitan. Host:

Ceratitis capitata (Wied.), *Dacus dorsalis* Hendel, *Fannia leucosticta* (Meig.), *F.*

scalaris (F.), *Haematobia irritans* (L.), *Musca domestica* L., *Muscina* sp., *Ophyra* sp.,

Stomoxys calcitrans (L.), *Sarcophaga* sp.

Spalangia endius Walker, 1839. Monog. Chalcid., v. 2, p. 96. ♂.

Spalangia muscidarum var. *stomoxysiae* Girault, 1916. Soc. Ent. 31: 57. ♀.

Spalangia philippinensis Fullaway, 1917. Hawaii. Ent. Soc., Proc. 3: 292. ♀, ♂.

Spalangia orientalis Graham, 1932. In Handschin, Austral. Council. Sci. and Indus. Res., Pam. 31: 21.

Biology: Lindquist, 1936. Jour. Econ. Ent. 29: 1154-1158 (*stomoxysiae*). —Legner and

Brydon, 1966. Ent. Soc. Amer., Ann. 59: 638-651. —Legner and Olton, 1968. Ent. Soc.

Amer., Ann. 61: 1306-1314.

erythromera Foerster. N. H., Conn., Ont., Sask.; Europe.

Spalangia erythromera Foerster, 1850. Naturh. Ver. Rheinlande, Verh. 7: 512. ♀.

Spalangia Umbellatarum Foerster, 1850. Naturh. Ver. Rheinlande, Verh. 7: 513. ♀, ♂.

Spalangia spuria Foerster, 1850. Naturh. Ver. Rheinlande, Verh. 7: 515. ♀.

Taxonomy: Boucek, 1963. Mus. Natl. Pragae, Acta Ent. 35: 466 (syn.).

haematobiae Ashmead. Ont., s. to Va., w. to Alta. and Calif.; Mexico, West Indies. Host: *Haematobia irritans* (L.).

Spalangia haematobiae Ashmead, 1894. Ent. Soc. Wash., Proc. 3: 37. ♀.

Taxonomy: Boucek, 1963. Mus. Natl. Pragae, Acta Ent. 35: 475 (*S. impuncta* Howard, Neotropical species, a possible syn.).

- nigra** Latreille. N. Y., N. J., Md., Va., N. C., S. C., Ohio, Mich., Ill., Miss., Nebr., Tex., Colo., Calif.; Cosmopolitan. Host: *Haematobia irritans* (L.), *Hylemya antiqua* (Meig.), *Musca domestica* L., *Rhagoletis completa* Cress., *Stomoxys calcitrans* (L.).
Spalangia nigra Latreille 1805. Hist. Nat. Crust. Ins., v. 13, p. 288.
Spalangia hirta Haliday, 1833. Ent. Mag. 1: 334. ♀.
Spalangia rugosicollis Ashmead, 1894. Ent. Soc. Wash., Proc. 3: 36. ♀.
Spalangia muscae Howard, 1911. The House Fly, p. 90. Inadvertently descr.; attrib. to Girault.

Taxonomy: Boucek, 1963. Mus. Natl. Pragae., Acta Ent. 35: 443 (syn.). —Burks, 1969. Smithsn. Contrib. Zool. 2: 5 (types in USNM).

Biology: Parker and Thompson, 1928. Soc. Ent. de France, Ann. 97: 437-439. —Legner, 1969. Ent. Soc. Amer., Ann. 62: 220-226.

Morphology: Parker, 1924. Soc. Ent. de France, Ann. 93: 310-311 (larva).

- nigripes** Curtis. N. Y., Ill., Ark., Colo.; Cosmopolitan. Host: *Fannia leucosticta* (Meig.), *F. scalaris* (F.), *Lucilia* sp., *Musca domestica* L.
Spalangia nigripes Curtis, 1839. Brit. Ent., v. 16, fol. 740. ♀.
Spalangia hyaloptera Foerster, 1850. Naturh. Ver. Rheinlande, Verh. 7: 509. ♀, ♂.
Spalangia formicaria Kieffer, 1905. Berlin. Ent. Ztschr. 50: 1. ♀.
Spalangia muscarum Girault, 1920. U. S. Natl. Mus., Proc. 58: 213. ♀.

Taxonomy: Boucek, 1963. Mus. Natl. Pragae, Acta Ent. 35: 461 (syn.).

- nigroaenea** Curtis. N. B. and Ont., s. to Va., w. to B. C. and Calif.; Cosmopolitan. Host: *Fannia* sp., *Musca domestica* L., *Muscina* sp., *Ophyra* sp., *Stomoxys calcitrans* (L.).
Spalangia nigroaenea Curtis, 1839. Brit. Ent., v. 16, fol. 740. ♂.
Spalangia homalaspis Foerster, 1850. Naturh. Ver. Rheinlande, Verh. 7: 505. ♀, ♂.
Spalangia astuta Foerster, 1851. Naturh. Ver. Rheinlande, Verh. 8: 1. ♀.
Spalangia muscidarum Richardson, 1913. Psyche 20: 38. ♀, ♂.
Spalangia sundaica Graham, 1932. In Handschin, Austral. Council Sci. and Indus. Res., Pam. 31: 22, 24. ♀, ♂.

Taxonomy: Boucek, 1963. Mus. Natl. Pragae, Acta Ent. 35: 448 (syn.). —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 52 (syn.).

Biology: Pinkus, 1913. Psyche 20: 148-158 (*muscidarum*). —Richardson, 1913. Jour. Morph. 24: 513-549 (*muscidarum*). —Roberts, 1935. Jour. Agr. Res. 50: 493 (*muscidarum*). —Legner *et al.*, 1967. Ent. Soc. Amer., Ann. 60: 462-468. —Legner and Olton, 1968. Ent. Soc. Amer., Ann. 61: 1306-1314.

Morphology: Burks, 1938. Ent. Soc. Amer., Ann. 31: 161 (*muscidarum*, forewing).

SUBFAMILY CEROCEPHALINAE

Revision: Gahan, 1946. U. S. Natl. Mus., Proc. 96: 349-376.

Taxonomy: Hedqvist, 1969. Ent. Soc. Wash., Proc. 71: 449-466 (key to genera).

Genus CHOETOSPILA Westwood

Choetospila Westwood, 1874. Thesaurus Ent. Oxon., p. 137, pl. 25.

Type-species: *Choetospila elegans* Westwood. Monotypic.

Chaetospila Dalla Torre, 1898. Cat. Hym., v. 5, p. 207. Emend.

Spalangiomorpha Girault, 1913. Queensland Mus., Mem. 2: 333.

Type-species: *Spalangiomorpha fasciatiennis* Girault. Orig. desig.

- elegans** Westwood. Que., s. to Fla., w. to B. C., s. to Calif.; Cosmopolitan. Host: *Callosobruchus chinensis* (L.), *C. maculatus* (F.), *Caulophilus oryzae* (Gyll.), *Lasioderma serricorne* (F.), *Rhyzopertha dominica* (F.), *Sitophilus granarius* (L.), *S. linearis* (Herbst), *S. oryzae* (L.), *Stegobium paniceum* (L.). This is one of the commonest chalcidoids in the entire world; it has both winged and wingless forms, often mixed in the same lot.

Choetospila elegans Westwood, 1874. Thesaurus Ent. Oxon., p. 137. ♀.

Spalangiomorpha fasciatiennis Girault, 1913. Queensland Mus., Mem. 2: 333. ♀.

Spalangia metallica Fullaway, 1913. Hawaii. Ent. Soc., Proc. 2: 286. ♀.

Spalangia rhizoperthae Risbec, 1951. Inst. Franc. d'Afr. Noire, Mem. 13: 365. ♀, ♂.

Cerocephala oryzae Risbec, 1951. Inst. Franc. d'Afr. Noire, Mem. 13: 366. ♀, ♂.

Taxonomy: Boucek, 1963. Mus. Natl. Pragae, Acta Ent. 35: 505 (syn.). —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 61 (syn.). —Hedqvist, 1969. Ent. Soc. Wash., Proc. 71: 451 (syn.).

Biology: Bare, 1942. Jour. Econ. Ent. 35: 186. —Williams and Floyd, 1971. Jour. Econ. Ent. 64: 1407-1408.

Genus CHOETOSPILISCA Hedqvist

Choetospilisca Hedqvist, 1969. Ent. Soc. Wash., Proc. 71: 452.

Type-species: *Choetospilisca tabidoides* Hedqvist. Orig. desig.

tabida (Gahan). Md. Ecology: Thought to parasitize a cossonine beetle living in a dead tree branch.

Choetospila tabida Gahan, 1946. U. S. Natl. Mus., Proc. 96: 354. ♀, ♂.

Genus CEROCEPHALA Westwood

Cerocephala Westwood, 1832. Mag. Zool. 2: Cl. ix, pl. 4.

Type-species: *Cerocephala cornigera* Westwood. Monotypic.

Epimacrus Walker, 1833. Ent. Mag. 1: 368.

Type-species: *Epimacrus rufus* Walker. Monotypic.

Sciatheras Ratzeburg, 1848. Ichn. d. Forstins., v. 2, p. 209.

Type-species: *Sciatheras trichotus* Ratzeburg. Monotypic.

Cerocephala subg. *Parasciatheras* Masi, 1917. Novitates Zool. 24: 189.

Type-species: *Cerocephala (Parasciatheras) caelebs* Masi. Monotypic.

Proamotura Girault, 1920. Insecutor Insectiae Menstruus 8: 143.

Type-species: *Proamotura aquila* Girault. Monotypic.

Taxonomy: Hedqvist, 1969. Ent. Soc. Wash., Proc. 71: 459.

dubarae Wallace. Pa. Host: *Hadrobregmus carinatus* (Say).

Cerocephala dubarae Wallace, 1959. Brooklyn Ent. Soc., Bul. 54: 84. ♀, ♂.

rufa (Walker). Ohio, Mich., Colo.; Europe. Ecology: A secondary parasite of Scolytidae. Host:

Dendrosoter sp., *Spathius* sp.

Epimacrus rufus Walker, 1833. Ent. Mag. 1: 369. ♀.

Genus ACEROCEPHALA Gahan

Acercephala Gahan, 1946. U. S. Natl. Mus., Proc. 96: 369.

Type-species: *Cerocephala atroviolacea* Crawford. Orig. desig.

aenigma Gahan. Calif., Oreg.

Acercephala aenigma Gahan, 1946. U. S. Natl. Mus., Proc. 96: 371. ♀, ♂.

atroviolacea (Crawford). Colo., N. Mex., Ariz., Calif. Host: *Conophthorus edulis* Hopk., *C.*

flexilis Hopk., *Cylindrocopturus* sp.

Cerocephala (!) *atroviolacea* Crawford, 1913. U. S. Natl. Mus., Proc. 45: 315. ♀.

Biology: Keen, 1958. U. S. Dept. Agr., Tech. Bul. 1169: 49, 98.

Genus THEOCOLAXIA Girault

Theocolaxia Girault, 1924. Lese Majeste, New Insecta and Robbery, p. 1.

Type-species: *Theocolaxia lessingi* Girault. Orig. desig.

pityophthori (Ashmead). N. C., Fla. Host: *Pityophthorus consimilis* Lec., *Thysanoes fimbicornis* Lec.

Cerocephala pityophthori Ashmead, 1894. Ent. Soc. Wash., Proc. 3: 32. ♀.

scolytivora (Ashmead). Fla. Host: *Loganius ficus* Schwarz.

Cerocephala scolytivora Ashmead, 1894. Ent. Soc. Wash., Proc. 3: 33. ♀, ♂.

SUBFAMILY DIPARINAE

In this subfamily the females usually are wingless, or with rudimentary wings, and the males are fully winged; the sexes also have quite different antennae. Consequently the males and females of the same species often have been placed in different subfamilies, or even superfamilies.

Taxonomy: Gahan, 1946. U. S. Natl. Mus., Proc. 96: 375 (Lelapinae). — Boucek, 1954. Mus. Natl. Pragae, Acta Ent. 29: 54 (Diparinae). — Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 63-66.

Genus DIPARA Walker

Dipara Walker, 1833. Ent. Mag. 1: 371, 373.

Type-species: *Dipara petiolata* Walker. Monotypic.

Tricoryphus Foerster, 1856. Hym. Stud., v. 2, p. 46. No species.

Type-species: *Tricoryphus fasciatus* Thomson. Desig. by Thomson, 1876, by subsequent reference.

Apterolelaps Ashmead, 1901. Fauna Hawaii, v. 1, p. 312.

Type-species: *Apterolelaps nigriceps* Ashmead. Orig. desig.

Apterolaclaps Schulz, 1906. Spolia Hym., p. 144. Emend.

Apterolaclaps Girault, 1916. Canad. Ent. 48: 264. Preocc. by Schulz, 1906.

Type-species: *Apterolaclaps nigriscutum* Girault. Monotypic.

Hispanolelaps Mercet, 1927. Eos 3: 60.

Type-species: *Hispanolelaps coxalis* Mercet. Orig. desig.

Afrolelaps Hedqvist, 1963. Cult. Co. Diam. Angola, Publ. 63: 47.

Type-species: *Afrolelaps maculata* Hedqvist. Orig. desig.

The female of this genus is wingless, commonly taken in Berlese samples; the male is winged and looks entirely different.

Taxonomy: Boucek, 1954. Mus. Natl. Pragae, Acta Ent. 29: 52-54 (syn.). — Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 64-65 (syn.).

latipennis Ashmead. Colo.

Dipara latipennis Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 26, 45. ♂.

nigriceps (Ashmead). W. Va.

Apterolelaps nigriceps Ashmead, 1901. Fauna Hawaii, v. 1, p. 312. ♀.

Apterolaclaps nigriscutum Girault, 1916. Canad. Ent. 48: 264. ♀.

Taxonomy: Gahan and Fagan, 1923. U. S. Natl. Mus., Bul. 124: 16 (type of each species the same specimen).

Genus SPALANGIOLAELAPS Girault

Spalangiolaclaps Girault, 1917. Ent. News 28: 22.

Type-species: *Spalangiolaclaps argenticoxa* Girault. Orig. desig.

argenticoxa Girault. Md.

Spalangiolaclaps argenticoxa Girault, 1917. Ent. News 28: 23. ♀.

Genus TRIMICROPS Kieffer

Trimicrops Kieffer, 1906. Soc. Sci. de Bruxelles, Ann. 30: 142.

Type-species: *Trimicrops claviger* Kieffer. Monotypic.

Genus originally placed in the Ceraphronidae. There is an undescribed Nearctic species.

SUBFAMILY EUNOTINAE

Revision: Masi, 1931. Eos 7: 411-459.

Taxonomy: Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 67-68.

Genus MORANILA Cameron

Tomocera Howard, 1881. In Comstock, U. S. Dept. Agr., Ann. Rpt. for 1880, p. 368. Preocc. by Desmarest, 1858.

Type-species: *Tomocera californica* Howard. Monotypic.

Moranila Cameron, 1883. Ent. Soc. London., Trans. 1883: 188.

Type-species: *Moranila testaceiceps* Cameron. Monotypic.

Dilophogaster Howard, 1886. Ent. Amer. 2: 98. N. name for *Tomocera*.

Eunotomyia Masi, 1917. Novitates Zool. 24: 297.

Type-species: *Eunotomyia festiva* Masi. Monotypic.

Revision: Mercet, 1924. Real Soc. Espan. Hist. Nat., Bol. 24: 422-426.

californica (Howard). Calif.; Mexico, Hawaii, South Sea Isls., Australia, Africa, Eurasia.

Ecology: The larva of this species preys on the eggs within the body of the female scales; rarely it attacks larvae of other primaries. Host: *Antonina bambusae* Mask., *Asterolecanium* sp., *Ceroplastes* sp., *Coccus hesperidum* L., *Saissetia coffeae* (Walk.), *S. nigra* (Niet.), *S. oleae* (Bern.); *Microterys flavus* (How.).

Tomocera californica Howard, 1881. In Comstock, U. S. Dept. Agr., Ann. Rpt. for 1880, pp. 252, 368. ♀, ♂.

Moranila testaceiceps Cameron, 1883. Ent. Soc. London, Trans. 1883: 188.

Tomocera ceroplastis Perkins, 1906. Hawaii. Ent. Soc., Proc. 1: 75. ♀.

Tomocera glabriventris Girault, 1915. Queensland Mus., Mem. 4: 207. ♀.

Tomocera flaviceps Girault, 1915. Queensland Mus., Mem. 4: 208. ♀.

Taxonomy: Timberlake, 1924. Hawaii. Ent. Soc., Proc. 5: 425.

Biology: Craw, 1891. Calif. State Bd. Hort., Bul. 57: 7. —Riley, 1891. U. S. Dept. Agr., Ann. Rpt. for 1890, p. 251. —Coquillett, 1892. U. S. Dept. Agr., Div. Ent. Bul. 26: 31. —Craw, 1902. Calif. State Bd. Hort., Rpt. for 1901-1902, p. 200. —Quayle and Rust, 1911. Calif. Agr. Expt. Sta., Bul. 223: 189. —Essig, 1913. Calif. State Comn. Hort., Monthly Bul. 2: 272-273. —Smith and Compere, 1928. Univ. Calif. Pubs., Ent. 4: 241-245, 317-321. —Essig, 1931. Hist. of Ent., pp. 139-143, 334-335, 336, 387. —Smith, 1933. Ent. Soc. Amer., Ann. 26: 524. —Hawkins, 1942. Ann. and Mag. Nat. Hist. (11) 9: 884. —Smith, 1944. Hilgardia 16: 282. —Flanders, 1953 (1952). Ent. Soc. Amer., Ann. 45: 546-547. —Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139: 26. —Flanders, 1958. Jour. Econ. Ent. 51: 247.

Genus EUNOTUS Walker

Eunotus Walker, 1834. Ent. Mag. 2: 297.

Type-species: *Eunotus cretaceus* Walker. Monotypic.

Tritypus Ratzeburg, 1852. Ichn. d. Forstins., v. 3, p. 227.

Type-species: *Tritypus areolatus* Ratzeburg. Monotypic.

Megapelte Foerster, 1856. Hym. Stud., v. 2, p. 63. N. name unnecessarily proposed for *Eunotus*, preocc. in Botany.

americanus Girault, Maine, N. Dak., Okla., Mont. Host: *Eriopeltis festucae* Fonsc.

Eunotus americanus Girault, 1915. Ent. Soc. Amer., Ann. 8: 273. ♀, ♂.

cretaceus Walker. N. H., N. Y.; Europe. Host: *Eriopeltis festucae* Fonsc.

Eunotus cretaceus Walker, 1834. Ent. Mag. 2: 298. "♂" = ♀.

Eunotus festucae Masi, 1928. Soc. Ent. Ital., Bol. 60: 128. ♀, ♂.

Biology: Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 72.

lividus Ashmead. Que., Ont., N. Y., N. J., Ohio, N. C., Ga., Fla., Kans., Colo. Host: *Lecanium corni* Bouche, *L. nigrofasciatum* Perg., *Pulvinaria vitis* (L.).

Eunotus lividus Ashmead, 1892. Ent. Soc. Wash., Proc. 2: 288. ♀.

Biology: Smith, 1906. N. J. Agr. Expt. Sta., Ann. Rpt. 26: 606-607. —Johnson, 1906. Colo. Agr. Expt. Sta., Bul. 116: 11. —Essig, 1938. Ins. West. N. Amer., p. 840.

Genus MESOPELTITA Ghesquiere

Mesopeltis Masi, 1917. Novitates Zool. 24: 197. Preocc. by Cope, 1867.

Type-species: *Mesopeltis atrocyanea* Masi. Monotypic.

Mesopeltita Ghesquiere, 1946. Rev. de Zool. et de Bot. Africaines 39: 370. N. name.
atrocyanea (Masi). Tex.; Cent. and So. Amer., West Indies, East Indies. Host: *Saissetia* sp.
Mesopeltis atrocyanea Masi, 1917. Novitates Zool. 24: 197. ♀, ♂.

Taxonomy: Waterston, 1917. Bul. Ent. Res. 7: 252-257.

Biology: Compere, 1940. Hilgardia 13: 414-415.

Genus SCUTELLISTA Motschulsky

Scutellista Motschulsky, 1859. Etudes Ent. 8: 172, 177.

Type-species: *Scutellista cyanea* Motschulsky. Monotypic.

Aspidocoris Costa, 1863. Accad. Aspiranti Nat. Napoli, Ann. (3) 3: 25.

Type-species: *Aspidocoris cyaneus* Costa. Monotypic.

Enargopelte Foerster, 1878. Naturh. Ver. Rheinlande, Verh. 35: 62.

Type-species: *Enargopelte obscura* Foerster. Monotypic.

cyanea Motschulsky. Del., s. to Fla., w. to Calif.; Cosmopolitan. Living material imported from Italy in 1895, cultured in D. C., and liberated in La. in 1898. Another introduction from South Africa into Calif. was carried out in 1901. Both were successful, and *cyanea* is now so common in North America it is often assumed to be native. Host: *Ceroplastes cirripediformis* Comst., *C. floridensis* Comst., *Coccus hesperidum* L., *Lecanium corni* Bche., *Phenacoccus artemisiae* Ehrh., *Saissetia coffeae* (Walk.), *S. nigra* (Nietn.), *S. oleae* (Bern.).

Encyrtus caeruleus Fonscolombe, 1832. Ann. Sci. Nat., Zool. (1) 26: 304.

Scutellista cyanea Motschulsky, 1859. Etudes Ent. 8: 172. ♀, ♂. Although *caeruleus*

Fonscolombe has priority, Graham, 1969 (Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 76), intends to submit an application to the International Commission to have it suppressed, in view of the very large volume of literature there is that uses the name *cyanea* Motschulsky.

Biology: Marlatt, 1901. U. S. Dept. Agr., Yearbook for 1900, pp. 274-275. —Howard, 1903. U. S. Dept. Agr., Ann. Rpt. for 1902, pp. 228-229. —Marlatt, 1904. U. S. Dept. Agr., Div. Ent. Bul. (n. s.) 44: 50-56. —Ehrhorn, 1905. Calif. State Comnr. Hort., Monthly Cir., November, pp. 2-6. —Martelli, 1908. Lab. Zool. Gen. e. Agr. Portici, Bol. 2: 226, 238, 246. —Quayle, 1910. Jour. Econ. Ent. 3: 446-451. —Howard and Fiske, 1911. U. S. Dept. Agr., Bur. Ent. Bul. 91: 31-33. —Quayle, 1911. Calif. Agr. Expt. Sta., Bul. 214: 456-459. —Quayle and Rust, 1911. Calif. Agr. Expt. Sta., Bul. 223: 179-183. —Essig, 1913. Calif. State Comn. Hort., Monthly Bul. 2: 118-119, 270-271. —Essig, 1915. Calif. State Comn. Hort., Monthly Bul. 4: Sup. pp. 152, 154, 374. —Smith, 1916. Jour. Econ. Ent. 9: 479-481. —Smith, 1921. Jour. Econ. Ent. 14: 349. —Essig, 1926. Ins. Western N. Amer., p. 825. —Smith and Compere, 1928. Univ. Calif. Pubs. Ent. 4: 241-245, 322-332. —Essig, 1931. Hist. of Ent., pp. 335-337, 360, 388. —Quayle, 1932. Calif. Agr. Expt. Sta., Bul. 542: 43. —Smith, 1933. Ent. Soc. Amer., Ann. 26: 523-525. —Compere, 1937. Bul. Ent. Res. 28: 51. —Smith, 1944. Hilgardia 16: 281. —Woglum *et al.*, 1947. Jour. Econ. Ent. 40: 818-819. —Flanders, 1953 (1952). Ent. Soc. Amer., Ann. 45: 544-547. —Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139: 108. —Flanders, 1958. Jour. Econ. Ent. 51: 247. —Flanders, 1959. Jour. Econ. Ent. 52: 596-597. —Gaxho, 1960. Tirana U. Shtet., Bul. Ser. 14: 55. —Talhouk, 1961. Entomophaga 6: 208. —Inserra, 1968. Entomologica 4: 45-77. —Nuzzaci, 1969. Entomologica 5: 9-36, 127-138.

Morphology: Mercet, 1910. Real Acad. Ci. Madrid, Rev. 9: 185-191 (larva, pupa). —Parker, 1924. Soc. Ent. de France, Ann. 93: 371 (larva, egg). —Balachowsky and Mesnil, 1935. Ins. Nuisables Plantes Cult., v. 1, p. 572 (larva). —Domenichini, 1953. Bol. Zool. Agr. e Bach. Univ. Milano 19: 258 (gaster).

Genus TOMOCERODES Girault

Tomocerodes Girault, 1916. Canad. Ent. 48: 246.

Type-species: *Tomocerodes americana* Girault. Monotypic.

americana Girault. Ariz.; Mexico. Host: *Lecanodiaspis prosopidis* (Mask.).

Tomocerodes americana Girault, 1916. Canad. Ent. 48: 247. ♀, ♂.

SUBFAMILY ASAPHINAE

Taxonomy: Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 77-78.

Genus ASAPHES Walker

Asaphes Walker, 1834. Ent. Mag. 2: 151.

Type-species: *Asaphes vulgaris* Walker. Monotypic.

Isocratus Foerster, 1856. Hym. Stud., v. 2, pp. 53, 58. N. name, unnecessarily proposed;

Asaphes preocc. in Botany.

Parectroma Brethes, 1913. Buenos Aires Mus. Nac. de Hist. Nat., An. 24: 91.

Type-species: *Parectroma huebrichi* Brethes. Orig. desig.

Taxonomy: De Santis, 1960. Fac. Agron., Revista (3) 36: 113 (syn.).

californicus Girault. Colo., Utah, Wash., Oreg., Calif. Host: *Aphelinus* sp., *Aphidius* sp., *Praon* sp., *Trioxys pallidus* (Hal.).

Asaphes californicus Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. V, p. 1. ♀.

Biology: van den Bosch *et al.*, 1962. Jour. Econ. Ent. 55: 861.

lucens (Provancher). N. B., Que., Ont., s. to Fla., w. to B. C. and Calif. Host: *Aphelinus* sp., *Aphidius phorodontis* Ashm., *A. polygonaphis* (Fitch), *Diaretiella rapae* (M'Int.), *Lysiphlebus testaceipes* (Cress.), *Praon aguti* Smith, *P. simulans* (Prov.), *Trioxys utilis* Mues.

Euplectrus lucens Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 207. ♀.

Megorismus Fletcheri Crawford, 1909. Canad. Ent. 41: 98. ♀, ♂.

Asaphes americana Girault, 1914. Ent. Soc. Wash., Proc. 16: 114. ♀, ♂.

Taxonomy: Burks, 1964 (1963). Canad. Ent. 95: 1258 (syn.).

Biology: Spencer, 1926. Ent. Soc. Amer., Ann. 19: 145. —Griswold, 1929. Ent. Soc. Amer., Ann. 22: 449. —Shands *et al.*, 1955. Ent. Soc. Wash., Proc. 57: 132-135. —Sekhar, 1958. Ent. Soc. Amer., Ann. 51: 1-7. —Pimentel, 1961. Jour. Econ. Ent. 54: 886. —Manglitz and Hill, 1964. Nebr. Agr. Expt. Sta., Res. Bul. 217: 10. —Wage *et al.*, 1965. U. S. Dept. Agr., Tech. Bul. 1338: 29.

rufipes Brues. Maine, Ont., Mass., Conn., N. Y., w. to B. C., Wash. Host: *Aphelinus* sp., *Aphidius* sp., *Praon* sp.

Asaphes rufipes Brues, 1908. Wis. Nat. Hist. Soc., Bul. 6: 160. ♀.

Biology: Cardiff, 1915. Wash. Agr. Expt. Sta., Bul. 127: 32. —Shands *et al.*, 1955. Ent. Soc. Wash., Proc. 57: 132-135. —Johansen, 1957. Northwest Sci. 31: 72.

vulgaris Walker. Greenland; Europe. Host: *Aphidius* sp., *Praon* sp., *Trioxys* sp. There are numerous host records for this widespread, common, Palearctic species in the literature; most of them have not been verified. This is probably always a hyperparasite of aphids. *Asaphes vulgaris* Walker, 1834. Ent. Mag. 2: 152. ♀, ♂.

Taxonomy: Delucchi, 1955. Soc. Roy. Ent. Belg., Mem. 27: 174. —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 78-83.

Biology: Vukasovic, 1931. Soc. Ent. Jugosl., Acta 5-6: 94-97. —Dunn, 1949. Bul. Ent. Res. 40: 103-117. —Evenhuis, 1964. Entomophaga 9: 229. —Broussal, 1968. [Paris] Acad., des Sci., Compt. Rend. (D) 266: 1586.

Genus BAIRAMLIA Waterston

Bairamlia Waterston, 1929. Parasitology 21: 103.

Type-species: *Bairamlia fuscipes* Waterston. Orig. desig.

marylandensis (Girault). Md.

Pirene marylandensis Girault, 1916. Brooklyn Ent. Soc., Bul. 11: 88. ♀.

Taxonomy: Waterston, 1929. Parasitology 21: 103.

Genus **HYPERIMERUS** Girault

Hyperimerus Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 5.

Type-species: *Hyperimerus corvus* Girault. Orig. desig.

Mespilon Graham, 1957. Ent. Monthly Mag. 92: 406.

Type-species: *Mespilon exiguum* Graham. Orig. desig.

Taxonomy: Burks, 1967. In Krombein and Burks, U. S. Dept. Agr., Agr. Monog. 2, Sup. 2:

251, 255 (Torymidae). — Boucek, 1965. Mus. Natl. Pragae, Acta Ent. 36: 549 (syn.).

— Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 78, 83 (Pteromalidae).

corvus Girault. Calif.; Mexico. Host: *Chrysopa* sp., *Hemerobius* sp., *Symphorobius* sp. Closely associated with *Pseudococcus* in its native environment.

Hyperimerus corvus Girault, 1917. Descr. Hym. Chalcidoid Variorum Cum. Observ. III, p. 5. ♀.

SUBFAMILY PANSTENONINAE

Taxonomy: Erdos, 1955. Mus. Natl. Hung., Ann. Hist. Nat. (n. s.) 6: 296. — Graham, 1969.

Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 92.

Genus **PANSTENON** Walker

Panstenon Walker, 1846. List Hym. Brit. Mus. Chalcid. v. 1, p. 29.

Type-species: *Miscogaster oxylys* Walker. Monotypic.

Caudonia Walker, 1850. Ann. and Mag. Nat. Hist. (2) 5: 125.

Type-species: *Caudonia agylla* Walker. Monotypic.

Taxonomy: Graham, 1957. In Kerrich and Graham, Soc. Brit. Ent., Trans. 12: 276 (syn.).

columbianum Ashmead. D. C.

Panstenon columbiana Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 231. ♀.

Genus **BRACHYCAUDONIA** Ashmead

Brachycaudonia Ashmead, 1904. Carnegie Mus., Mem. 1: 283, 285.

Type-species: *Brachycaudonia californica* Ashmead. Orig. desig.

californica Ashmead. Calif.

Brachycaudonia californica Ashmead, 1904. Carnegie Mus., Mem. 1: 282, 368. ♀.

Taxonomy: Gahan and Peck, 1946. Wash. Acad. Sci., Jour. 36: 315.

SUBFAMILY MISCOGASTERINAE

TRIBE SPHEGIGASTERINI

Genus **SPHEGIGASTER** Spinola

Sphégigaster Spinola, 1811. Paris Mus. d'Hist. Nat., Ann. 17: 149.

Type-species: *Diplolepis pallicornis* Spinola. Desig. by Ashmead, 1904.

Trigonogastra Ashmead, 1904. Carnegie Mus., Mem. 1: 330, 331.

Type-species: *Trigonogastra aurata* Ashmead. Orig. desig.

Taxonomy: Delucchi, 1958. Bol. Zool. Agr. e di Bach. (2) 1: 56 (syn.).

aurata (Ashmead). Mich., Mont.

Trigonogastra aurata Ashmead, 1904. Carnegie Mus., Mem. 1: 330. ♀.

Taxonomy: Gahan and Peck, 1946. Wash. Acad. Sci., Jour. 36: 317 (type).

flavicornis (Walker). B. C.; Europe. Introduced from England into B. C. in mid 1930's; recovered 1939. Host: *Phytomyza ilicis* Curtis.

Merismus flavicornis Walker, 1833. Ent. Mag. 1: 377. ♂.

Taxonomy: Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 136 (*Diplolepis pallicornis* Spinola, 1808, might prove to be the same).

Biology: Cameron, 1939. Bul. Ent. Res. 30: 178-180, 192-197. —McLeod, 1954. Ent. Soc. Brit. Columbia, Proc. 50: 22.

Genus SYNTOMOPUS Walker

Syntomopus Walker, 1833. Ent. Mag. 1: 371, 372.

Type-species: *Syntomopus thoracicus* Walker. Desig. by Westwood, 1840.

affinis Ashmead. D. C., Ill.

Syntomopus affinis Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 228. ♀.

americanus Ashmead. Conn., N. Y., s. to Fla., w. to Oreg., Calif.; Mexico, Cent. Amer. Host: *Melanagromyza angelicae* (Frost), *M. virens* (Loew).

Syntomopus americanus Ashmead, 1894. Cincinnati Soc. Nat. Hist., Jour. 17: 51. ♀, ♂.

Biology: Lange, 1944. Jour. Econ. Ent. 37: 394-395.

Genus CYRTOGASTER Walker

Cyrtogaster Walker, 1833. Ent. Mag. 1: 317, 381.

Type-species: *Cyrtogaster rufipes* Walker. Desig. by Westwood, 1840.

Dicormus Foerster, 1841. Beitr. Monog. Pteromalinen, p. 38.

Type-species: *Dicormus aquisgranensis* Foerster. Monotypic.

Taxonomy: Foerster, 1856. Hym. Stud., v. 2, p. 55 (syn.).

trypherus (Walker). Del., s. to Fla., w. to Calif. Ecology: Common in alfalfa fields. Host: *Brachydeutera argentata* (Walk.), *Drosophila* sp.

Lamprotatus trypherus Walker, 1843. Soc. Ent. de France, Ann. (2) 1: 158. "♀" = ♂.

Cyrtogaster glasgowi Crawford, 1914. Insecutor Inscitiae Menstruus 2: 36. ♀, ♂.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32: 161 (syn.).

vulgaris Walker. B. C., Wash.; Europe. Ecology: Commonly intercepted in quarantine in living herbaceous vegetation from England, Scotland, and Continental Europe. Introduced from England into B. C. in mid-1930's and recovered. Host: *Phytomyza* sp., *P. ilicis* Curtis, *P. nigra* Meig.

Cyrtogaster vulgaris Walker, 1833. Ent. Mag. 1: 382. ♀, ♂.

Cyrtogaster thoracica Walker, 1833. Ent. Mag. 1: 382. ♀.

Cyrtogaster rufipes Walker, 1833. Ent. Mag. 1: 383. ♀, ♂.

Cyrtogaster tenuis Walker, 1833. Ent. Mag. 1: 384. ♀.

Cyrtogaster cingulipes Walker, 1833. Ent. Mag. 1: 384. ♀.

Dicormus aquisgranensis Foerster, 1841. Beitr. Monog. Pteromalinen, p. 38. ♂.

Lamprotatus Acarnas Walker, 1848. List Hym. Brit. Mus., Chalcid., v. 2, pp. 111. 168. ♀.

Cyrtogaster biglobus Foerster, 1861. Progr. Realsch. Aachen 1860-1861, p. 33. ♂.

Sphegigaster degener Walker, 1872. Notes on Chalcid., p. 117. ♀.

Taxonomy: Delucchi, 1955. Soc. Roy. Ent. de Belg., Mem. 27: 174-175 (syn.). —Askew, 1965.

Entomophaga 10: 180-181 (syn.). —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 142-143 (syn., types).

Biology: Cameron, 1939. Bul. Ent. Res. 30: 178-180, 197-199. —Askew, 1965. Entomophaga 10: 185-186 (hosts in Europe). —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 143 (hosts in England).

Genus LOPHOCOMODIA Ashmead

Lophocomodia Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App. p. VI.

Type-species: *Lophocomodia americana* Ashmead. Monotypic.

americana Ashmead. Kans.

Lophocomodia americana Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App. p. VI. ♂.

TRIBE MISCOGASTERINI

Taxonomy: Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 149-150 (approx. equal to Lamprotatini of older classifications).

Genus HALTICOPTERA Spinola

Halticoptera Spinola, 1811. Paris Mus. d'Hist. Nat., Ann. 17: 148.

Type-species: *Diptolepis flavicornis* Spinola. Desig. by Ashmead, 1904.

Pachylarthrus Westwood, 1832. London, Edinb. and Dublin Phil. Mag. and Jour. Sci. (3) 1: 127.

Type-species: *Pachylarthrus insignis* Westwood. Monotypic.

Phagonia Curtis, 1832. Brit. Ent., v. 9, folio 427.

Type-species: *Diptolepis flavicornis* Spinola. Orig. desig.

Dicyclus Walker, 1833. Ent. Mag. 1: 371, 455.

Type-species: *Dicyclus aeneus* Walker. Desig. by Westwood, 1840.

Phacostomus Nees, 1834. Hym. Ichn. Aff. Monogr., v. 2, p. 121.

Type-species: *Diptolepis patellana* Dalman. Monotypic.

Megorismus Walker, 1846. List Hym. Brit. Mus., Chalcid., v. 1, p. 29.

Type-species: *Miscogaster daiphron* Walker. Monotypic.

Tityros Walker, 1848. List Hym. Brit. Mus., Chalcid., v. 2, pp. 108, 164.

Type-species: *Tityros poreia* Walker. Monotypic.

Megalorismus Schulz, 1906. Spolia Hym., v. 147. Emend. of *Megorismus*.

Taxonomy: Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 155-159 (syn.; key to European spp.).

brodiei Ashmead. Ont. Ecology: Emerged from twig or leaf midrib galls of *Xanthoteras quercusforticorne* (Walsh). This sp. may not be *Halticoptera*; types not located.

Halticoptera brodiei Ashmead, 1896. Amer. Ent. Soc., Trans. 14: 192. ♀.

circulus (Walker). Que. and Maine, s. to Fla., w. to B. C., Wash., Oreg., Calif.; Mexico, Europe.

Host: *Agromyza parvicornis* Loew, *Cerodontha dorsalis* (Loew), *Liriomyza melampyga* (Loew), *L. langei* Frick, *L. pictella* (Thoms.), *Mayetiola destructor* (Say), *Melanagromyza virens* (Loew), *Meromyza americana* Fitch, *Oscinella* sp., *O. frit* (L.), *Phytobia angulata* (Loew), *P. clara* (Melander), *P. lateralis* (Macq.), *Phytomyza delphiniae* Frost. This species has used the name *aenea* (Walker) or *patellana* (Dalman) in all North American literature since 1933.

Dicyclus circulus Walker, 1833. Ent. Mag. 1: 456. ♀.

Dicyclus fuscicornis Walker, 1833. Ent. Mag. 1: 456. ♀.

Pteromalus palpigerus Zetterstedt, 1838. Ins. Lap. Descr., Hym., p. 425.

Pteromalus brevicornis Zetterstedt, 1838. Ins. Lap. Descr., Hym., p. 426. Preocc. by Walker, 1835.

Miscogaster Daiphron Walker, 1839. Monog. Chalcid., v. 1, p. 198. ♀.

Miscogaster Crius Walker, 1839. Monog. Chalcid., v. 1, p. 201. ♀.

Miscogaster Suilius Walker, 1839. Monog. Chalcid., v. 1, p. 202. "♀" = ♂.

Cyrtogaster liqueatus Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 336. ♂.

Cyrtogaster occidentalis Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 230. ♀, ♂.

Cyrtogaster citripes Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 230. ♂.

Polycyrtus (!) *floridanus* Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 230. ♂.

Pteromalus lapponicus Dalla Torre, 1898. Cat. Hym., v. 5, p. 131. N. name for *brevicornis* Zetterstedt.

Polycystus foersteri Crawford, 1913. U. S. Natl. Mus., Proc. 45: 313. ♀, ♂.

Taxonomy: Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 116 (*aenea*). —Ferriere, 1952. Soc. Venez. Stor. Nat., Bol. 6: 172 (*patellana*). —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 163-164 (syn.; *circulus*).

Biology: Lange, 1944. Jour. Econ. Ent. 37: 394-395. —Hills and Taylor, 1951. Jour. Econ. Ent. 44: 760-762. —Morrill and Kieckhefer, 1971. Jour. Econ. Ent. 64: 1129-1131.

goodi Crawford. N. S., Que., Wash.

Halticoptera goodi Crawford, 1915. Insector Inscitiae Menstruus 3: 107. ♀, ♂.

rosae Burks. Maine, Ont., R. I., Wis., Minn., Sask., Utah, Alaska. Host: *Rhagoletis basiola* (O. S.).

Halticoptera rosae Burks. 1955. Ent. Soc. Wash., Proc. 57: 81. ♀, ♂.

Biology: Balduf, 1959. Ill. Biol. Monog. 26: 41-50, 170-173.

stella Girault. Ariz., Calif. Host: *Aciurina maculata* (Cole).

Halticoptera stella Girault, 1917 (May). Descr. Hym. Chalcidoid. Variorum cum Observ.

III, p. 1. ♀.

Megorismus poloni Girault, 1917 (June). Psyche 24: 97. ♀.

Genus MERISMUS Walker

Merismus Walker, 1833. Ent. Mag. 1: 371, 375.

Type-species: *Merismus rufipes* Walker. Desig. by Westwood, 1840.

rufipes Walker. Va.; Europe. Probably an adventive.

Merismus rufipes Walker, 1833. Ent. Mag. 1: 378. ♀.

Genus SELADERMA Walker

Seladerma Walker, 1834. Ent. Mag. 2: 288.

Type-species: *Seladerma laetum* Walker. Desig. by Westwood, 1840.

diaeus (Walker). Ont. Ecology: Host probably an agromyzid.

Lamprotatus Diaeus Walker, 1844. Ann. and Mag. Nat. Hist. (1) 14: 16. ♀.

Taxonomy: Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 203 (*Seladerma*).

—Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32: 156.

Biology: Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 203 (type labeled, "Bred from pupa of *Vanessa cardui*," but that is erroneous and refers to next species in Walker's publication, *Pteromalus puparum* (L.); true host of *diaeus* probably an agromyzid).

Genus BUBEKIA Dalla Torre

Brachycrepis Ashmead, 1888. Canad. Ent. 20: 174, 176. Preocc. by Leconte, 1854.

Type-species: *Brachycrepis tricarinatus* Ashmead. Monotypic.

Bubekia Dalla Torre, 1897. Wien. Ent. Ztg. 16: 84. N. name.

Bubekia Dalla Torre, 1898. Cat. Hym., v. 5, p. 568. Misspelling.

Revision: Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 114.

carolinensis (Ashmead). N. C.

Acroclis carolinensis Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 228. ♂.

fallax Gahan. Ind., Tenn., Iowa, Kans., Okla. Host: *Mayetiola destructor* (Say), *Meromyza americana* Fitch.

Bubekia fallax Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 114-116. ♀, ♂.

Biology: Morrill and Kieckhefer, 1971. Jour. Econ. Ent. 64: 1129-1131.

lasiopterae (Ashmead). Ohio. Host: *Asteromyia agrostis* (O. S.).

Megorismus lasiopterae Ashmead, 1893. Ohio Agr. Expt. Sta., Tech. Ser., Bul. 1: 160. ♂.

tricarinata (Ashmead). Kans.

Brachycrepis tricarinatus Ashmead, 1888. Canad. Ent. 20: 176. ♀.

Genus PARACAROTOMUS Ashmead

Paracarotomus Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 335.

Type-species: *Paracarotomus cephalotes* Ashmead. Monotypic.

cephalotes Ashmead. Va.

Paracarotomus cephalotes Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 336. ♂.

Genus MISCOGASTER Walker

Miscogaster Walker, 1833. Ent. Mag. 1: 371, 458.

Type-species: *Halticoptera hortensis* Walker. Desig. by Ashmead, 1904.

Mischogaster Thomson, 1876. Hym. Scand., v. 4, pp. 220, 239. Emend.

Taxonomy: Delucchi, 1955. Lunds Univ., Arsskr. (n. s.) 50 (20): 6-10, 55-56.

abnormicolor Girault. Fla.

Miscogaster abnormicolor Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 8. ♀.

aurata (Ashmead). Wis., Ill.

Stictomischus auratus Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 221. ♀.

biguttata Girault. Fla.

Miscogaster biguttata Girault, 1917. Psyche 24: 97. ♀, ♂.

discoloripes Girault. Fla.

Miscogaster discoloripes Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 9. ♀.

flora Girault. Fla.

Miscogaster flora Girault, 1917. Psyche 24: 96. ♀.

keatsi Girault. Md.

Miscogaster keatsi Girault, 1917. Chalcidoidea Nova Marilandensis III, p. 5. ♀.

marilandica Girault. Md., Fla.

Miscogaster marilandica Girault, 1916. Brooklyn Ent. Soc., Bul. 11: 87. ♀.

ungutta Girault. Md.

Miscogaster ungutta Girault, 1917. Ent. News 28: 23. ♀.

Genus LAMPROTATUS Westwood

Lamprotatus Westwood, 1833. Mag. Nat. Hist. 6: 121.

Type-species: *Lamprotatus splendens* Westwood. Monotypic.

Lampretatus Walker, 1843. Soc. Ent. de France, Ann. (2) 1: 155. Misspelling.

Lamprostatus Girault, 1917. Psyche 24: 96. Misspelling.

There are several published references to *Lamprotatus pilicornis* Thomson, 1876 (Hym. Scand., v. 4, p. 229) from Greenland, as well as Sweden. After those records were published Graham, 1969 (Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 201-202) found that the type series of *pilicornis* is mixed. He has designated a lectotype for the species, placing it in synonymy under *Seladerma tarsale* (Walker). The Greenland records of *pilicornis* need to be re-examined.

canadensis Girault. Alta.

Lamprostatus canadensis Girault, 1917. Psyche 24: 96. ♀.

conicus Girault. Alaska.

Lamprostatus conicus Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. V, p. 11. ♀.

salemus (Walker). Fla.

Lampretatus salemus Walker, 1843. Soc. Ent. de France, Ann. (2) 1: 156. ♀.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32: 161 (type fragmentary, sp. cannot be placed; better material may be found later).

TRIBE ORMOCERINI

Taxonomy: Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 250-252 (approx. equal to Tridymini of older classifications; key to European genera).

Genus ELACHERTODOMYIA Girault

Elachertodomyia Girault, 1917. Canad. Ent. 49: 110.

Type-species: *Secodes phloeotribi* Ashmead. Orig. desig.

This very strange appearing chalcid is probably misplaced in this tribe and may, in fact, be misplaced in the Pteromalidae. Unfortunately the material of it that is now available is in fragmentary condition. The genus *Secodes* Foerster is Eulophidae, but Girault felt that this genus, based on an Ashmead species described in *Secodes*, belonged in Pteromalidae.

Taxonomy: Girault, 1917. Canad. Ent. 49: 110.

- phloeotribi** (Ashmead). Conn., N. J., Va. Host: *Chramesus hickoriae* Lec., *Lixus musculus* Say, *Phloeotribus frontalis* (Oliv.), *Pseudopityophthorus minutissimus* (Zimm.).
Secodes phloeotribi Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 233. ♀, ♂.
 Biology: Chittenden, 1898. Ent. Soc. Wash., Proc. 4: 78.

Genus ORMOCERUS Walker

Ormocerus Walker, 1834. Ent. Mag. 2: 168.

Type-species: *Ormocerus vernalis* Walker. Desig. by Westwood, 1840.

Hormocerus Foerster, 1856. Hym. Stud., v. 2, pp. 59, 60. Emend.

Terobia Foerster, 1878. Naturh. Ver. Rheinlande, Verh. 35: 64.

Type-species: *Terobia dispila* Foerster. Orig. desig.

Taxonomy: Delucchi, 1955. Soc. Roy. Ent. de Belg., Mem. 27: 175 (syn.). —Peck, 1963. Canad. Ent., Sup. 30: 903 (N. Amer. spp. unplaced).

flora Girault. Fla.

Terobia flora Girault, 1920. U. S. Natl. Mus., Proc. 58: 216. ♀, ♂.

vulgaris Ashmead. Alaska.

Terobia vulgaris Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 144. ♀, ♂.

Genus PARASYNTOMOCERA Girault

Parasyntomocera Girault, 1917. Chalcidoidea Nova Marilandensis II, p. 2.

Type-species: *Parasyntomocera hillmeadia* Girault. Orig. desig.

hillmeadia Girault. Md.

Parasyntomocera hillmeadia Girault, 1917. Chalcidoidea Nova Marilandensis II, p. 2. ♀.

Genus ERIXESTUS Crawford

Erixestus Crawford, 1910. U. S. Natl. Mus., Proc. 38: 87.

Type-species: *Erixestus winnemana* Crawford. Monotypic.

winnemana Crawford. Que., Md., Va. Ecology: An egg parasite. Host: *Calligrapha bigsbyana* (Kby.), *C. scalaris* (Lec.).

Erixestus winnemana Crawford, 1910. U. S. Natl. Mus., Proc. 38: 88. ♀, ♂.

Biology: Daviault, 1941. Nat. Canad. 68: 106-107.

Genus SYSTASIS Walker

Systasis Walker, 1834. Ent. Mag. 2: 228, 296.

Type-species: *Systasis encyrtoides* Walker. Desig. by Westwood, 1840.

Syntasis Ashmead, 1904. Carnegie Mus., Mem. 1: 274, 275. Misspelling.

diplosidis Eckel. Mass., Fla., Miss., Ohio, Mich., Wis., Calif. Host: *Cecidomyia resinicola* (O. S.), *C. resinicoloides* Will.

Syntasis diplosidis Eckel, 1903. Ent. News 14: 283. ♀.

Biology: Williams, 1909. Ent. News 20: 7 (*Syntasis*).

Morphology: Eckel, 1902. Ent. News 14: 283, pl. xiv (larva, adult).

encyrtoides Walker. Wis., Alaska, Oreg.; Europe. Host: *Contarinia* sp. Numerous dipterous hosts recorded in Palearctic literature.

Systasis encyrtoides Walker, 1834. Ent. Mag. 2: 296. ♀, ♂.

Tridymus punctatus Ratzeburg, 1852. Ichn. d. Forstins., v. 3, p. 227.

Hormocerus impletus Walker, 1872. Notes on Chalcid. pt. 6, p. 96. ♀.

Systasis longicornis Thomson, 1878. Hym. Scand., v. 5, p. 204. ♀.

Taxonomy: Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 261 (syn.; types).

Biology: Parnell, 1963. Roy. Ent. Soc. London, Trans. 115: 271-272. —Ferron, 1964. Ann. des Epiphyt. (C) 15: 277. —Kralovic, 1964. Biologia Bratislava 19: 265.

Morphology: Solinas, 1965. Entomologica [Bari] 1: 248 (immature stages).

Genus *GASTRANCISTRUS* Westwood

Gastrancistrus Westwood, 1833. London, Edinb. and Dublin Phil. Mag. and Jour. Sci. (3) 2: 444.

Type-species: *Gastrancistrus vagans* Westwood. Monotypic.

Glyphe Walker, 1834. Ent. Mag. 2: 168, 170.

Type-species: *Glyphe autumnalis* Walker. Monotypic.

Tridymus Ratzeburg, 1848. Ichn. d. Forstins., v. 2, p. 183.

Type-species: *Tridymus aphidum* Ratzeburg. Desig. by Ashmead, 1904, p. 273.

Ashmead, 1904, p. 392, Desig. *Pteromalus salicis* Nees, but designation on p. 273 has priority.

Tripedias Foerster, 1856. Hym. Stud., v. 2, p. 60. No species.

Type-species: *Gastrancistrus tripedias* Boucek. Desig. by Boucek, 1964.

Trydymus Girault, 1917. Psyche 24: 98. Misspelling, often used.

Revision: Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 270-327. (*Tridymus aphidum* Ratzeburg an unfortunate choice for type-species of *Trydymus*; *Pteromalus salicis* Nees might be more satisfactory; application may be made to Internat. Comn. to change type-species).

Taxonomy: Walker, 1846. List Hym. Brit. Mus., Chalcid., v. 1, p. 25 (syn.). — Boucek, 1964. Ceskoslov. Spolec. Ent. Casopis 61: 259 (syn.).

aeneicornis (Girault), n. comb. N. Y. Ecology: Associated with plum tree.

Trydymus aeneicornis Girault, 1917. Psyche 24: 98. ♀.

americensis (Girault). N. comb. Mich. Ecology: Reared from cecidomyiid stem gall on *Salix*.

Trydymus americensis Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 8. ♀.

aphidis (Girault), n. comb. Conn., N. Y., Ark. Ecology: Reared from leaf or tendril galls on grape. Host: *Lasioptera vitis* O. S.

Trydymus aphidis Girault, 1917. U. S. Natl. Mus., Proc. 53: 450. ♀.

aureipes (Girault), n. comb. Fla.

Trydymus aureipes Girault, 1917. U. S. Natl. Mus., Proc. 53: 449. ♀.

biguttatipennis (Girault), n. comb. Conn., Fla.

Trydymus biguttatipennis Girault, 1917. U. S. Natl. Mus., Proc. 53: 449. ♀.

clavicornis (Girault), n. comb. Sask.

Trydymus clavicornis Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. V, p. 15. ♀.

Taxonomy: Girault, 1920. U. S. Natl. Mus., Proc. 58: 214 (redescription as "N. sp." on same specimens used in 1917).

gargantua (Girault), n. comb. N. H., Conn., N. Y., Mich., Minn. Ecology: Reared from gall on *Salix*.

Trydymus gargantua Girault, 1917. Psyche 24: 98. ♀.

metallicus (Ashmead), n. comb. N. Y., N. J., Kans. Ecology: Reared from twig galls of basket willow, *Salix purpurea*. Host: *Rhabdophaga salicis* Schr. This sp. may be a synonym of *Gastrancistrus salicis* (Nees).

Trydymus metallicus Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App. p. V. ♀, ♂.

nigriclavus (Girault), n. comb. Md.

Trydymus nigriclavus Girault, 1917. Chalcidoidea Nova Marilandensis II, p. 2. ♀.

oblongus (Provancher), n. comb. Que.

Semiotellus oblongus Provancher, 1881. Nat. Canad. 12: 295. ♀.

Taxonomy: Burks, 1964 (1963). Canad. Ent. 95: 1262 (type).

poloni (Girault), n. comb. N. H.

Trydymus poloni Girault, 1917. Psyche 24: 98. ♀.

robiniaecola (Ashmead), n. comb. Va., W. Va.

Trydymus robiniaecola Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 334. ♀, ♂.

salicis (Nees). N. Y.; Europe. Ecology: Reared from galls on *Salix*. Host: *Rhabdophaga salicis* Schr. Species identified by Ashmead, reared in N. Y. from galls on *Salix*, the plants possibly of European origin.
Pteromalus salicis Nees, 1834. Hym. Ichn. Aff. Monog., v. 2, pp. 105, 424. ♀, ♂.
Seladerma Capreae Walker, 1848. List Hym. Brit. Mus., Chalcid., v. 2, p. 112. Preocc. by Linnaeus, 1761.

Taxonomy: Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 303 (syn., types).

Biology: Felt, 1902. N. Y. State Mus., Bul. 53: 744.

TRIBE PIRENINI

Taxonomy: Ferriere, 1934. Schweiz. Ent. Gesell., Mitt. 16: 83-92 (key to genera). —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 329-330 (revised key to European genera).

Genus PIRENE Haliday

Macroglenes Westwood, 1832. London, Edinb. and Dublin Phil. Mag. and Jour. Sci. (3) 1: 127.

Type-species: *Macroglenes oculatus* Westwood. Monotypic.

Pirene Haliday, 1833. Ent. Mag. 1: 336.

Type-species: *Pirene varicornis* Haliday. Desig. by Westwood, 1840.

Corynocere Nees, 1834. Hym. Ichn. Aff. Monog., v. 2, p. 123.

Type-species: *Corynocere deplanata* Nees. Desig. by Gahan and Fagan, 1923.

Phocion Girault, 1925. Insecutor Inscitiae Menstruus 13: 91.

Type-species: *Phocion ipswichi* Girault. Orig. desig.

Pirenisca Ghesquiere, 1946. Rev. de Zool. et de Bot. Africaines 34: 369. N. name, unnecessarily proposed for *Pirene*.

Taxonomy: Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 334-335 (syn.;

Macroglenes has priority, but *Pirene* more often used; application being made to Internat. Comn. for retention of *Pirene*).

marylandica Girault. Md. Type fragmentary; placement of this sp. in *Pirene* may be erroneous.

Pirene marylandica Girault, 1916. Canad. Ent. 48: 116. ♀.

penetrans (Kirby). N. J., Ont., Mich., Oreg.; Europe. Host: *Contarinia tritici* (Kirby), *Sitodiplosis mosellana* (Gehin).

Ichneumon penetrans Kirby, 1800. Linn. Soc. London, Trans. 5: 109. ♀, ♂.

Macroglenes oculatus Westwood, 1832. London, Edinb. and Dublin Phil. Mag. and Jour. Sci. (3) 1: 127. ♂.

Macroglenes brevicornis Thomson, 1878. Hym. Scand., v. 5, p. 189. ♀.

Taxonomy: Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 341 (syn.).

Biology: Johansson, 1936. Stat. Vaxtskyd., Med. 15: 4-6, 13-18.

Genus SPATHOPUS Ashmead

Spathopus Ashmead, 1904. Carnegie Mus., Mem. 1: 272.

Type-species: *Spathopus anomalipes* Ashmead. Orig. desig.

Taxonomy: Boucek, 1964. Ceskoslov. Spolec. Ent., Casopis 61: 255-257 (redescription).

anomalipes Ashmead. Fla.

Spathopus anomalipes Ashmead, 1904. Carnegie Mus., Mem. 1: 272. "♀" = ♂.

Taxonomy: Gahan and Peck, 1946. Wash. Acad. Sci., Jour. 36: 316 (type).

Genus HERBERTIA Howard

Herbertia Howard, 1894. Linn. Soc. London, Jour., Zool. 25: 98.

Type-species: *Herbertia lucens* Howard. Monotypic.

Revision: Burks, 1959. Ent. Soc. Wash., Proc. 61: 249-255.

Taxonomy: Ferriere, 1934. Schweiz. Ent. Gesell., Mitt. 16: 84-93.

wallacei Burks. Pa., Md., Va., Ohio, Tex.; Mexico. Host: *Phytomyza ilicicola* Loew.
Herbertia wallacei Burks, 1959. Ent. Soc. Wash., Proc. 61: 254. ♀, ♂.

Genus DIPACHYSTIGMA Crawford

Dipachystigma Crawford, 1911. U. S. Natl. Mus., Proc. 39: 618.

Type-species: *Dipachystigma cushmani* Crawford. Monotypic.

cushmani Crawford. La. Host: *Stephanoderes* sp.

Dipachystigma cushmani Crawford, 1911. U. S. Natl. Mus., Proc. 39: 619. ♀.

secundum Girault. D. C.

Dipachystigma secunda Girault, 1917. Descr. Stellarum Nov., p. 15. ♀.

Genus MORODORA Gahan

Morodora Gahan, 1933. Canad. Ent. 65: 31.

Type-species: *Morodora armata* Gahan. Monotypic.

armata Gahan. Mont., B. C. Host: *Proctocalliphora asiovora* S. and D., *P. avium* S. and D.

Morodora armata Gahan, 1933. Canad. Ent. 65: 32. ♀, ♂.

Genus PARECRIZOTES Girault

Parecrizotes Girault, 1916. Ent. Soc. Amer., Ann. 9: 304.

Type-species: *Parecrizotes marylandensis* Girault. Orig. desig.

marylandensis Girault. N. Y., Pa., Md., D. C., Va.

Parecrizotes marylandensis Girault, 1916. Ent. Soc. Amer., Ann. 9: 305. ♂.

Genus STIGMATOCREPIS Ashmead

Stigmatocrepis Ashmead, 1904. Carnegie Mus., Mem. 1: 273, 274.

Type-species: *Stigmatocrepis americana* Ashmead. Orig. desig.

americana Ashmead. Fla.

Stigmatocrepis americana Ashmead, 1904. Carnegie Mus., Mem. 1: 273. ♀, ♂.

Taxonomy: Gahan and Peck, 1946. Wash. Acad. Sci., Jour. 36: 316 (types).

SUBFAMILY PTEROMALINAE

TRIBE CRATOMINI

Genus CRATOMUS Dalman

Cratomus Dalman, 1820. Svenska Vetensk. Akad., Handl. 41: 173, 177.

Type-species: *Cynips megacephalus* Fabricius. Monotypic.

Cratomus Dalman, 1822. Svenska Vetensk. Akad., Handl. 43: 403. Emend.

cancellatus Cockerell. Colo.

Cratomus cancellatus Cockerell, 1916. Ent. News 27: 417. ♂.

leucophthalmus Ashmead. Ont., Pa., D. C.

Cratomus leucophthalmus Ashmead, 1888. Canad. Ent. 20: 55. ♂.

megacephalus (Fabricius). N. Y., N. J., D. C., Ill.

Cynips megacephala Fabricius, 1793. Ent. System., v. 2, p. 103.

Cratomus megalcephalus Schulz, 1906. Spolia Hym., p. 144. Emend.

TRIBE PACHYNEURINI

Genus CORUNA Walker

Coruna Walker, 1833. Ent. Mag. 1: 371, 379.

Type-species: *Coruna clavata* Walker. Monotypic.

Coryna Foerster, 1856. Hym. Stud., v. 2, p. 59. Emend.; preocc. by Bosc, 1802.

Pachycrepis Foerster, 1856. Hym. Stud., v. 2, pp. 51, 54, 59. N. name unnecessarily proposed for *Coruna* Walker, preocc. in Botany.

- clavata* Walker. N. B., Maine, N. J., Wash., Calif.; Europe. Host: *Aphidius* sp., *Praon* sp.
Coruna clavata Walker, 1833. Ent. Mag. 1: 380. ♀, ♂.
Chrysolampus legenarius Nees, 1834. Hym. Ichn. Aff. Monog., v. 2, p. 132. ♂.
Pteromalus aphidivorus Foerster, 1841. Beitr. Monog. Pteromalinen, p. 28. ♂.
Pteromalus segmentarius Foerster, 1841. Beitr. Monog. Pteromalinen, p. 28. ♂.
Gastrancistrus Hierocles Walker, 1848. List Hym. Brit. Mus., Chalcid., v. 2, pp. 105, 158. ♂.
Coryna dubia Buckton, 1879. Monog. Brit. Aphides, v. 2, p. 86.

Taxonomy: Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 845 (syn.).

Biology: Haviland, 1922. Quart. Jour. Micros. Sci. 66: 321-338. —Ferriere and Voukassovitch, 1928. Soc. Ent. de France, Bul. 1928: 28. —Dunn, 1949. Bul. Ent. Res. 40: 103, 117. —MacGillivray and Spicer, 1953. Canad. Ent. 85: 426-430. —Shands *et al.*, 1955. Ent. Soc. Wash., Proc. 57: 132-135. —Stary, 1962. Zool. Listy 11: 267.

Genus EUNEURA Walker

Euneura Walker, 1844. Ann. and Mag. Nat. Hist. (1) 14: 331.

Type-species: *Euneura augurus* Walker. Monotypic.

Euneura Agassiz, 1846. Nomencl. Zool., p. 427. Emend.

Hysicamara Foerster, 1856. Hym. Stud., v. 2, pp. 52, 54. No species.

Type-species: *Hysicamara ratzeburgi* Reinhard. Desig. by Reinhard, 1859, by subsequent reference.

Hysicamera Dalla Torre, 1898. Cat. Hym., v. 5, p. 168. Emend.

Morphological characters to distinguish this genus from *Pachyneuron* are extremely vague and weak, but the species of *Euneura* are ecologically distinct in that they are known to be only secondary parasites of aphids on pines and other gymnosperms.

lachni (Ashmead). N. B., Maine, s. to Fla., w. to Utah, Idaho, B. C., Calif. Host: *Pausia* sp., *P. californica* (Ashm.), *P. ponderosae* (Mues.).

Pachycrepis lachni Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 193. ♀.

Taxonomy: Gahan, 1942. U. S. Natl. Mus., Proc. 92: 46.

Genus PACHYNEURON Walker

Pachyneuron Walker, 1833. Ent. Mag. 1: 371, 380.

Type-species: *Pachyneuron formosum* Walker. Monotypic.

Pachyneuron Blanchard, 1840. Hist. Nat. Anim. Artic., Ins., v. 3, pp. 260, 266. Emend.

Pachyneuron Agassiz, 1846. Nomencl. Zool. p. 778. Emend.

Serimus Brethes, 1913. Buenos Aires Mus. Nac. de Hist. Nat., An. 24: 90.

Type-species: *Serimus argentinus* Brethes. Orig. desig.

Propachyneuron Girault, 1917. Psyche 24: 102.

Type-species: *Encyrtus siphonophorae* Ashmead. Monotypic.

Neopachyneuron Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. V, p. 9.

Type-species: *Pachyneuron eros* Girault. Monotypic.

Atrichoptilus Delucchi, 1956 (1955). Ztschr. f. Angew. Ent. 38: 141.

Type-species: *Pachyneuron aeneum* Masi. Orig. desig.

Revision: Delucchi, 1956 (1955). Ztschr. f. Angew. Ent. 38: 122-139 (European spp.).

Taxonomy: De Santis, 1957. Univ. Nac. de La Plata, Notas del Mus. 19: 118 (syn.). —Peck, 1963. Canad. Ent., Sup. 30: 612 (syn.). —Boucek, 1965. Mus. Natl. Pragae, Acta Ent. 11: 16-18 (syn.).

- albutius* (Walker). Va., s. to Fla., w. to B. C. and Calif.; Mexico. Host: *Allograpta exotica* (Wied.), *A. obliqua* (Say), *Baccha clavata* (F.), *B. fuscipennis* Say, *Eupeodes volucris* O. S., *Mesograpta polita* (Say), *Metasyrphus americanus* (Wied.), *M. confertus* Fluke, *Parargus tibialis* (Fall.), *Scaeva pyrastris* (L.), *Sphaerophoria cylindrica* (Say), *Syrphus opinator* O. S., *S. philadelphicus* Macq., *S. rectus* O. S., *S. ribesii* (L.), *S. torvus* O. S.
Pachyneuron albutius Walker, 1843. Soc. Ent. de France, Ann. (2) 1: 158. ♀.

- Spalangia* ? *syrrphi* Ashmead, 1881. *Canad. Ent.* 13: 171. ♀, ♂. Preocc. by Ratzeburg, 1848.
Pachyneuron allograptae Ashmead, 1887. U. S. Dept. Agr., Div. Ent. Bul. 14: 15. ♀, ♂.
- Taxonomy: Burks, 1975. *Brit. Mus. (Nat. Hist.) Ent.*, Bul. 32: 154 (syn.).
- Biology: Kamal, 1926. *Jour. Econ. Ent.* 19: 725-727. — Kamal, 1939. *Egypt Min. Agr., Tech. and Sci. Serv.*, Bul. Ent. Sect. 207: 36, 46-47. — Knight, 1944. *Jour. Econ. Ent.* 37: 101.
 — Bean, 1950. *Jour. Econ. Ent.* 43: 109-110. — Weems, 1954. *Ohio Jour. Sci.* 54: 51. — Brown and Clark, 1960. *Canad. Ent.* 92: 808. — Harper, 1963. *Canad. Ent.* 95: 871.
- altiscutum** Cook. N. B., Ont., Maine and N. H., s. to S. C., w. to Mich., Colo., Calif. Host: *Cremifania nigrocellulata* Czerny, *Leucopis* sp., *L. americana* Mall., *L. obscura* Hal., *L. pinicola* Mall. Numerous other host records have been published, from Lepidoptera, Coccidae, Pseudococcidae, and other Chalcidoidea, but these need to be restudied.
Pachyneuron altiscuta Cook, 1885 (1884). *Mich. State Hort. Soc., Ann. Rpt.* 14: 91. ♀, ♂.
- Biology: Clancy, 1944. *Jour. Econ. Ent.* 37: 450-451. — Judd, 1950 (1949). *Ent. Soc. Amer.*, Ann. 42: 461-464. — Brown and Clark, 1957 (1956). *Canad. Ent.* 88: 679-682. — Clark and Brown, 1957. *Canad. Ent.* 89: 408-409. — Clark and Brown, 1962. *Canad. Ent.* 94: 1174.
 — Peterson, 1962. *Canad. Ent.* 94: 740.
- anthomyiae** Howard. Fla.; Hawaii. Host: *Leucopis* sp.
Pachyneuron anthomyiae Howard, 1885. In Hubbard, *Insects Affecting the Orange*, p. 217. ♀, ♂.
- Biology: Swezey, 1921. *Jour. Econ. Ent.* 14: 256.
- californicum** Girault. B. C., Wash., Oreg., Calif.; Mexico. Host: *Chrysopa californica* Coq., *C. majuscula* Banks.
Pachyneuron californicum Girault, 1917. *Psyche* 24: 90. ♀, ♂.
- Biology: Clancy, 1946. *Univ. Calif. Pubs.*, Ent. 7: 454-456.
- eros** Girault. Utah, B. C., Wash., Oreg., Calif.; Hawaii. Host: *Leucopis* sp., *L. bella* Loew.
Pachyneuron eros Girault, 1917. *Descr. Hym. Chalcidoid. Variorum cum Observ.* V, p. 1. ♀.
- Biology: Timberlake, 1926. *Hawaii. Ent. Soc., Proc.* 6: 308.
- groenlandicum** (Holmgren). Greenland. Ecology: Reared from syrphid.
Pteromalus groenlandicus Holmgren, 1872. *Ofvers. Kongl. Vetensk.-Akad., Forh.* 29: 100. ♀, ♂.
- Taxonomy: Hendriksen and Lundbeck, 1917. *Meddel. Gruenland* 22: 550-551.
- hammari** Crawford. N. Mex., Ariz.
Pachyneuron hammari Crawford, 1914. *Insecutor Inscitiae Menstruus* 2: 36. ♀, ♂.
- mucronatum** Girault. Kans., Tex., Ariz., Calif.; Mexico. Ecology: Associated with coccids on *Opuntia*. Host: *Leucopis* sp.
Pachyneuron mucronatum Girault, 1917 (1916). *Insecutor Inscitiae Menstruus* 4: 116. ♀.
- Biology: Brandhorst, 1943. *Kans. Acad. Sci., Trans.* 46: 168.
- siphonophorae** (Ashmead). Que., Maine, s. to Fla., w. to B. C., Wash., Oreg., Calif.; Hawaii, Mexico, West Indies, Cent. and So. Amer. Host: *Aphidius* sp., *Diaeretiella* sp., *D. rapae* (M'Int.), *Lysiphlebus* sp., *L. testaceipes* (Cress.), *Praon* sp., *Trioxys* sp. Numerous records have been published of this species as a primary parasite of a long list of species of aphids; rearings show, however, that this is a secondary parasite.
Eucyrtus siphonophorae Ashmead, 1886. *Amer. Ent. Soc., Trans.* 13: 131. ♀.
Pachyneuron aphidivora Ashmead, 1887. U. S. Dept. Agr., Div. Ent. Bul. 14: 14. ♀.
Pachyneuron maidaphis Ashmead, 1888. *Fla. Agr. Expt. Sta., Bul.* 2: 23. ♀.
Pachyneuron micans Howard, 1890. U. S. Dept. Agr., *Insect Life* 2: 246. ♀, ♂.
- Taxonomy: Gahan, 1924 (1923). *Ent. Soc. Wash., Proc.* 25: 187 (syn.).
- Biology: Cole, 1925. *Jour. Econ. Ent.* 18: 222. — Horsfall, 1926. *Iowa Univ., Nat. Hist.* 11: 51.
 — Spencer, 1926. *Ent. Soc. Amer., Ann.* 19: 147. — Folsom and Bondy, 1930. U. S. Dept. Agr., Cir. 116: 8. — MacGillivray and Spicer, 1953. *Canad. Ent.* 85: 427. — Shands *et al.*, 1955. *Ent. Soc. Wash., Proc.* 57: 132-135. — van den Bosch *et al.*, 1962. *Jour. Econ. Ent.* 55: 861. — Jackson *et al.*, 1971. *Jour. Econ. Ent.* 64: 1435.

- syrphicola** Ashmead. Fla. Host: *Baccha clavata* (F.), *B. fuscipennis* Say, *Metasyrphus americanus* (Wied.).
Pachyneuron syrphi Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 131. ♀, ♂. Preocc. by Ratzeburg, 1848 and Ashmead, 1881.
Pachyneuron syrphicola Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 193. N. name.
 Biology: Miller, 1929. Fla. Agr. Expt. Sta., Bul. 203: 459-461.
texanum Girault. Ohio, La., Tex., N. Mex. Ecology: Reared from syrphid.
Pachyneuron texanum Girault, 1917. Psyche 24: 90. ♀.
validum Waterston. Calif. Host: *Euphyllura arbuti* Schwarz.
Pachyneuron validum Waterston, 1923. Bul. Ent. Res. 14: 110. ♀, ♂.
virginicum Girault. Maine, Va., Ill. Host: *Aphidius* sp.
Pachyneuron virginicum Girault, 1917. Psyche 24: 89. ♀, ♂.
 Biology: Wage *et al.*, 1965. U. S. Dept. Agr., Tech. Bul. 1338: 29.

Genus PACHYCREPOIDEUS Ashmead

Pachycrepoideus Ashmead, 1904. Carnegie Mus., Mem. 1: 329.

Type-species: *Pachycrepoideus dubius* Ashmead. Orig. desig.

Anisopteromalina Boucek, 1954. Mus. Natl. Pragae, Acta Ent. 29: 57.

Type-species: *Anisopteromalina crassinervis* Boucek. Orig. desig.

Taxonomy: Boucek, 1957 (1956). Ceskoslov. Spolec. Ent., Casopis 53: 165 (syn.).

vindemiae (Rondani). Ont., s. to Fla., w. to B. C., Calif.; Cosmopolitan. Host: *Anastrepha* sp., *Calliphora* sp., *Ceratitis capitata* (Wied.), *Drosophila melanogaster* Meig., *Fannia canicularis* (L.), *F. scalaris* (F.), *Haematobia irritans* (L.), *Hylemya brassicae* (Bouche), *Lucilia illustris* (Meig.), *Musca domestica* L., *Phaenicia sericata* (Meig.), *Phormia regina* (Meig.), *Piophilha casei* (L.), *Rhagoletis* sp., *R. fausta* (O. S.), *Stomoxys calcitrans* (L.).

Encyrtus vindemiae Rondani, 1875. Com. Agr. Parmense, Bol. 8: 145.

Encyrtus vindemiae Rondani, 1876. Soc. Ent. Ital., Bol. 8: 84. Emend.

Pachycrepoideus dubius Ashmead, 1904. Carnegie Mus., Mem. 1: 329. ♀.

Anisopteromalina crassinervis Boucek, 1954. Mus. Natl. Pragae, Acta Ent. 29: 57. ♀.

Pachycrepoideus elongata Delucchi, 1956 (1955). Ztschr. f. Angew. Ent. 38: 141. ♀.

Taxonomy: Delucchi, 1956 (1955). Ztschr. f. Angew. Ent. 38: 139-141 (syn.). —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 846-847 (syn.).

Biology: Girault and Sanders. 1910. Psyche 17: 108-117. —Martelli, 1910 (1909). Lab. Zool. Gen. e Agr. Portici, Bol. 4: 169-172. —Silvestri, 1917. Lab. Zool. Gen. e Agr. Portici, Bol. 12: 143-145. —Pemberton and Willard, 1918. Jour. Agr. Res. 15: 461-463. —Roberts, 1935. Jour. Agr. Res. 50: 493. —Crandall, 1939. Ent. Soc. Amer., Ann. 32: 632-654. —Nostvik, 1954. Oikos 5: 195-204. —Steve, 1959. Jour. Econ. Ent. 52: 530-531. —Azab *et al.*, 1964 (1963). Soc. Ent. d'Egypte, Bul. 47: 280. —Sychevskaja, 1963. Zool. Zhur. 42: 858. —Legner *et al.*, 1965. Puerto Rico Univ., Jour. Agr. 49: 372.

Morphology: Parker, 1924. Soc. Ent. de France, Ann. 93: 309 (larva).

TRIBE RHAPHITELINI

Genus RHAPHITELUS Walker

Rhaphitelus Walker, 1834. Ent. Mag. 2: 168, 178.

Type-species: *Rhaphitelus maculatus* Walker. Monotypic.

Styloceras Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 207.

Type-species: *Styloceras ladenbergii* Ratzeburg. Desig. by Gahan and Fagan, 1923.

Rhaphidotelus Agassiz, 1846. Nomencl. Zool., p. 932. Emend.

Storthygocerus Ratzeburg, 1848. Ichn. d. Forstins., v. 2, p. 208. N. name for *Styloceras*, thought to be inappropriate.

Eucercchysius Brethes, 1913. Buenos Aires, Mus. Nac. de Hist. Nat., An. 24: 103.

Type-species: *Eucercchysius scolyti* Brethes. Monotypic.

Evidently it is difficult to spell this generic name. Thomson, 1878 (Hym. Scand., v. 5, p. 37) spelled it *Raphitelus* and Kurdjumov, 1913 (Ent. Obozr. 13: 4) spelled it *Rhaphiteles*. Gahan and Fagan, 1923 (U. S. Natl. Mus., Bul. 124: 138) spelled its synonym *Styloceras* as *Stylocerus*.

Revision: Boucek, 1957. Mus. Natl. Pragae, Acta Ent. 2: 76-78 (European fauna).

Taxonomy: De Santis, 1952. Soc. Ent. Argentina, Rev. 15: 270 (syn.). —Hedqvist, 1963. Stud. Forest. Suecica 11: 93-94.

maculatus Walker. Que., s. to N. C., w. to Wash., Oreg., Calif.; Europe. Host: *Hylesinus* sp., *Magdalis* sp., *M. armicollis* (Say), *M. barbata* (Say), *Pissodes strobi* (Peck), *Phloeosinus punctatus* Lec., *Phloeotribus* sp., *Scolytus multistriatus* (Marshall), *S. rugulosus* (Ratz.).

Rhaphitelus maculatus Walker, 1934. Ent. Mag. 2: 179. "♂" = ♀.

Pteromalus Hecato Walker, 1839. Monog. Chalcid., v. 1, p. 271. ♂.

Pteromalus subulifer Foerster, 1841. Beitr. Monog. Pteromalinen, p. 30. ♀.

Taxonomy: Masi, 1919. Genova, Mus. Civ. Stor. Nat., Ann. (3) 8: 160-161. —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 420-421 (syn., types).

Biology: Smith, 1899. Ent. Amer. 5: 216. —Russo, 1938. R. Lab. Ent. Agr. Portici, Bol. 2: 216-225. —Ferriere, 1948. Schweiz. Ent. Gesell., Mitt. 21: 527-528. —Leuchs, 1955. Ztschr. Pflanzenkrank. u. Pflanzensch. 62: 550. —Jamnicky, 1959. Biologia, Bratislava 14: 817. —Szczepanski, 1960. Polskie Pismo Ent. 30: 409. —Chararas, 1962. Encyc. Ent. 38: 452.

Morphology: Domenichini, 1953. Bol. Zool. Agr. e di Bach 19: 251 (gaster).

Genus METACOLUS Foerster

Metacolus Foerster, 1856. Hym. Stud., v. 2, pp. 65, 70.

Type-species: *Metacolus unifasciatus* Foerster. Monotypic.

Pterosema Foerster, 1878. Naturh. Ver. Rheinlande, Verh. 35: 44.

Type-species: *Pterosema varicolor* Foerster. Orig. desig.

Revision: Burks, 1965. Ent. Soc. Wash., Proc. 67: 116-119.

Taxonomy: Boucek, 1957. Mus. Natl. Pragae, Acta Ent. 2: 76 (syn.). —Hedqvist, 1963. Stud. Forest. Suecica 11: 97.

fasciatus Girault. N. Dak., s. to N. Mex., w. to Wash., Oreg., Calif. Ecology: Probably a primary parasite of scolytid beetles in gymnospermous trees, but usually reared in association with several other parasites. Its exact host relationships are difficult to establish.

Metacolus fasciatus Girault, 1917. Descr. Stellarum Nov., p. 14. ♀.

Metacolus bifasciatus Girault, 1917. Descr. Stellarum Nov., p. 14. ♀, ♂.

Taxonomy: Burks, 1953. Ent. Soc. Wash., Proc. 55: 44 (syn.).

keeni Burks. N. Mex., Calif. Ecology: Probably a primary parasite of scolytid beetles in pines.

Metacolus keeni Burks, 1965. Ent. Soc. Wash., Proc. 67: 118. ♀, ♂.

TRIBE PTEROMALINI

Genus DINOTISCUS Ghesquiere

Dinotus Foerster, 1856. Hym. Stud., v. 2, pp. 66, 70. No species. Preocc. by Guettard, 1770.

Type-species: *Dinotus bidentulus* Thomson. Desig. by Ashmead, 1904.

Dinotiscus Ghesquiere, 1946. Rev. de Zool. et de Bot. Africaines 34: 370. N. name.

Revision: Crawford, 1912. U. S. Natl. Mus., Proc. 43: 169 (*Cecidostiba* Thomson). —Hedqvist, 1963. Stud. Forest. Suecica 11: 83-93 (Palearctic spp., *Dinotiscus*).

Taxonomy: Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 568 (Nearctic spp. placed in *Cecidostiba* belong in *Dinotiscus*).

acutus (Provancher). N. S. and Que., s. to Va. and W. Va., w. to B. C., Wash., Oreg., Calif.

Host: *Dendroctonus monticolae* Hopk., *Polygraphus rufipennis* (Kby.).

Dinotus acutus Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 201. ♀.

Cecidostiba ashmeadi Crawford, 1912. U. S. Natl. Mus., Proc. 43: 170. ♀.

- Taxonomy: Peck, 1951. In Muesebeck, *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 557 (syn.).
- burkei** (Crawford). Colo., N. Mex., Idaho, Utah, Ariz., Wash., Oreg., Calif. Host: *Dendroctonus brevicornis* Lec., *D. engelmanni* Hopk., *D. obesus* (Mann.).
- Cecidostiba burkei* Crawford, 1912. U. S. Natl. Mus., Proc. 43: 170. ♀.
- Biology: Massey and Wygant, 1954. U. S. Dept. Agr., Cir. 944: 22, 26.
- dendroctoni** (Ashmead). Va., W. Va., N. C., Ga., Wis., Mont., Idaho, B. C., Wash., Calif. Host: *Cylindrocopturus furnissi* Buch., *Dendroctonus frontalis* Zimm., *D. monticolae* Hopk., *D. pseudotsugae* Hopk., *Ips grandicollis* (Eichh.), *Polygraphus rufipennis* (Kby.).
- Cecidostiba dendroctoni* Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 337. ♀.
- Biology: Furniss, 1942. Jour. Econ. Ent. 35: 859. — Evenden *et al.*, 1943. U. S. Dept. Agr., Cir. 664: 17. — Fronk, 1947. Va. Agr. Expt. Sta., Tech. Bul. 108: 10. — Franklin, 1969. Ga. Ent. Soc., Jour. 4: 121.
- elongatus** (Ashmead). Fla.
- Dinotus elongatus* Ashmead, 1888. Canad. Ent. 20: 175. ♀.
- polygraphi** (Ashmead). Maine, Va., W. Va. Host: *Polygraphus rufipennis* (Kby.).
- Cecidostiba polygraphi* Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 338. ♀, ♂.
- thomsoni** (Crawford). Wyo., Mont., Wash., Oreg., Calif. Host: *Pissodes* sp., *Scolytus ventralis* Lec.
- Cecidostiba thomsoni* Crawford, 1912. U. S. Natl. Mus., Proc. 43: 171. ♀, ♂.

Genus RHOPALICUS Foerster

- Rhopalicus* Foerster, 1856. Hym. Stud., v. 2, pp. 66, 70.
- Type-species: *Cleonymus maculifer* Foerster. Monotypic.
- pulchripennis** (Crawford). Que., and Maine, s. to Md. and Miss., w. to B. C., Wash., Oreg., Calif. Host: *Cylindrocopturus eatoni* Buch., *C. furnissi* Buch., *Dendroctonus brevicornis* Lec., *D. monticolae* Hopk., *D. murrayanae* Hopk., *D. ponderosae* Hopk., *Pissodes* sp., *P. proximus* Hopk., *P. strobi* (Peck), *P. terminalis* Hopk., *Pseudohylesinus nebulosus* (Lec.), *Scolytus unispinosus* Lec.
- Sphenotherus pulchripennis* Crawford, 1912. U. S. Natl. Mus., Proc. 43: 168. ♀.
- Rhopalicus americanus* Girault, 1916. Ent. Soc. Amer., Ann. 9: 296. ♀.
- Taxonomy: Gahan, 1924. U. S. Natl. Mus., Proc. 65 (4): 16 (syn.).
- Biology: Taylor, 1929. Ent. Amer. (n. s.) 10: 17-22, 66-67. — DeLeon, 1934. Canad. Ent. 66: 61. — Furniss, 1942. Jour. Econ. Ent. 35: 859. — Reid, 1957. Canad. Ent. 89: 7. — Keen, 1958. U. S. Dept. Agr., Tech. Bul. 1169: 21, 100. — Stark and Wood, 1964. Canad. Ent. 96: 1217.
- tutela** (Walker). Que., Ont., Maine, N. H., Conn., N. Y., Pa., Mich., Wis.; Europe. Introduced from Europe into Ont. and Que. in mid 1930's, but known to be established in New England in 1920. Host: *Ips pini* (Say), *Pissodes strobi* (Peck).
- Cheipopachus tutela* Walker, 1836. Ent. Mag. 4: 14. ♀, ♂.
- Cleonymus maculifer* Foerster, 1840. Beitr. Monog. Pteromalinen, p. 34. ♀.
- Pteromalus suspensus* Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 189.
- Pteromalus Spinolae* Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 189. ♀, ♂. Preocc. by Foerster, 1841.
- Pteromalus immaculatus* Ratzeburg, 1844. Ichn. d. Forstins., v. 1, pp. 189, 205.
- Pteromalus lunula* Ratzeburg, 1848. Ichn. d. Forstins., v. 2, p. 193. ♀.
- Pteromalus multicolor* Ratzeburg, 1848. Ichn. d. Forstins., v. 2, p. 193. N. name for *spinolae* Ratzeburg.
- Pteromalus aemulus* Ratzeburg, 1848. Ichn. d. Forstins., v. 2, p. 203.
- Rhopalicus Ansellus* Thomson, 1878. Hym. Scand., v. 5, p. 42. ♀, ♂.
- Taxonomy: Kurdjumov, 1913. Ent. obozr. 13: 10 (syn.). — Ferriere, 1948. Schweiz. Ent. Gesell., Mitt. 21: 520 (syn.). — Hedqvist, 1963. Stud. Forest. Suecica 11: 71-79 (characters). — Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 413 (types).
- Biology: Hanson, 1937. Bul. Ent. Res. 28: 206. — Nuorteva, 1956. Acta Ent. Fenn. 13: 64. — Chararas, 1959. Soc. Ent. de France, Bul. 64: 11. — Chararas, 1962. Encyc. Ent. 38: 450.

- Hedqvist, 1963. Stud. Forest. Suecica 11: 71. —Nuorteva, 1964. Ann. Ent. Fenn. 30: 14.
—Titova, 1966. Ent. Obozr. 45: 58.

Genus CHEIROPACHUS Westwood

Cheiopachus Westwood, 1828. Zool. Jour. 4: 23.

Type-species: *Diptolepis quadrum* Fabricius. Orig. d. sig.

Cheiopachys Haliday, 1833. Ent. Mag. 1: 268. Emend.

Pachychirus Agassiz, 1846. Nomencl. Zool., p. 777. N. name, unnecessarily proposed for

Cheiopachus, thought to be preoce.

Chiropachys Vollenhoven, 1871. Schetsen Hym., v. 3, pl. 10. Emend.

Tropidogastra Ashmead, 1904. Carnegie Mus., Mem. 1: 323.

Type-species: *Tropidogastra arizonensis* Ashmead. Orig. desig.

Revision: Gahan, 1938. Ent. Soc. Wash., Proc. 40: 219-220.

arizonensis (Ashmead). La., Tex., N. Mex., Idaho, Ariz., Wash., Oreg., Calif. Host: *Phloeosinus* sp.

Tropidogastra arizonensis Ashmead, 1904. Carnegie Mus., Mem. 1: 323. ♀.

Dinarmus arizonicus Girault, 1917 (1916). Insector Inscitiae Menstruus 4: 109. ♀.

Taxonomy: Gahan, 1938. Ent. Soc. Wash., Proc. 40: 220 (type of each sp. the same specimen).

brunneri Crawford. Mont., Wyo., Wash., Oreg., Calif. Host: *Phloeosinus* sp., *Pissodes* sp.,

Pseudohylesinus nebulosus (Lec.), *Scolytus unispinosus* Lec., *S. ventralis* Lec.

Cheiopachus brunneri Crawford, 1912. U. S. Natl. Mus., Proc. 43: 165. ♀, ♂.

Biology: Bushing and Bright, 1965. Canad. Ent. 97: 201.

obscuripes Brues. Ont., N. Y., s. to N. C., w. to Ill. Host: *Phloeotribus liminaris* (Harr.), *Scolytus* sp.

Cheiopachys obscuripes Brues, 1910. Wis. Nat. Hist. Soc., Bul. 8: 80. ♀.

quadrum (Fabricius). Que., Ont., N. H., s. to N. C. and Ala., w. to B. C., Wash., Oreg., Calif.;

Europe. Host: *Magdalis aeneus* Lec., *Phloeosinus canadensis* Swaine, *P. punctatus* Lec., *Scolytus multistriatus* (Marshall), *S. rugulosus* (Ratz.). For almost 100 years this sp. has been called *colon* Linnaeus, following Thomson, 1878 (Hym. Scand., v. 4, p. 33); however, Graham, 1969 (Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 417) saw Linnaeus's and Fabricius's types and established that *quadrum* Fabricius is the correct name for this species. *Sphex colon* Linnaeus belongs in *Dinotiscus* Ghesquiere.

Ichneumon quadrum Fabricius, 1787. Mantissa Insectorum, v. 1, p. 270.

Pteromalus binaculatus Swederus, 1795. Svenska Vetensk. Akad., Handl. 16: 222.

Cleonymus maculipennis Curtis, 1827. Brit. Ent., v. 4, fol. 194. ♂.

Pteromalus bicaliginosus Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 190. ♂.

Pteromalus binaevius Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 190. ♂.

Pteromalus Fraxini Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 191. ♀.

Pteromalus binimbatus Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 191. ♀.

Pteromalus binubeculatus Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 191. ♀.

Pachychirus intermedius Foerster, 1856. Hym. Stud., v. 2, p. 70.

Taxonomy: Kurdjumov, 1913. Ent. Obozr. 13: 22-23 (syn.). —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 416-417 (syn.).

Biology: Johnson, 1899. Ent. Soc. Wash., Proc. 4: 343. —Russo, 1938. R. Lab. Ent. Agr.

Portici, Bol. 2: 181-195. —Ferriere, 1948. Schweiz. Ent. Gesell., Mitt. 21: 522-523.

—Hedqvist, 1963. Stud. Forest. Suecica 11: 103-107. —Russo, 1963. R. Lab. Ent. Agr.

Portici, Bol. 21: 16-18. —Beaver, 1967. Soc. Brit. Ent., Trans. 17: 145.

Morphology: Snodgrass, 1941. Smithsn. Misc. Coll. 99: 36-37 (male genitalia).

Genus HABRITYS Thomson

Dimachus subg. *Habritys* Thomson, 1878. Hym. Scand., v. 5, pp. 50, 54.

Type-species: *Pteromalus brevicornis* Ratzeburg. Monotypic.

Habritys Ashmead, 1904. Carnegie Mus., Mem. 1: 276. Error.

Habrytis Nikol'skaya, 1952. Keys to Fauna USSR 44: 233. Error.

brevicornis (Ratzeburg). Md., Mich., Ind., Idaho, Calif.; Europe. Host: *Crabro* sp., *Crossocerus* sp., *Ectemnius* sp.

Pteromalus brevicornis Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 201.

Pteromalus (Schizonotus) Pannewitzii Ratzeburg, 1852. Ichn. d. Forstins., v. 3, p. 230. ♀.

Taxonomy: Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 427 (syn.).

Biology: Saunt, 1925. Ent. Monthly Mag. 61: 257-258 — Hallet, 1927. Cardiff Nat. Soc., Trans. 60: 54. — Callan, 1936. Soc. Brit. Ent., Jour. 1: 128. — Valkeila, 1959. Hyont. Aikak., Suom. 25: 180-181. — Askew, 1962. Entomologist 95: 126.

latro Wallace, Que., N. Y., Va., Mich., Wis. Host: *Ceratina dupla* Say, *Ectemnius stirpicola* (Pack.), *Euplilis* sp.

Habritys latrus Wallace, 1954. Carnegie Mus., Ann. 33: 199. ♀.

Habritys latro Krombein, 1960. Ent. News 71: 32. Emend.

Biology: Krombein, 1960. Ent. News 71: 32, 67. — Krombein, 1964. Biol. Soc. Wash., Proc. 77: 103.

Genus ACAENACIS Girault

Acaenacis Girault, 1917. New Chalcid Flies, p. 1a.

Type-species: *Semiotellus ficigeræ* Ashmead. Orig. desig.

lausus (Walker). Pa., Fla., Ark. Ecology: Emerges from galls of *Disholcaspis quercusvirens* (Ashmead) on twigs of live oak.

Pteromalus Lausus Walker, 1847. Ann. and Mag. Nat. Hist. (1) 19: 392. ♀.

Pteromalus Dipsas Walker, 1847. Ann. and Mag. Nat. Hist. (1) 19: 394. ♂.

Semiotellus ficigeræ Ashmead, 1885. Amer. Ent. Soc., Trans. 12: Proc. p. xvii. ♀, ♂.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32: 159 (syn.; lectotypes of *lausus* and *dipsas*).

Genus MEGATRYDYMUS Girault

Megatrydymus Girault, 1917. New Chalcid Flies, p. 1a.

Type-species: *Megatrydymus taciti* Girault. Orig. desig.

agrilis (Rohwer). Oreg., Calif. Host: *Agrilus angelicus* Horn.

Dinotus agrilis Rohwer, 1919. Ent. Soc. Wash., Proc. 21: 6. ♀.

Taxonomy: Burks, 1967. In Krombein and Burks, U.S. Dept. Agr., Agr. Monog. 2, Sup. 2, p. 269.

taciti Girault. N. J., Ark., Colo., Oreg., Calif. Ecology: Reared from cynipid galls on oak.

Megatrydymus taciti Girault, 1917. New Chalcid Flies, p. 1a. ♂.

Genus PERNIPHORA Ruschka

Perniphora Ruschka, 1923. Ent. Mitt. 12: 198.

Type-species: *Perniphora robusta* Ruschka. Monotypic.

americana Miller. N. B., Maine, N. H., N. Y., Mont., Wash. Ecology: Probably parasitic on species of *Trypodendron* developing in logs of birch and conifers.

Perniphora americana Miller, 1965. Canad. Ent. 97: 78. ♀, ♂.

Genus OXYSYCHUS Delucchi

Oxysychus Delucchi, 1956. Ztschr. f. Angew. Ent. 39: 240, 246.

Type-species: *Dinarmus silvestrii* Masi. Orig. desig.

acanthocini (Ashmead). Que., W. Va., Fla. Host: *Acanthocinus obsoletus* (Oliv.).

Metastenus (?) *acanthocini* Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 198. ♀, ♂.

Biology: Hopkins, 1893. W. Va. Agr. Expt. Sta., Bul. 32: 226. — Beaulne, 1953 (1951). Que. Soc. Prot. Pl., Ann. Rpt. 32-33: 197.

callidii (Ashmead). N. J., Va. Host: *Callidium antennatum* Newm.

Aetroxys callidii Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 223. ♀.

facialis (Provancher). Que., Ont., Pa.

Charitopus facialis Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 203. ♂.

Taxonomy: Burks, 1964 (1963). Canad. Ent. 95: 1256.

Genus ANISOPTEROMALUS Ruschka

Anisopteromalus Ruschka, 1912. Zool.-Bot. Gesell. Wien, Verh. 42: 243.

Type-species: *Anisopteromalus mollis* Ruschka. Monotypic.

Aplastomorpha Crawford, 1913. U. S. Natl. Mus., Proc. 45: 252.

Type-species: *Aplastomorpha pratti* Crawford. Monotypic.

calandrae (Howard). N. Y., s. to Fla., w. to Oreg., Calif.; Cosmopolitan. Host: *Ephestia elutella* (Hbn.); *Callosobruchus chinensis* (L.), *C. maculatus* (F.), *C. phaseoli* (Gyll.),

Caulophilus oryzae (Gyll.), *Lasioderma serricornue* (F.), *Sitophilus granarius* (L.), *S. oryzae* (L.), *S. zeamais* Mots., *Stator pruininus* (Horn), *Stegobium paniceum* (L.).

Pteromalus calandrae Howard, 1881. U. S. Dept. Agr., Ann. Rpt. for 1880, p. 273. ♂.

Meraporus Vandinei Tucker, 1910. Canad. Ent. 42: 342. ♀, ♂.

Anisopteromalus mollis Ruschka, 1912. Zool.-Bot. Gesell. Wien, Verh. 42: 243. ♀, ♂.

Aplastomorpha pratti Crawford, 1913. U. S. Natl. Mus., Proc. 45: 252. ♀, ♂.

Neocatolaccus mamezophagus Ishii and Nagasawa, 1942. Kontyu 16: 67. ♀, ♂.

Taxonomy: Gahan, 1923. Ent. Soc. Wash., Proc. 25: 188 (type of *calandrae* destroyed).

—Ferriere, 1939. Bul. Ent. Res. 30: 165-166 (possible syn.). —Tachikawa, 1966. Jap. Jour.

Appl. Ent. Zool. 10: 99 (syn.).

Biology: Runner, 1919. U. S. Dept. Agr., Bul. 737: 36. —Waterston, 1921. Roy. Soc., Rpt.

Grain Pests Com. 9: 10-21. —Cotton, 1923. Jour. Agr. Res. 23: 549-556. —Back and Cotton,

1938. U. S. Dept. Agr., Farmers' Bul. 1260: 41-42. —Back, 1939. Jour. Econ. Ent. 32: 747.

—Ayyar, 1940. Indian Jour. Ent. 2: 224. —Ayyar, 1941. Indian Acad. Sci., Proc. (B) 14:

443-444. —Bare, 1942. Jour. Econ. Ent. 35: 185. —Bare and Vinzant, 1942. U. S. Dept.

Agr., Cir. 635: 12. —Cotton, 1942. Amer. Miller 71: 60. —Whiting, 1947. Jour. Hered. 38:

150. —Chatterji, 1955. Zool. Soc. India, Proc. 8: 11-23. —Ghani and Sweetman, 1955.

Biology, Lahore 1: 115-139. —Beratliet, 1966. Prot. Pl., Bucharest 4: 253. —Gothilf, 1969.

Entomophaga 14: 199.

Morphology: Cabal Concha, 1956. Rev. Fac. Nac. Agron. Colombia 18: 61-72 (immature stages).

Genus DINARMUS Thomson

Dimachus subg. *Dinarmus* Thomson, 1878. Hym. Scand., v. 5, pp. 50, 56.

Type-species: *Dinarmus acutus* Thomson. Desig. by Ashmead, 1904.

Bruchobius Ashmead, 1904. Carnegie Mus., Mem. 1: 314, 315.

Type-species: *Bruchobius laticeps* Ashmead. Orig. desig.

Sphaerakis Masi, 1924. Genova, Mus. Civ. Stor. Nat., Ann. 51: 156.

Type-species: *Sphaerakis mayri* Masi. Monotypic.

Taxonomy: Delucchi, 1956. Ztschr. f. Angew. Ent. 39: 240. —Ferriere and Delucchi, 1957. Entomophaga 2: 121.

acutus (Thomson). N. J., Pa., N. C., Mich., Ky., Tenn., Minn., Nebr., Wash., Oreg.; Europe. Host: *Bruchidius ater* (Marsham), *Bruchus brachialis* Fahr.

Dimachus (*Dinarmus*) *acutus* Thomson, 1878. Hym. Scand., v. 5, p. 56. ♀.

Sphaerakis mayri Masi, 1924. Genova, Mus. Civ. Stor. Nat., Ann. 51: 157. ♀, ♂.

Taxonomy: Mani, 1939. Indian Jour. Ent. 1: 76. —Delucchi, 1956. Ztschr. f. Angew. Ent. 39: 243 (syn.). —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 434-435 (*Pteromalus robustus* Walker, 1847. Ann. and Mag. Nat. Hist. 19: 230, described from a single male, may be the same as *acutus*).

Biology: Delucchi, 1962. Awamia 2: 123.

Morphology: Domenichini, 1953. Bol. Zool. Agr. e di Bach. 19: 218 (gaster).

laticeps (Ashmead). D. C., s. to Fla., w. to Calif.; Cosmopolitan. Host: *Acanthoscelides obtectus* (Say), *Bruchus pisorum* (L.), *Callosobruchus maculatus* (F.).
Bruchobius laticeps Ashmead, 1904. Carnegie Mus., Mem. 1: xi, 313. ♀.

Taxonomy: Waterston, 1921. Roy. Soc., Rpt. Grain Pests Com. 9: 14-16. — Delucchi, 1956. Ztschr. f. Angew. Ent. 39: 243-246.

Biology: Paddock and Reinhard, 1919. Tex. Agr. Expt. Sta., Bul. 256: 80-81. — Masi, 1924. Genova, Mus. Civ. Stor. Nat., Ann. 51: 152. — Chatterji, 1954. Indian Jour. Ent. 16: 77. — Cheema and Misra, 1962. Current Sci. 31: 21. — Luca, 1964. Inst. Franc. d'Afr. Noire, Bul. (A) 26: 1201.

Genus NORBANUS Walker

Norbanus Walker, 1843. Soc. Ent. de France, Ann. (2) 1: 159.

Type-species: *Norbanus dysaules* Walker. Desig. by Ashmead, 1904.

Arthrolysis Foerster, 1856. Hym. Stud., v. 2, p. 52. No species.

Type-species: *Pteromalus scabriculus* Nees. Desig. by Ashmead, 1904.

Picroscyrtus Thomson, 1878. Hym. Scand., v. 5, pp. 50, 58.

Type-species: *Pteromalus scabriculus* Nees. Monotypic.

Stylophorella Ashmead, 1904. Carnegie Mus. Mem. 1: 275.

Type-species: *Stylophorella perplexa* Ashmead. Orig. desig.

dysaules Walker. Fla.

Norbanus dysaules Walker, 1843. Soc. Ent. de France, Ann. (2) 1: 158. ♀, ♂.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32: 157 (Lectotype designated).

perplexus (Ashmead). N. J., Del., Tenn., Kans., Tex.

Stylophorella perplexa Ashmead, 1904. Carnegie Mus., Mem. 1: 275. ♀.

Taxonomy: Gahan and Peck, 1946. Wash. Acad. Sci., Jour. 36: 316.

pisius Walker. Fla. Host: *Euscepes porcellus* Boh.

Norbanus pisius Walker, 1843. Soc. Ent. de France, Ann. (2) 1: 160. ♀.

Pteromalus Hybreas Walker, 1847. Ann. and Mag. Nat. Hist. (1) 19: 397. ♀.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32: 160 (syn.).

Genus HOMOPORUS Thomson

Merisus subg. *Homoporus* Thomson, 1878. Hym. Scand., v. 5, pp. 60, 64.

Type-species: *Pteromalus fulviventris* Walker. Desig. by Ashmead, 1904.

Phaenacra Foerster, 1878. Naturh. Ver. Rheinlande, Verh. 35: 51.

Type-species: *Phaenacra nubigera* Foerster. Monotypic.

Parapteromalus Ashmead, 1904. Carnegie Mus., Mem. 1: 320.

Type-species: *Parapteromalus isosomatis* Ashmead. Orig. desig.

Merisoporus Masi, 1926. Genova, Mus. Civ. Stor. Nat., Ann. 50: 226.

Type-species: *Pteromalus luniger* Nees. Orig. desig.

Pseudomerisus Erdos and Novicky, 1953. In Erdos, Acta Biol. Hung. 4: 236.

Type-species: *Pseudomerisus stipae* Erdos and Novicky, Orig. desig.

This genus corresponds to *Merisus* as used in all North American literature published after about 1900. Following the publication by Delucchi, 1956 (Ztschr. f. Angew. Ent. 39: 229-233) the genus *Merisus* Walker has been limited to Palearctic species, and all North American species are placed in *Homoporus* Thomson.

Taxonomy: Delucchi, 1957. Ztschr. f. Angew. Ent. 40: 418-419 (syn.). — Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 444-458 (syn.; key to British, and some other European, spp.; types).

atriscapus (Gahan), n. comb. N. Dak. Ecology: Reared from stems of *Stipa comata*.

Merisus atriscapus Gahan, 1927. U. S. Natl. Mus., Proc. 71 (4): 4. ♀, ♂.

chalcidiphagus (Walsh and Riley). Ont., N. Y., s. to S. C., w. to Oreg. and Calif.; Europe. Host:

Ditropinotus aureoviridis (Cwfd.), *Eurytoma parva* Phil., *Harmolita* sp., *H.*

- albomaculata* (Ashm.), *H. elymicola* P. and E., *H. grandis* (Riley), *H. hordei* (Harr.), *H. linearis* (Walk.), *H. secale* (Fitch), *H. tritici* (Fitch), *H. vaginicola* (Doane).
Pteromalus Nypsius Walker, 1839. Ann. and Mag. Nat. Hist. (1) 4: 274. ♀.
Semiotellus chalcidiphagus Walsh and Riley, 1869. Amer. Ent. 1: 152. ♀, ♂.
Homoporus crassinervis Thomson, 1878. Hym. Scand., v. 5, p. 68. ♀.
- Taxonomy:** Erdos, 1953. Acad. Sci. Hung., Acta Biol. 4: 239 (placed in *Phaenacra*).
 —Delucchi, 1957. Ztschr. f. Angew. Ent. 40: 417-418 (placed in *Homoporus*). —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 449 (types; *nypsius* Walker, 1839, has priority over *chalcidiphagus* Walsh and Riley, 1869, but the latter is well known and generally accepted).
- Biology:** Riley, 1887. U. S. Dept. Agr., Ann. Rpt. for 1886, pp. 540-542. —Webster, 1893. U. S. Dept. Agr., Insect Life 6: 151. —Webster, 1909. U. S. Dept. Agr., Bur. Ent. Cir. 106: 8-9. —Phillips, 1918. U. S. Dept. Agr., Farmers' Bul. 1006: 11, 13. —Phillips and Poos, 1921. Jour. Agr. Res. 21: 405-406. —Phillips and Poos, 1923. U. S. Dept. Agr., Farmers' Bul. 1323: 8. —Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 104-109. —Cannon, 1963. Canad. Ent. 95: 34.
- cognatus** (Gahan), n. comb. Calif. Host: *Mayetiola destructor* (Say).
Merisus cognatus Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 102. ♀.
- destructor** (Say). P. E. I., Que., Ont., Vt., N. Y., s. to S. C., w. to Wash., Oreg., Calif.; Europe.
 Host: *Mayetiola destructor* (Say); *Platygaster zosine* Walk.
Ceraphron destructor Say, 1817. Acad. Nat. Sci. Phila., Jour. (1) 1: 47-48, 63.
Merisus intermedius Lindeman, 1887. Soc. Imp. Nat. Moscuv., Bul. (2) 1: 179-183, 192. ♀, ♂.
- Taxonomy:** Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 89-95 (syn.). —Szelenyi, 1956. Mus. Nat. Hung., Ann. Hist. Nat. (n. s.) 7: 171-172. (*Homoporus*). —Delucchi, 1957. Ztschr. f. Angew. Ent. 40: 418-419 (*Homoporus* subg. *Phaenacra*).
- Biology:** Fitch, 1862 (1861). N. Y. State Agr. Soc., Trans. 21: 827-829, 843. —Howard, 1884. Psyche 4: 206. —Forbes, 1885. Ill. State Ent., Rpt. 14: 44-49. —Riley, 1885. U. S. Natl. Mus., Proc. 8: 413-416. —Osborn, 1898. U. S. Dept. Agr., Div. Ent., Bul. (n. s.) 16: 28-31. —Washburn, 1902. Minn. Agr. Expt. Sta., Bul. 77: 6-7. —Packard, 1916. Jour. Agr. Res. 6: 373-377. —McCulloch, 1923. Kans. Agr. Expt. Sta., Tech. Bul. 11: 64. —Hill and Smith, 1928. Jour. Agr. Res. 36: 153-155. —Hill *et al.*, 1939. U. S. Dept. Agr., Tech. Bul. 689: 4-15. —Lapina, 1948. Zool. Zhur. 27: 331. —Hill, 1953. U. S. Dept. Agr., Cir. 923: 2-15.
- Morphology:** Hill and Pinckney, 1940. U. S. Dept. Agr., Tech. Bul. 715: 8, 13 (immature stages).
- febriculosus** (Girault). P. E. I., Que., Vt., s. to S. C., w. to Sask., N. Dak., Nebr., Kans., Okla.; Europe. Host: *Mayetiola destructor* (Say); *Bracon cephi* (Gah.), *Eupelmus allynii* (French), *Harmolita* sp., *H. albomaculata* (Ashm.), *H. grandis* (Riley), *H. hordei* (Harr.), *H. tritici* (Fitch), *H. vaginicola* (Doane), *Platygaster zosine* Walk.
Merisus febriculosus Girault, 1917. Descr. Stellarum Nov., p. 17. ♀.
Homoporus filicornis Erdos, 1953. Mus. Nat. Hung., Ann. Hist. Nat., (n. s.) 6: 241. ♀.
- Taxonomy:** Gahan, 1921 (1920). Ent. Soc. Wash., Proc. 22: 238-239. (*febriculosus* misdet. as *isosomatis* Ashm.). —Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 95-99 (descr., bibliog.; occurs in Europe). —Szelenyi, 1956. Mus. Nat. Hung., Ann. Hist. Nat. (n. s.) 7: 168 (*Homoporus*). —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 453 (some doubts of syn. of *febriculosus* and *filicornis*).
- Biology:** Phillips and Poos, 1923. U. S. Dept. Agr., Farmers' Bul. 1323: 8. —Hill and Smith, 1928. Jour. Agr. Res. 36: 153-154. —Hill *et al.*, 1939. U. S. Dept. Agr., Tech. Bul. 689: 4-7, 11-15. —Cannon, 1963. Canad. Ent. 95: 34.
- Morphology:** Hill and Pinckney, 1940. U. S. Dept. Agr., Tech. Bul. 715: 8-13 (larvae).
- flaviventris** (Girault), n. comb. Md.
Merisus flaviventris Girault, 1915. Ent. Soc. Amer., Ann. 8: 282. ♀.
- harmolitae** (Gahan), n. comb. Calif.
Merisus harmolitae Gahan, 1928. U. S. Natl. Mus., Proc. 71 (4): 2. ♀, ♂.

isosomatis (Ashmead), n. comb. Ind., Ill. Host: *Harmolita* sp.

Parapteromalus isosomatis Ashmead, 1904. Carnegie Mus., Mem. 1: 320, 384. ♀.

Merisus carinatus Girault, 1916. Soc. Ent. 31: 57. ♀, ♂.

Taxonomy: Gahan and Peck, 1946. Wash. Acad. Sci., Jour. 36: 316 (syn.).

Biology: Webster, 1903 (1902). Ind. Acad. Sci., Proc. for 1902, p. 103 (Nomen nudum).

mordellistenae (Crawford), n. comb. Pa., Md., D. C., Va., w. to Kans., Tex., Calif. Host:

Mordellistena pustulata (Melsh.); *Mayetiola destructor* (Say); *Harmolita* sp.

Merisus mordellistenae Crawford, 1910. Ent. Soc. Wash., Proc. 12: 145. ♀.

Taxonomy: Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 99-102.

Morphology: Hill and Pinckney, 1940. U. S. Dept. Agr., Tech. Bul. 715: 9, 11-13 (larvae).

octoguttatus (Girault), n. comb. Md.

Merisus octoguttata Girault, 1915. N. Y. Ent. Soc., Jour. 23: 166. ♀.

semilongifasciatus (Girault), n. comb. Md.

Merisus semilongifasciata Girault, 1915. Ent. Soc. Amer., Ann. 8: 282. ♀.

texensis (Girault), n. comb. Tex.

Merisus texensis Girault, 1917. Descr. Stellarum Nov., p. 17. ♀.

Genus CALLITULA Spinola

Callitula Spinola, 1811. Paris Mus. d'Hist. Nat., Ann. 17: 151.

Type-species: *Callitula bicolor* Spinola. Monotypic.

Micromelus Walker, 1833. Ent. Mag. 1: 371, 464.

Type-species: *Micromelus rufomaculatus* Walker. Desig. by Westwood, 1840.

Baeotomus Foerster, 1856. Hym. Stud., v. 2, p. 145. N. name, unnecessarily proposed for

Micromelus, thought to be preocc. in Botany.

Taxonomy: Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 111-113. —Szelenyi, 1956.

Mus. Nat. Hung., Ann. Hist. Nat. (n. s.) 7: 167-170.

bicolor Spinola. N. Y., s. to Va., w. to N. Dak. and Kans.; Europe. Host: *Mayetiola destructor* (Say), *Meromyza americana* Fitch, *Oscinella frit* (L.); *Platygaster zosine* Walk.

Callitula bicolor Spinola, 1811. Paris Mus. d'Hist., Nat. Ann. 17: 151.

Micromelus rufo-maculatus Walker, 1833. Ent. Mag. 1: 465. ♀, ♂.

Pteromalus plagiatus Nees, 1834. Hym. Ichn. Aff. Monog., v. 2, p. 115. ♀.

Taxonomy: Nees, 1834. Hym. Ichn. Aff. Monog., v. 2, p. 115 (syn.). —Gahan, 1934 (1933). U. S.

Dept. Agr., Misc. Pub. 174: 109-114 (syn.). —Boucef, 1964. Entomophaga 9: 10. —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 461 (types).

Biology: Hill and Smith, 1928. Jour. Agr. Res. 36: 153-155. —Hill *et al.*, 1939. U. S. Dept. Agr., Tech. Bul. 689: 13. —Lapina, 1948. Zool. Zhur. 27: 331. —Simmonds, 1952. Bul. Ent. Res. 43: 513, 528-533, 539-540. —Simmonds, 1953. Bul. Ent. Res. 44: 386-393. —Hemer,

1959. Ztschr. f. Angew. Ent. 44: 339.

Morphology: Hill and Pinckney, 1940. U. S. Dept. Agr., Tech. Bul. 715: 5, 11-13 (larvae).

cyrnus (Walker). Md., s. to Fla., w. to Ill. Host: *Mayetiola destructor* (Say).

Lampretatus cyrnus Walker, 1843. Soc. Ent. de France, Ann. (2) 1: 157.

Cryptorhynchus illinoensis Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 228. ♀.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32: 155 (syn.).

Genus PSILOCERA Walker

Psilocera Walker, 1833. Ent. Mag. 1: 371, 373.

Type-species: *Psilocera obscura* Walker. Monotypic.

Metopon Walker, 1834. Ent. Mag. 2: 302.

Type-species: *Metopon atrum* Walker. Monotypic.

Eupsilocera Westwood, 1839. Introd. Mod. Class. Ins., v. 2, Synopsis, p. 69. N. name, unnecessarily proposed for *Psilocera*.

Metopum Agassiz, 1846. Nomencl. Zool., p. 670. Emend.

Dichalys Foerster, 1856. Hym. Stud., v. 2, pp. 52, 56. N. name, unnecessarily proposed for *Psilocera*.

Psilocera was twice renamed by authors who thought the name was preoccupied by *Psilocerus* Ruthe, 1831. Graham, 1969 (Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 463) is not sure the North American species referred to *Psilocera* really belong to it.

californica (Ashmead). Ga., Kans., Calif.

Metapon(!) *californicum* Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 229. ♀, ♂.

rufipes (Ashmead). N. H., N. J., D. C., Ga., Fla., S. Dak., Kans. Host: *Chlamisus plicatus* (F.).

Metapon(!) *rufipes* Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 229. ♀, ♂.

Genus CATOLACCUS Thomson

Pteromalus subg. *Catolaccus* Thomson, 1878. Hym. Scand., v. 5, pp. 146, 152.

Type-species: *Catolaccus cavigena* Thomson. Monotypic.

Merisoides Masi, 1911. Lab. Zool. Gen. e Agr. Portici, Bol. 5: 141.

Type-species: *Merisoides crassiceps* Masi. Monotypic.

The European species *cavigena* Thomson and *crassiceps* Masi are generally accepted to be synonyms of *ater* Ratzeburg. Graham, 1969 (Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 467) is not, however, entirely satisfied that this is true.

Revision: Crawford, 1908 (1907). Ent. Soc. Wash., Proc. 9: 160. —Burks, 1954. U. S. Dept. Agr., Tech. Bul. 1093: 4-8.

Taxonomy: Delucchi, 1956. Ztschr. f. Angew. Ent. 39: 230 (syn.).

aeneoviridis (Girault). Que., Ont., Mass., s. to Fla., w. to B. C. and Calif.; Mexico, West Indies.

Ecology: An obligate secondary parasite. Host: *Apanteles* sp., *A. aristoteliae* Vier., *A.*

congregatus (Say), *A. flaviconchae* Riley, *A. marginiventris* (Cress.), *A. medicaginis*

Mues., *A. militaris* (Walsh), *Bathyplectes* sp., *B. curculionis* (Thoms.), *Campoletis*

argentifrons (Cress.), *Casimaria limeritidis* (How.), *Goniozus platynotae* Ashm.,

Hormius basalis (Prov.), *Hyposoter pilosulus* (Prov.), *Macrocentrus* sp., *Meteorus* sp.,

M. acronyctae Mues., *Rogas laphygmae* Vier.

Arthrolytus aeneoviridis Girault, 1911. Canad. Ent. 43: 351, 372. ♀, ♂.

Dibrachys meteori Gahan, 1913. U. S. Natl. Mus., Proc. 46: 436. ♀, ♂.

Taxonomy: Girault, 1920. U. S. Natl. Mus., Proc. 58: 212.

Biology: Vickery, 1929. U. S. Dept. Agr., Tech. Bul. 138: 21, 32-35, 38, 53-54. —Atkins *et al.*, 1957. Ent. Soc. Amer., Ann. 50: 257. —Allen and Smith, 1958. Hilgardia 25: 29.

cyaenoides Burks. Maine, Mass., Ohio, Mich., Ill., Minn., Iowa, Nebr., Wyo. Host: *Apanteles* sp., *Hyposoter* sp., *H. fugitivus* (Say).

Catolaccus cyaenoides Burks, 1954. U. S. Dept. Agr., Tech. Bul. 1093: 7. ♀, ♂.

fragariae Rohwer. Del., Ga., Tenn. Host: *Anthonomus signatus* Say, *Apion decoloratum* Smith.

Catolaccus fragariae Rohwer, 1934. Ent. Soc. Wash., Proc. 36: 44. ♀, ♂.

Biology: Bissell, 1938. Jour. Econ. Ent. 31: 536.

grandis (Burks), n. comb. Tex., Ariz.; Mexico, Cent. Amer. Introduced into Texas and Arizona from Mexico, but may not be established. Host: *Anthonomus grandis* Boh.

Heterolaccus grandis Burks, 1954. U. S. Dept. Agr., Tech. Bul. 1093: 9. ♀, ♂.

Taxonomy: Delucchi, 1958. Bol. Zool. Agr. e di Bach. (2) 1: 53-54 (Nearctic spp. placed in *Heterolaccus* belong elsewhere).

Biology: Cross and Mitchell, 1969. Ent. Soc. Amer., Ann. 62: 235-236.

hunteri Crawford. Del., Va., N. C., S. C., Ga., Ala., Miss., Ark., Tex., Ariz., Calif.; Mexico, Guatemala, Hawaii. Host: *Acanthoscelides bisignatus* (Horn.), *A. compressicornis* (Schaeff.), *Anthonomus aeneolus* Dietz, *A. albopilosus* Dietz, *A. disjunctus* Lec., *A. eugenii* Cano, *A. grandis* Boh., *A. heterothecae* Pierce, *A. nebulosus* Lec., *A. nigrinus* Boh., *A. squamosus* Lec., *A. thurberiae* Pierce, *Gerstaeckeria nobilis* (Lec.), *Prionomerus calceatus* Say, *Rynchaenus pallicornis* (Say), *Smicraulax tuberculatus*

Pierce, *Tachypterellus quadrigibbus* (Say), *Zygobaris xanthoxyli* Pierce. Introduced from Guatemala into Hawaii for control of *Anthonomus eugenii* Cano.

Catolaccus hunteri Crawford, 1908 (1907). Ent. Soc. Wash., Proc. 9: 160. ♀, ♂.

Biology: Pierce *et al.*, 1912. U. S. Dept. Agr., Bur. Ent. Bul. 100: 42, 51, 54-66. —Pierce and Cushman, 1915. Ent. Soc. Wash., Proc. 17: 166.

kansensis (Girault). N. C., S. C., Wis., Ill., Miss., Iowa, La., Kans., Idaho, Ariz., Calif. Host: *Chrysopa* sp.

Habrocytus kansensis Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ., V, p. 3. ♀.

Arthrolytus kansensis Girault, 1920. U. S. Natl. Mus., Proc. 58: 211. ♀. Redescription, based on same specimens as *Habrocytus kansensis*; both a synonym and homonym.

victoria Burks. Tex., Idaho, Utah, Ariz., Calif. Host: *Apanteles* sp.

Catolaccus victoria Burks, 1954. U. S. Dept. Agr., Tech. Bul. 1093: 6. ♀, ♂.

Genus ENDOMYCHOBIOUS Ashmead

Endomychobius Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 227.

Type-species: *Endomychobius flavipes* Ashmead. Orig. desig.

flavipes Ashmead. D. C. Host: *Endomychus biguttatus* Say.

Endomychobius flavipes Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 227. ♀, ♂.

Taxonomy: Girault, 1920. U. S. Natl. Mus., Proc. 58: 212.

Genus PSYCHOPHAGUS Mayr

Pteromalus subg. *Diglochis* Thomson, 1878. Hym. Scand., v. 5, pp. 147, 156. Preocc. by Foerster, 1856.

Type-species: *Pteromalus omnivorus* Walker. Monotypic.

Psychophagus Mayr, 1904. Zool.-Bot. Gesell. Wien, Verh. 54: 598. N. name.

omnivorus (Walker). Que., Ont., s. to Del., w. to Wis. and Colo.; Europe. Ecology: Both a primary and secondary parasite. A common European species, introduced and first recovered in Massachusetts in 1894. Host: *Achatodes zeae* (Harr.), *Archippus packardianus* (Fern.), *Catocala* sp., *Choristoneura fumiferana* (Clem.), *Cnidocampa flavescens* (Walk.), *Datana ministra* (Drury), *Diacrisia virginica* (F.), *Estigmene acrea* (Drury), *Grapholitha molesta* (Busck), *G. packardi* (Zell.), *Ichthyura inclusa* Hbn., *Macronoctua onusta* Grote, *Malacosoma americanum* (F.), *M. dissstria* Hbn., *Nygmia phaeorrhoea* (Donov.), *Orgyia leucostigma* (Smith), *Platysamia cecropia* (L.), *Porthetria dispar* (L.), *Stilpnotia salicis* (L.), *Utetheisa bella* (L.), *Vanessa atalanta* (L.); *Compsilura concinnata* (Meig.); *Cephalcia marginata* Middk., *Gilpinia hercyniae* (Htg.), *Itopectis conquisitor* (Say), *Macrocentrus peroneae* Mues., *Neodiprion* sp., *N. lecontei* (Fitch), *Pristiphora geniculata* (Htg.).

Pteromalus omnivorus Walker, 1835. Ent. Mag. 3: 204. ♀, ♂.

Pteromalus Processionae Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 194. ♀.

Pteromalus rotundatus Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 194, footnote. Preocc. by Fonscolombe, 1832.

Pteromalus Antorides Walker, 1845. Linn. Soc. London, Proc., Zool. 1: 262. ♂.

Pteromalus Coeruleocephalae Ratzeburg, 1852. Ichn. d. Forstins., v. 3, p. 237.

Pteromalus chrysorrhoeae Dalla Torre, 1898. Cat. Hym., v. 5, p. 117. N. name for *rotundatus* Ratzeburg.

Taxonomy: Kurdjumov, 1913. Ent. Obozr. 13: 16 (syn.). —Bakkendorf, 1955. Ent. Meddel. 27: 137-143. —Boucek, 1961. Mus. Natl. Pragae, Acta Ent. 34: 83-84 (syn.). —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 473-474 (syn.; *Ichneumon cyniphidis* Linnaeus, 1758 (Syst. Nat., ed. 10, v. 1, p. 567) might be the same as *omnivorus*).

Biology: Kirkland, 1902. U. S. Dept. Agr., Div. Ent. Bul. (n. s.) 31: 95. —Fiske, 1903. N. H. Agr. Expt. Sta., Tech. Bul. 6: 182, 188, 217. —Proper, 1934. Jour. Agr. Res. 48: 370-371. —Schaffner and Griswold, 1934. U. S. Dept. Agr., Misc. Pub. 188: 36, 153. —Raizenne, 1952. Canada Div. Forest Biol., Lep. South. Ont. and Par. pp. 95, 100. —Boucek and

Sedivy, 1954. *Folia Zool. et Ent.* (3) 17: 176. — Keen, 1958. U. S. Dept. Agr., Tech. Bul. 1169: 25, 100. — Bogavac, 1958. *Zash. Bilja* 46: 80. — Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 89. — Blais, 1960. *Canad. Ent.* 92: 388. — Capek, 1963. *Banska Stiavnica Hosp. Ved. Prace*, no. 4, p. 267. — Forbes and Daviault, 1964. *Canad. Ent.* 96: 1128. — Postans, 1964. *Ent. Rec. and Jour. Var.* 76: 166.

Morphology: Finlayson, 1963. *Canad. Ent.* 95: 499, 501-502 (immature stages).

tortricis (Brues). Que., Ont., Maine, N. H., Mass., N. Y., Wis., Minn., Wyo. Host: *Choristoneura conflictana* (Walk.), *C. fumiferana* (Clem.), *C. pinus* Freem.; *Apechthis ontario* (Cress.), *Itopectis conquisitor* (Say).

Nasonia tortricis Brues, 1910. *Canad. Ent.* 42: 259. ♀, ♂.

Taxonomy: Gahan, 1932. *Ent. Soc. Amer.*, Ann. 25: 738 (tr. to genus *Amblymerus*). — Peck, 1951. In *Muesebeck et al.*, U. S. Dept. Agr., Agr. Monog. 2: 557 (tr. to genus *Psychophagus*). — Peck, 1963. *Canad. Ent. Sup.* 30: 698 (lectotype).

Biology: Dowden *et al.*, 1948. *Jour. Econ. Ent.* 41: 459, 461. — Daviault, 1950. *Que. Soc. Prot. Pl.*, Ann. Rpt. 31: 41. — Dowden and Carolin, 1950. *Jour. Econ. Ent.* 43: 779. — McGugan and Blais, 1959. *Canad. Ent.* 91: 766, 770-776, 779. — Dixon and Benjamin, 1963. *Jour. Econ. Ent.* 56: 267.

Genus CAPELLIA Delucchi

Capellia Delucchi, 1958. *Bol. Zool. Agr. e di Bach.* (2) 1: 59.

Type-species: *Eurydinota rufiventris* Girault. Orig. desig.

Hylocomus Graham, 1959. *Soc. Brit. Ent.*, Trans. 13: 107.

Type-species: *Metopon (Dirhicnus) magnicornis* Thomson. Orig. desig.

Taxonomy: Delucchi, 1958. *Bol. Zool. Agr. e di Bach.* (2) 1: 57-60. — Boucek, 1965. *Mus. Natl. Pragae, Acta Ent.* 36: 550 (syn.).

cyrene (Walker). Fla.

Micromelus cyrene Walker, 1843. *Soc. Ent. de France*, Ann. 2: 154. ♀.

Taxonomy: Burks, 1975. *Brit. Mus. (Nat. Hist.) Ent.*, Bul. 32: 155.

rufiventris (Girault). Ga., Miss., Minn., Calif. Ecology: Parasitizes midge larvae developing in pine resin. Host: *Retinodiplosis* sp.

Eurydinota rufiventris Girault, 1920. U. S. Natl. Mus., Proc. 58: 212. ♀.

Genus SCEPTROTHELYS Graham

Sceptrothelys Graham, 1956. *Ent. Monthly Mag.* 92: 89.

Type-species: *Pteromalus grandiclavus* Walker. Orig. desig.

deione (Walker). Maine, s. to N. C., w. to B. C., Wash., Oreg., Calif.; Europe. Host: *Coleophora fuscadinella* Zell., *C. laricella* (Hbn.), *C. malivorella* Riley, *C. pruniella* Clem., *C. sacramento* Hein.

Miscogaster Deione Walker, 1839. *Monog. Chalcid.*, v. 1, p. 199. ♀.

Pteromalus Charops Walker, 1839. *Monog. Chalcid.*, v. 1, p. 242. ♂.

Pteromalus Aecus Walker, 1848. *List Hym. Brit. Mus.*, Chalcid., pt. 2, p. 211. ♀.

Metopon punctatum Thomson, 1878. *Hym. Scand.*, v. 4, p. 169. ♀.

Metopon aeneiscapus Thomson, 1878. *Hym. Scand.*, v. 4, p. 169. ♀.

Eurydinota lividicarpus Girault, 1917. *Brooklyn Ent. Soc.*, Bul. 12: 86. ♀, ♂.

Taxonomy: Graham, 1969. *Brit. Mus. (Nat. Hist.) Ent.*, Bul. Sup. 16: 485 (syn.).

Biology: Anon., 1934. *Wis. Agr. Expt. Sta.*, Bul. 428: 101. — Doner, 1936. *Ent. Soc. Amer.*, Ann. 29: 227-231. — Beacher, 1947. *Ent. Soc. Amer.*, Ann. 40: 532-544. — Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 88.

grandiclavus (Walker). Ind., Nebr., Wyo., Colo.; Europe. Introduced from Europe along with its host, but when or how is unknown. Host: *Bathyplectes* sp.

Pteromalus grandiclavus Walker, 1835. *Ent. Mag.* 3: 193. ♀.

Pteromalus claviger Foerster, 1841. *Beitr. Monog. Pteromalinen*, p. 24. ♀.

Taxonomy: Graham, 1969. *Brit. Mus. (Nat. Hist.) Ent.*, Bul. Sup. 16: 486 (syn.).

intermedia Graham. W. Va., Tenn., Wyo., Colo.; Europe. Introduced from Europe along with its host, but how or when is unknown. Host: *Bathyplectes* sp.
Ceptrothelys intermedia Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 486. ♀, ♂.

Genus PTEROMALUS Swederus

Pteromalus Swederus, 1795. Svenska Vetensk. Akad., Handl. 16: 201.

Type-species: *Ichneumon puparum* Linnaeus. Desig. by Westwood, 1840.

Many authors believe that this genus and *Habrocytus* Thomson are essentially inseparable.

cassotis Walker. Maine, s. to Fla., w. to Mich., Tex., and Calif. Host: *Chlosyne lacinia* Geyer, *Danaus plexippus* (L.), *Limenitis archippus* (Cramer), *L. arthemis astyanax* (F.), *Papilio cresphontes* Cramer, *P. polyzenes asterius* Stoll.

Pteromalus Cassotis Walker, 1847. Ann. and Mag. Nat. Hist. (1) 19: 393. ♀.

Pteromalus archippi Howard, 1889. In Scudder, Butterflies of Eastern U. S. and Canada, pp. 1872, 1891. ♀.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32: 154 (lectotype; syn.).

Biology: Scudder, 1889. Butterflies of Eastern U. S. and Canada, p. 747. —Schaffner and Griswold, 1934. U. S. Dept. Agr., Misc. Pub. 188: 6, 153. —Drummond *et al.*, 1970. Lep. Soc. Jour. 24: 140.

coeruleiventris (Ashmead). Mass., N. Y., D. C., Ill., Kans. Host: *Orgyia leucostigma* (Smith).

Sphlegister coeruleiventris Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App. p. VI. ♀.

Pteromalus cuproideus Howard, 1897. U. S. Dept. Agr., Div. Ent., Tech. Ser. 5: 28, 55. ♀, ♂.

Biology: Girault, 1908. Psyche 15: 89-96.

doryssus Walker. Fla.

Pteromalus Doryssus Walker, 1847. Ann. and Mag. Nat. Hist. (1) 19: 395. ♀, ♂. Types lost.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32: 157.

eryx Walker. Fla.

Pteromalus Eryx Walker, 1847. Ann. and Mag. Nat. Hist. (1) 19: 397. ♂. Type fragmentary.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32: 158.

euryi Gahan. Tenn., Kans., Utah, Ariz., Calif. Host: *Colias eurytheme* Bdv.

Pteromalus euryi Gahan, 1914. U. S. Natl. Mus., Proc. 46: 435. ♀, ♂.

Biology: Wildermuth, 1914. U. S. Dept. Agr., Bul. 124: 21-23. —Wildermuth, 1920. U. S. Dept. Agr., Farmers' Bul. 1094: 9.

euthymus Walker. Fla. Type lost.

Pteromalus Euthymus Walker, 1847. Ann. and Mag. Nat. Hist. (1) 19: 393. ♂.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32: 158.

fuscipes (Provancher). Que.

Semiotellus fuscipes Provancher, 1881. Nat. Canad. 12: 295. ♀.

Taxonomy: Burks, 1964 (1963). Canad. Ent. 95: 1262 (may be the same as *Pteromalus vanessae* Howard, but poor condition of Provancher's type prevents a certain decision).

hemileuca Gahan. N. Mex.; Mexico. Host: *Hemileuca oliviae* Ckll.

Pteromalus hemileuca Gahan, 1917. U. S. Natl. Mus., Proc. 53: 210. ♀.

puparum (Linnaeus). Newfoundland, Que. and Ont., s. to Fla., w. to B. C. and Calif.;

Cosmopolitan. Accidentally introduced from Europe about a century ago. Host: *Agraulis vanillae* (L.), *Colias philodice* (Godart), *Cynthia cardui* (L.), *C. carye* (Hbn.), *Epargyreus tityrus* (F.), *Eurema lisa* (Bdv. and LeC.), *Argyrotaenia velutinana* (Walk.), *Lambdina fiscellaria* (Guenee), *Limenitis archippus* (Cramer), *Malacosoma americanum* (F.), *Nymphalis antiopa* (L.), *Papilio polyzenes asterius* Stoll, *Pieris protodice* (Bdv. and LeC.), *P. rapae* (L.), *Polygonia satyrus* (Edw.), *Thyridopteryx*

ephemeraeformis (Haw.), *Vanessa atalanta* (L.), *V. virginicensis* (Drury). Other hosts reported in the world literature.

Ichneumon puparum Linnaeus, 1758. Syst. Nat., ed. 10, v. 1, p. 567.

Pteromalus latifrons Walker, 1835. Ent. Mag. 2: 501. ♀.

Pteromalus cephalotes Walker, 1836. Ent. Mag. 3: 481. ♀.

Pteromalus comes Walker, 1836. Ent. Mag. 3: 492. ♀.

Pteromalus Ornytus Walker, 1839. Monog. Chalcid., v. 1, p. 238. ♂.

Pteromalus Brassicae Curtis, 1842. Roy. Agr. Soc., Jour. 3: 311. ♀.

Pteromalus Pontiae Curtis, 1842. Roy. Agr. Soc., Jour. 3: 312. ♂.

Pteromalus Orinus Walker, 1845. Linn. Soc. London, Proc., Zool. 1: 263. ♀.

Pteromalus nigricans Walker, 1872. Notes on Chalcid., p. 121. ♀. Preocc. by Foerster, 1841.

Pteromalus brassicae Packard, 1877. In Hayden, U. S. Geol. and Geog. Survey, Rpt. 9: 747. ♀. Preocc. by Curtis, 1842.

Pteromalus pieridis Provancher, 1881. Nat. Canad. 12: 296. ♀, ♂.

Pteromalus nigrutilus Dalla Torre, 1898. Cat. Hym., v. 5, p. 137. N. name for *nigricans* Walker.

Taxonomy: Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 489 (syn.).

Biology: Packard, 1877. In Hayden, U. S. Geol. and Geog. Survey, Rpt. 9: 748-749.

—Saunders, 1878. Canad. Ent. 10: 185. —Saunders, 1880. Canad. Ent. 12: 193. —Webster, 1889. Ind. Agr. Expt. Sta., Bul. 25: 13. —Chittenden, 1901. U. S. Dept. Agr., Div. Ent. Bul. (n. s.) 30: 70. —Fiske, 1903. N. H. Agr. Expt. Sta., Tech. Bul. 6: 223-224. —Matheson, 1907.

Canad. Ent. 39: 205. —Doten, 1911. Nebr. Agr. Expt. Sta., Bul. 78: 20-24. —Wilson, 1919.

Wis. Agr. Expt. Sta., Res. Bul. 45: 22-23. —Twinn, 1924. Ent. Soc. Ont., Ann. Rpt. 54: 86.

—Parker and Thompson, 1925. Ent. Soc. Amer., Ann. 18: 386. —Faure, 1926. Contrib.

Etude Pieride du Chou, pp. 63-72. —Essig, 1931. Hist. of Ent., pp. 331-333, 390.

—Schaffner and Griswold, 1934. U. S. Dept. Agr., Misc. Pub. 188: 153. —Green Shields,

1939. Amer. Nat. 73: 89-91 (genetics). —Richards, 1940. Jour. Anim. Ecol. 9: 282-285.

—Whiting, 1940. Amer. Nat. 74: 377-379 (genetics). —Kurir, 1946. Zentbl. Gesam. Forst.

and Holzwirtschaft. 70: 81-86. —Clausen, 1951. Jour. Econ. Ent. 44: 6. —Clausen, 1956. U. S.

Dept. Agr., Tech. Bul. 1139: 49. —Blunck, 1957. Jour. Econ. Ent. 50: 836. —Wiltshire, 1958.

Roy. Ent. Soc. London, Trans. 110: 241. —Masslenikova, 1958. Ent. Obozr. 37: 542.

—Blunck and Wilbert, 1959 (1957). Internatl. Cong. Crop Prot., Proc. 1: 1017. —Ho, 1962.

Ent. Sinica, Acta 11: 47. —Kaitazoff, 1963. Sofia. Rast. Zashch. 11: 22. —Bouletreau and

David, 1967. Entomophaga 12: 1-4.

Morphology: Parker, 1924. Soc. Ent. de France, Ann. 93: 267, 291, 309 (larva). —Burks, 1938.

Ent. Soc. Amer., Ann. 31: 161 (wing venation). —Snodgrass, 1941. Smithsn. Misc. Coll. 99

(14): 36-37 (male genitalia). —Flanders, 1942. Ent. Soc. Amer., Ann. 35: 254 (female

genitalia). —Domenichini, 1953. Bol. Zool. Agr. e di Bach. 19: 248 (gaster).

vanessae Howard. Maine, s. to Fla., w. to Mont. and Calif. Host: *Ascia monuste* (L.),

Malacosoma disstria Hbn., *Nymphalis antiopa* (L.), *Papilio cressphontes* Cramer, *P.*

palamedes (Dru.), *P. polyxenes asterius* Stoll, *P. thaos* L., *Polygonia comma* (Harr.), *P.*

interrogationis (F.), *Vanessa atalanta* (L.).

Pteromalus puparum var. *vanessae* Howard, 1889. In Scudder, Butterflies of Eastern U. S. and Canada, pp. 1872, 1890, 1891. ♀.

Biology: Schaffner and Griswold, 1934. U. S. Dept. Agr., Misc. Pub. 188: 154.

venustus Walker. Ont., S. Dak., Alta., Idaho, Utah; Europe. Accidentally introduced, certainly before 1965. Host: *Megachile relativa* Cress., *M. rotundata* (F.).

Pteromalus venustus Walker, 1835. Ent. Mag. 2: 494. ♀.

Pteromalus planiscuta Thomson, 1878. Hym. Scand., v. 4, p. 155. ♀, ♂.

Taxonomy: Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 491 (syn.). —Peck, 1969. Canad. Ent. 101: 418-422 (separation of various par. of *Megachile rotundata*).

Biology: Hobbs, 1968. Canad. Ent. 100: 781-784. —Peck, 1969. Canad. Ent. 101: 420-421.

—Hobbs and Kronic, 1971. Canad. Ent. 103: 674-685.

Genus **HABROCYTUS** Thomson

Colas Curtis, 1827. Brit. Ent., v. 4, fol. 166.

Type-species: *Colas dispar* Curtis. Orig. desig.

Colaz Curtis, 1829. Guide to Brit. Ins., p. 6. Emend. Preocc. by Huebner, 1816.

Gnatho Curtis, 1829. Guide to Brit. Ins., p. 118. N. name.

Metopachia Westwood, 1839. Introd. Mod. Class. Ins., v. 2, Synopsis, p. 71.

Type-species: *Colas dispar* Curtis. Orig. desig.

Etroxys subg. *Habrocytus* Thomson, 1878. Hym. Scand., v. 5, pp. 88, 109.

Type-species: *Pteromalus albipennis* Walker. Desig. by Ashmead, 1904.

Metopopachia Dalla Torre, 1898. Cat. Hym., v. 5, p. 159. Emend.

The status of this genus is anything but clear. Many authors consider it and *Pteromalus* Swederus to intergrade. In addition there is the problem of the name *Colas* Curtis, its isogenotypic synonym *Metopachia* Westwood, and the emended or new names *Gnatho* Curtis, *Colaz* Curtis, and *Metopopachia* Dalla Torre. All of these are based on the distinctive European species *dispar*. All but *Metopopachia* have priority over *Habrocytus* Thomson. Graham, 1969 (Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 495) does not think it advisable to use the name *Colas* for this genus because of the widespread usage of the name *Habrocytus*. There is also a great possibility that the species-group *dispar* will eventually be recognized as a distinct genus, in which case the name *Colas* will be available for it. In the meantime, priority is not recognized. Disregard of priority occurs elsewhere in the Chalcidoidea.

Revision: Girault, 1917. Canad. Ent. 49: 178-181. —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 494-561 (British and some European with a few N. Amer. spp.).

acutiventris Peck. Que.

Pteromalus acutus Provancher, 1881. Nat. Canad. 12: 297. ♀. Preocc. by Fonscolombe, 1832.

Pteromalus canadensis Dalla Torre, 1898. Cat. Hym., v. 5, p. 115. N. name. Preocc. by Ashmead, 1887.

Habrocytus acutiventris Peck, 1951. In Muesebeck, et. al., U. S. Dept. Agr., Agr. Monog. 2: 561. N. name.

Taxonomy: Burks, 1964 (1963). Canad. Ent. 95: 1260.

americus Girault. N. Amer.

Habrocytus americanus Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. V, p. 3. ♀.

analis (Ashmead). Nev., Calif. Host: *Hylaeus varifrons* (Cress.), *Omalus* sp., *Pemphredon grinnelli* (Roh.).

Aetroxys analis Ashmead, 1895. In Davidson, Psyche 7: 316. ♀, ♂.

Biology: Parker and Bohart, 1966. Pan-Pacific Ent. 42: 94.

anthonomi (Ashmead). Ont., Conn., N. J., D. C., Va., N. C., Ky., Wis., Tex., N. Mex. Host:

Anthonomus musculus Say, *A. nigrinus* Boh., *A. signatus* Say.

Catolaccus anthonomi Ashmead, 1893. In Chittenden, U. S. Dept. Agr., Insect Life 5: 185. ♀, ♂.

arkansensis Girault. Ill., Minn., Mo., Ark.

Habrocytus arkansensis Girault, 1917. Canad. Ent. 49: 180, 182. ♀, ♂.

aulacis Girault. Conn., Pa., Md., Ohio, Mich. Ecology: Emerges from stem gall of *Aulacidea* sp. on wild lettuce.

Habrocytus aulacis Girault, 1917. Canad. Ent. 49: 180, 181. ♀.

bedeguaris (Thomson). Maine, Ont., Colo., Idaho, B. C.; Europe. Host: *Diplolepis rosae* (L.).

Etroxys (*Habrocytus*) *Bedeguaris* Thomson, 1878. Hym. Scand., v. 5, p. 123. ♀, ♂.

Taxonomy: Callan, 1944. Roy. Ent. Soc. London, Proc. (B) 13: 90.

Biology: Voukassovitch, 1931. C. R. Soc. Biol. 106: 698. —Blair, 1945. Roy. Ent. Soc. London, Proc. (A) 20: 26. —Judd, 1959. Canad. Ent. 91: 728-730. —Gijswijt, 1962. Ent. Ber. 22: 250.

borrowi Girault. Conn., Nebr., Colo., Idaho, Wash., Calif.

Habrocytus borrowi Girault, 1917. Canad. Ent. 49: 178, 179, 182. ♀.

- Biology: Caltagirone, 1964. Ent. Soc. Amer., Ann. 57: 287.
britannicus Girault. B. C.
Habrocytus britannicus(!) Girault, 1926. Insector Inscitiae Menstruus 14: 132. ♀.
canadensis (Ashmead). N. H., Ont., N. J. Ecology: Emerges from gall of *Xanthoterus quercusforticornis* (Walsh).
Megastigma(!) *canadensis* Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 186. ♂.
 Taxonomy: Crosby, 1913. Ent. Soc. Amer., Ann. 6: 168 (male pteromalid).
cerealellae (Ashmead). N. B. and Que., s. to Fla., w. to Alaska and Calif.; Cosmopolitan. Host: *Sitotroga cerealella* (Oliv.).
Catolaccus cerealellae Ashmead, 1902. Psyche 9: 345. ♀, ♂.
 Taxonomy: Crawford, 1908 (1907). Ent. Soc. Wash., Proc. 9: 160.
 Biology: Noble, 1932. Calif. Univ. Pubs., Ent. 5: 311-354. — Fulton, 1933. Ent. Soc. Amer., Ann. 26: 536-553. — Fulton, 1937. In Galtsoff, Culture Methods for Invertebrate Animals, pp. 497-498.
coloradensis (Ashmead). Colo., Idaho.
Rhopalicus coloradensis Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 27, 45. ♀.
damo (Walker). Fla.
Pteromalus Damo Walker, 1847. Ann. and Mag. Nat. Hist. (1) 19: 395. ♀.
 Taxonomy: Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 561. — Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32: 156.
epicles (Walker). Fla.
Pteromalus Epicles Walker, 1847. Ann. and Mag. Nat. Hist. (1) 19: 394. ♀.
 Taxonomy: Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 561. — Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32: 157.
franciscanus Girault. Calif.
Habrocytus franciscanus Girault, 1917. Canad. Ent. 49: 180, 181. ♀.
languriae Ashmead. Conn., N. J., N. Y., Pa., Del., D. C., Va., Ill., Mo., La., Kans., Ariz., Alaska, Calif. Host: *Dirabius rectirostris* (Lec.), *Languria angustata* (Beauv.), *L. mozdari* (Latr.); *Janus integer* (Nort.).
Habrocytus languriae Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 220. ♀, ♂.
 Taxonomy: Gahan, 1919. U. S. Natl. Mus., Proc. 55: 127.
 Biology: Wildermuth and Gates, 1920. U. S. Dept. Agr., Bul. 889: 19.
lividus Gahan. Colo. Host: *Tachypterellus consors cerasi* List.
Habrocytus lividus Gahan, 1931. Wash. Acad. Sci., Jour. 21: 37. ♀, ♂.
 Biology: List, 1932. Colo. Agr. Expt. Sta., Bul. 385: 63.
medicaginis Gahan. Ont., Conn., N. Y., s. to Va., w. to Man., Oreg. and Calif.; Hawaii, Europe, Asia, Africa, Australia. Host: *Bruchophagus* sp.
Habrocytus medicaginis Gahan, 1914. U. S. Natl. Mus., Proc. 48: 163. ♀.
 Biology: Urbahns, 1916. Jour. Agr. Res. 7: 147-153. — Williamson, 1918. Minn. State Ent., Ann. Rpt. 17:106-109. — Urbahns, 1920. U. S. Dept. Agr., Bul. 812: 18. — Sorenson, 1930. Utah Agr. Expt. Sta., Bul. 218: 27-32. — Nikol'skaya, 1934. Cent. Asia Sci. Res. Cotton Inst., Bul. 4-5: 128-129. — Sorenson, 1934. Utah Acad. Sci., Arts and Letters, Proc. 11: 244. — Beardsley, 1956. Hawaii. Ent. Soc., Proc. 16: 11. — Butler and Hansen, 1958. Pan-Pacific Ent. 34: 228. — Neunzig and Gyrisco, 1959. Jour. Econ. Ent. 52: 899. — Carillo and Dickason, 1963. Oreg. Agr. Expt. Sta., Tech. Bul. 68: 31.
melanicrus (Provancher). Que.
Semiotellus melanicrus Provancher, 1881. Nat. Canad. 12: 294. ♀, ♂.
 Taxonomy: Burks, 1964 (1963). Canad. Ent. 95: 1262.
obscuripes Ashmead. Minn., Colo., Idaho. Ecology: Emerges from galls of *Diptolepis* on rose.
Habrocytus obscuripes Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 26, 45. ♀.
 Taxonomy: Girault, 1917. Canad. Ent. 49: 182.

- onerati** (Fitch). Ont., N. Y., N. J. Ecology: Emerges from twig galls on oak.
Pteromalus onerati Fitch, 1859 (1858). N. Y. State Agr. Soc., Trans. 18: 812. ♀, ♂.
- phycidis** Ashmead. N. B., Ont., s. to Del., and Pa., w. to B. C. and Calif. Host: *Acrobasis juglandis* (Le B.), *A. rubrifasciella* (Pack.), *Archippus packardianus* (Fern.), *Choristoneura fumiferana* (Clem.), *Coleophora laricella* (Hbn.), *C. malivorella* Riley, *C. pruniella* Clem., *Dioryctria reniculella* (Grote), *Exoteleia pinifoliella* Chamb., *Rhycacionia frustrana* (Comst.), *Spilonota ocellana* (D. and S.).
Habrocytus phycidis Ashmead, 1898. Ent. Soc. Wash., Proc. 4: 157. ♀.
Habrocytus dux Girault, 1917. Canad. Ent. 49: 181, 182. ♀.
- Taxonomy:** Gahan, 1930. U. S. Natl. Mus., Proc. 77 (8): 8 (syn.).
- Biology:** Muesebeck and Dohanian, 1927. U. S. Dept. Agr., Bul. 1487: 27 (*dux*). — Doner, 1936. Ent. Soc. Amer., Ann. 29: 226, 231. — Beacher, 1947. Ent. Soc. Amer., Ann. 532-544. — Raizenne, 1952. Canada Div. Forest Biol., Forest Lep. South. Ont. and Par., p. 259. — Legner, 1962. Ent. Soc. Amer., No. Cent. Br., Proc. 17: 116. — Dixon and Benjamin, 1963. Jour. Econ. Ent. 56: 267. — Legner and Oatman, 1963. Jour. Econ. Ent. 56: 731. — Cody *et al.*, 1967. Mich. Ent. 1: 163. — Finlayson, 1967. Canad. Ent. 99: 1263 (immature stages).
- piercei** Crawford. Conn., N. Y., N. J., Md., W. Va., Ohio, Wis., La., N. Dak., Tex., Colo., Calif. Host: *Anthonomus grandis* Boh., *A. musculus* Say, *A. nebulosus* Lec., *Microlarinus lareynii* (duVal), *M. lypriformis* (Wall.), *Tachypterellus consors cerasi* List, *T. quadrigibbus* (Say); *Coleophora malivorella* Riley.
Habrocytus piercei Crawford, 1911. U. S. Natl. Mus., Proc. 40: 443. ♀.
- Biology:** Pierce *et al.*, 1912. U. S. Dept. Agr., Bur. Ent. Bul. 100: 52-63. — List, 1932. Colo. Agr. Expt. Sta., Bul. 385: 59-61. — Hammer, 1936. N. Y. Agr. Expt. Sta., Tech. Bul. 240: 45. — Gould and Geissler, 1940. Jour. Econ. Ent. 33: 815. — Wilson, 1965. Canad. Ent. 97: 968. — Goeden and Ricker, 1970. Jour. Econ. Ent. 63: 827-831.
- purpureiventris** (Ashmead). Minn., Nebr., Kans., Okla., Tex. Ecology: Parasitic on a tephritid maggot in the seeds of iron weed.
Syntasis(!) *purpureiventris* Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App., P. VI. ♀, ♂.
- quinquefasciatus** Girault. N. Mex.
Habrocytus quinquefasciatus Girault, 1916. Ent. Soc. Amer., Ann. 9: 298. ♀, ♂.
- Taxonomy:** Girault, 1917. Deser. Hym. Chalcidoid. Variorum cum Observ. V, p. 5.
- rhodobaeni** Ashmead. Va., Kans. Host: *Rhodobaenus tredecimpunctatus* (Illiger).
Habrocytus rhodobaeni Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 220. ♀.
- rosae** Girault. Conn., N. Y., Nebr., Mont., Alta., Colo., B. C., Calif. Ecology: Emerges from galls of *Diplolepis fusiformans* (Ashm.) and *D. ignota* (O. S.).
Habrocytus rhodobaeni(!) var. *rosae* Girault, 1917. Canad. Ent. 49: 180, 181. ♀.
- simillimus** Gahan. Ariz. Host: *Melanagromyza gibsoni* (Mall.).
Habrocytus simillimus Gahan, 1919. U. S. Natl. Mus., Proc. 55: 127. ♀, ♂.
- thyridopterigis** Howard. Maine and Ont., s. to N. C., w. to Wis., Mo., Ark. Host: *Acrobasis rubrifasciella* (Pack.), *Coleophora fuscadinella* Zell., *C. laricella* (Hbn.) *C. malivorella* Riley, *C. pruniella* Clem., *C. ulmifoliella* McD., *Coleotechnites apicitripunctella* (Clem.), *Malacosoma americanum* (F.), *Orygia leucostigma* (Smith), *Rhycacionia buoltiana* (Schiff.), *R. frustrana* (Comst.), *R. rigidana* (Fern.), *Thyridopteryx ephemeriformis* (Haw.).
Habrocytus thyridopterigis Howard, 1897. U. S. Dept. Agr., Div. Ent., Tech. Ser. 5: 34. ♀.
- Biology:** Cushman, 1927. Jour. Agr. Res. 34: 617. — Doner, 1936. Ent. Soc. Amer., Ann. 29: 230-234. — Balduf, 1937. Ent. Soc. Wash., Proc. 39: 179-180. — Raizenne, 1952. Canada Div. Forest Biol., Forest Lep. South. Ont. and Par., p. 170. — Waddell, 1952. Ent. Soc. Brit. Columbia, Proc. 48: 88. — Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 89. — Harman and Kulman, 1962. Jour. Econ. Ent. 55: 1007. — Kulman, 1965. Jour. Econ. Ent. 58: 68, 864.

Genus LONCHETRON Graham

Lonchetreron Graham, 1956. Ann. Ent. Fenn. 22: 80.

Type-species: *Lonchetron fennicum* Graham. Orig. desig.

giraulti (Peck). Ont.

Habrocytus canadensis Girault, 1917. Canad. Ent. 49: 179, 181, 182. ♀. Preocc. by Ashmead, 1887.

Habrocytus giraulti Peck, 1951. In Muesebeck, et al., U. S. Dept. Agr., Agr. Monog. 2: 562. N. name.

Genus BELONURA Ashmead

Belonura Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 224.

Type-species: *Belonura singularis* Ashmead. Orig. desig.

singularis Ashmead. Maine, Mass., Conn., Va., Ga., Fla., La. Host: *Cirrula gigantea* Cress., *Dimecoenia spinosa* (Loew).

Belonura singularis Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 225. ♀.

Genus CAENACIS Foerster

Caenacis Foerster, 1856. Hym. Stud., v. 2, p. 64. No species.

Type-species: *Caenacis grandiclava* Thomson. Desig. by Ashmead, 1904.

asinus Girault. Calif.

Caenacis asinus Girault, 1917. New Chalcid Flies, p. 3. ♀.

cupraeus (Provancher). Que., Ont. Host: *Megachile albitarsis* Cress., *M.*, *centruncularis* (L.).

Semiotellus cupraeus Provancher, 1881. Nat. Canad. 12: 295. ♂.

Semiotellus cupreus Dalla Torre, 1898. Cat. Hym., v. 5, p. 211. Emend.

Taxonomy: Burks, 1964 (1963). Canad. Ent. 95: 1261.

Genus PSILONOTUS Walker

Psilonotus Walker, 1834. Ent. Mag. 2: 168, 179.

Type-species: *Psilonotus adamas* Walker. Monotypic.

Janvartsovia Nikol'skaya 1954. Zool. Inst. Leningrad, Trudy 16: 412.

Type-species: *Janvartsovia betulae* Nikolskaja. Orig. desig.

Taxonomy: Graham, 1958. Ent. Monthly Mag. 94: 120 (syn.).

achaeus Walker. Ont.; Europe. Ecology: Associated with *Betula*.

Psilonotus Achaeus Walker, 1848. Ent. Mag. 2: 105, 161. ♀.

Pteromalus Cyamon Walker, 1848. Ent. Mag. 2: 123, 176. ♂.

Psilonotus viridulus Thomson, 1878. Hym. Scand., v. 5, p. 83. ♀.

Taxonomy: Graham, 1957. Ent. Monthly Mag. 93: 231 (syn.). —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. sup. 16: 627 (types).

Genus KARPINSKIELLA Boucek

Karpinskiella Boucek, 1955 (1954). Roczniki Nauk Lesnych 11: 86.

Type-species: *Karpinskiella pityophthori* Boucek. Orig. desig.

The adults of these parasites emerge from adult scolytid hosts.

Taxonomy: Hedqvist, 1963. Stud. Forest. Suecica 11: 115.

paratomicobia Hagen and Caltagirone. Utah, Ariz., Calif. Host: *Dendroctonus pseudotsugae* Hopk.

Karpinskiella paratomicobia Hagen and Caltagirone, 1968. Pan-Pacific Ent. 44: 241. ♀, ♂.

Biology: Furniss, 1968. Ent. Soc. Amer., Ann. 61: 1384 (life hist.).

Genus MESOPOLOBUS Westwood

Mesopolobus Westwood, 1833. London, Edinb. and Dublin Phil. Mag. and Jour. Sci. (3) 2: 443.

Type-species: *Mesopolobus fasciiventris* Westwood. Monotypic.

Platymesopus Westwood, 1833. London, Edinb. and Dublin Phil. Mag. and Jour. Sci. (3) 2: 444.

Type-species: *Platymesopus tibialis* Westwood. Monotypic.

Platyterma Walker, 1834. Ent. Mag. 2: 303.

Type-species: *Platyterma nobile* Walker. Desig. by Westwood, 1839.

Amblymerus Walker, 1834. Ent. Mag. 2: 303, 306.

Type-species: *Amblymerus amoenus* Walker. Desig. by Westwood, 1839.

Eutelus Walker, 1834. Ent. mag. 2: 351, 356.

Type-species: *Eutelus dilectus* Walker. Desig. by Westwood, 1839.

Xenocrepis Foerster, 1856. Hym. Stud., v. 2, p. 64. No species.

Type-species: *Xenocrepis pura* Mayr. Included by Mayr, 1904.

Asemantus Foerster, 1878. Naturh. Ver. Rheinlande, Verh. 35: 51.

Type-species: *Asemantus amphibolus* Foerster. Orig. desig.

Syntomocera Foerster, 1878. Naturh. Ver. Rheinlande, Verh. 35: 52. Preocc. by Schiner, 1861.

Type-species: *Syntomocera clavicornis* Foerster. Orig. desig.

Disema Foerster, 1878. Naturh. Ver. Rheinlande, Verh. 35 54. Preocc. by Maeklin, 1875.

Type-species: *Disema pallipes* Foerster. Orig. desig.

Eutelus subg. *Platytermus* Thomson, 1878. Hym. Scand., v. 5, p. 75. Emend.

Zacalochlora Crawford, 1913. U. S. Natl. Mus., Proc. 45: 251.

Type-species: *Zacalochlora milleri* Crawford. Monotypic.

Baeoponerus Masi, 1924. Genova, Mus. Civ. Stor. Nat., Ann. 50: 222.

Type-species: *Baeoponerus aeneus* Masi. Monotypic.

Euamblymerus Hincks, 1944. Roy. Ent. Soc. London, Proc. (B) 13: 37. N. name for part of *Amblymerus*.

Syntomocerella Ghesquiere, 1946. Rev. de Zool. et de Bot. Africaines 34: 369. N. name for *Syntomocera* Foerster.

Disemisca Ghesquiere, 1946. Rev. de Zool. et de Bot. Africaines 34: 369. N. name for *Disema* Foerster.

Ahlbergiella von Rosen, 1955. Ent. Tidskr. 76: 88.

Type-species: *Eutelus aequus* Walker. Orig. desig.

As presently defined, this genus is a rather amorphous one, with no non-integrating characters and an extremely lengthy generic synonymy. It is likely that future workers will divide it into subgenera or into several genera, for all of which there will be available names.

Taxonomy: Graham, 1957. Ent. Monthly Mag. 93: 220-230 (syn.). — von Rosen, 1958. Opusc.

Ent. 23: 203-240. — von Rosen, 1959. Ent. Tidskr. 79: 131-146. — von Rosen, 1959. Ent.

Tidskr. 80: 146-162. — von Rosen, 1960. Opusc. Ent. 25: 1-29 — von Rosen, 1960. Ent.

Tidskr. 82: 1-48. — von Rosen, 1961. Ent. Meddel. 31: 116-122. — von Rosen, 1962. K.

Lantbr. Hogs., Ann. 28: 141-148. — Hedqvist, 1963. Stud. Forest. Suecica 11: 57, 121.

— von Rosen, 1966. Ent. Tidskr. 87: 78-84. — Graham, 1969. Brit. Mus. (Nat. Hist.) Ent.,

Bul. Sup. 16: 638-639 (syn.). — Boucek, 1971. Polskie Pismo Ent. 41: 310 (syn.).

aequus (Walker). Nebr.; Europe. Ecology: Essentially a predator, developing in grass, alfalfa, and other plant stems, feeding on eggs or larvae of other insects. Host: *Delphacodes pellucida* (F.). Also other, undetermined hosts.

Eutelus aequus Walker, 1834. Ent. Mag. 2: 364. ♀.

Pteromalus purpureus Walker, 1835. Ent. Mag. 2: 493. ♀.

Pteromalus contractus Walker, 1835. Ent. Mag. 3: 188. ♀.

Pteromalus Leogoras Walker, 1839. Monog. Chalcid., v. 1, p. 269. ♂.

Pteromalus Odites Walker, 1845. Linn. Soc. London, Proc. (Zool.) 1: 261. ♀.

Pteromalus Temesa Walker, 1848. List Hym. Brit. Mus., Chalcid., v. 2, pp. 124, 188 ♂.

Metastenus purus Walker, 1872. Notes on Chalcid., p. 118. ♀.

Eutelus (*Platytermus*) *decipiens* Thomson, 1878. Hym. Scand., v. 5, p. 77. ♀.

Mormoniella oviphaga Ahlberg, 1925. Centralanst. for Forsoksv. pa Jordbruksomradet. Meddel. (Ent.) 46: 82.

Amblymerus graminum Hardh, 1950. Suom-hyont. Aikak. 16: 88. ♀. Male a different species.

Taxonomy: Graham, 1957. Ent. Monthly Mag. 93: 222-236 (syn.; types). — von Rosen, 1955.

Ent. Tidskr. 76: 88-90 (syn.). — Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 655 (syn.).

- Biology: von Rosen, 1956. K. Lantbr. Hogs., Ann. 23: 20-39. — Raatikainen, 1962. Ann. Agr. Fenn. 1: 220.
- betulae** (Girault), n. comb. N. Y. Host: *Oligotrophus betulae* (Winnertz).
Eutelus betulae Girault, 1917. Psyche 24: 93. ♀, ♂.
- Taxonomy: Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 628 (this sp. may be some European *Psiionotus*).
- bruchophagi** (Gahan), N. Y., w. to B. C., Wash., Oreg., Calif.; Europe. Host: *Bruchophagus* sp.
Eutelus bruchophagi Gahan, 1917. U. S. Natl. Mus., Proc. 53: 212. ♀, ♂.
- Taxonomy: von Rosen, 1958. Opusc. Ent. 23: 207, 232. — von Rosen, 1960. Opusc. Ent. 25: 12.
- Biology: Urbahns, 1919. Jour. Agr. Res. 16: 171-172. — Sorenson, 1930. Utah Agr. Expt. Sta., Bul. 218: 27-32. — Sorenson, 1934. Utah Acad. Sci. Arts and Letters, Proc. 11: 243-244.
 — Butler and Hansen, 1958. Pan-Pacific Ent. 34: 228. — Neunzig and Gyrisco, 1959. Jour. Econ. Ent. 52: 899-901. — Carillo and Dickason, 1963. Oreg. State Univ. Agr. Expt. Sta., Tech. Bul. 68: 25.
- confusus** (Ashmead), n. comb. Mont., Idaho, Utah, Alaska. Ecology: Secondary parasite of scolytid beetles. Host: *Karpinskiella paratomicobia* H. and C., *Tomicobia tibialis* Ashm. Might be the same as the European *Mesopolobus typographi* (Ruschka), 1924.
Eutelus confusus Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 145. ♀, ♂.
- Biology: Furniss, 1968. Ent. Soc. Amer., Ann. 61: 1385.
- fuscipedes** Burks, n. name. Mich.
Platyerma fuscipes Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 223. ♀. Preocc. by Walker, 1834.
- justicia** (Girault), n. comb. N. Mex., Calif. Host: *Diarthronomyia chrysanthemi* Ahlberg.
Amblymerus justicia Girault, 1917. Descr. Stellarum Nov., p. 21. ♀, ♂.
- Taxonomy: von Rosen, 1961. Ent. Tidskr. 82: 43.
- mayetiola** (Gahan), Wash., Oreg., Calif. Host: *Ceutorhynchus assimilis* (Payk.); *Mayetiola destructor* (Say); *Harmolita* sp.
Eutelus mayetiola Gahan, 1919. U. S. Natl. Mus., Proc. 55: 128. ♀, ♂.
- Taxonomy: von Rosen, 1958. Opusc. Ent. 23: 207, 228.
- Biology: Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 65-67. — Carlson *et al.*, 1952 (1951). Jour. Econ. Ent. 44: 963-964.
- milleri** (Crawford), Colo., N. Mex., Mont., Idaho, Oreg., Calif. Host: *Barbara colfaxiana* (Kearf.), *Choristoneura fumiferana* (Clem.), *Orgyia pseudotsugata* McD., *Laspeyresia* sp.
Zacalochlora milleri Crawford, 1913. U. S. Natl. Mus., Proc. 45: 251. ♀.
- Taxonomy: Boucek, 1971. Polskie Pismo Ent. 41: 310.
- Biology: Keen, 1958. U. S. Dept. Agr., Tech. Bul. 1169: 100-102.
- morys** (Walker), Idaho, Wash., Oreg., Calif.; Europe. Host: *Ceutorhynchus assimilis* (Payk.).
Pteromalus morys Walker, 1848. List Hym. Brit. Mus., Chalcid., v. 2, p. 125, 197. ♂.
Disema pallipes Foerster, 1878. Naturh. Ver. Rheinlande, Verh. 35: 54. ♂.
Xenocrepis pura Mayr, 1904. Zool.-Bot. Gesell. Wien, Verh. 54: 584. ♂.
- Taxonomy: Graham, 1957. Ent. Monthly Mag. 93: 235 (syn.; types). — von Rosen, 1960. Ent. Tidskr. 82: 32-33 (syn.). — von Rosen, 1960. Opusc. Ent. 25: 9.
- Biology: McLeod, 1953. Ent. Soc. Brit. Columbia, Proc. 49: 13-17. — Walz, 1957. Ent. Soc. Amer., Ann. 50: 220. — von Rosen, 1958. Opusc. Ent. 23: 234. — Jourdeuil, 1960. Ann. des Epiphyt. 11: 462.
- nobilis** (Walker), Minn., S. Dak., Wyo., Colo.; Europe. Ecology: Phytophagous in grass seeds.
 Host: *Avena* sp., *Bromus* sp.
Platyerma nobile Walker, 1834. Ent. Mag. 2: 304. ♀.
Platyerma citripes Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 223. ♀.
- Taxonomy: Graham, 1957. Ent. Monthly Mag. 93: 221 (types). — von Rosen, 1959. Ent. Tidskr. 80: 160 (syn.).

- Biology: von Rosen, 1962. K. Lantbr. Kogsk., Ann. 28: 144 (phytophagous).
oeax (Walker). Fla.
Pteromalus Oeax Walker, 1847. Ann. and Mag. Nat. Hist. (1) 19: 395. ♀.
 Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32: 160.
ruskini (Girault), n. comb. Colo.
Eutelus ruskini Girault, 1917 (1916). Insector Inscitiae Menstruus 4: 113. ♀.
salicis (Girault), n. comb. Mass. Ecology: Emerges from cecidomyiid gall on *Salix*.
Eutelus salicis Girault, 1917. Psyche 24: 94. ♀.
subfumatus (Ratzeburg). Ont., Que.? Introduced into southeastern Canada from Europe in the 1930's for biological control of *Diprion* spp.; not known to be established. Host: *Diprion* sp., *Gilpinia hercyniae* (Htg.).
Pteromalus subfumatus Ratzeburg, 1852. Ichn. d. Forstins., v. 3, pp. 236-237. ♀.
Eutelus punctiger Thomson, 1878. Hym. Scand., v. 5, p. 75. ♀.
Platytarma ecksteini Wolff, 1916. Ztschr. f. Angew. Ent. 3: 166-169. ♀, ♂.
 Taxonomy: Nowicki, 1939. Ztschr. f. Angew. Ent. 25: 473 (syn.). —Otten, 1942. Arb. ueber. Physiol. u. Angew. Ent. 9: 114-117. —von Rosen, 1958. Opusc. Ent. 23: 223-224. —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 768 (syn.; types).
 Biology: Morris *et al.*, 1937. Bul. Ent. Res. 28: 381-391. —Gauss, 1960. Ztschr. f. Angew. Ent. 47: 50. —von Rosen, 1961. Ent. Tidskr. 82: 36.
verditer (Norton). N. B., Que., Ont., Maine, s. to N. J. and Pa., w. to B. C., Wash., Oreg. Host: *Archippus packardianus* (Fern.), *Barbara colfaxiana* (Kearf.), *Choristoneura fumiferana* (Clem.), *C. pinus* Freem., *Dioryctria disclusa* Hein., *Epinotia nanana* (Treit.), *Epizeuxis aemula* (Hbn.), *Taniva albolineana* (Kearf.); *Actia interrupta* Curr.; *Diprion similis* (Htg.), *Gilpinia hercyniae* (Htg.), *Itopectis conquisitor* (Say), *Macrocentrus peroneae* Mues., *Neodiprion abietis* (Harr.), *N. lecontei* (Fitch), *N. tsugae* Midd., *Phytodietus fumiferanae* Roh., *P. vulgaris* Cress.
Pteromalus verditer Norton, 1869. Amer. Ent. Soc., Trans. 2: 327. ♀, ♂.
 Taxonomy: Gahan, 1932. Ent. Soc. Amer., Ann. 25: 738 (types). —Gahan, 1938. Ent. Soc. Wash., Proc. 40: 222. —von Rosen, 1958. Opusc. Ent. 23: 223-225 (*Mesopolobus*).
 Biology: Britton, 1918. Conn. Agr. Expt. Sta., Bul. 203: 283-284, 287-288. —Gahan, 1932. Ent. Soc. Amer., Ann. 25: 738. —Dowden *et al.*, 1948. Jour. Econ. Ent. 41: 459, 461. —Dowden and Carolin, 1950. Jour. Econ. Ent. 43: 779. —Raizenne, 1952. Canada Div. Forest Biol., Forest Lep. South. Ont. and Par., p. 221. —Benjamin and Drooz, 1954. Jour. Econ. Ent. 47: 589. —Keen, 1958. U. S. Dept. Agr., Tech. Bul. 1169: 98-99. —Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 88. —Blais, 1960. Canad. Ent. 92: 388. —Kulman and Hodson, 1961. Jour. Econ. Ent. 54: 222. —Dixon and Benjamin, 1963. Jour. Econ. Ent. 56: 267. —Paradis and Leroux, 1965. Ent. Soc. Canada, Mem. 43: 58.
 Morphology: Finlayson, 1960. Canad. Ent. 92: 934-939 (immature stages). —Finlayson, 1963. Canad. Ent. 95: 500 (immature stages).

Genus MERAPORUS Walker

- Meraporus* Walker, 1834. Ent. Mag. 2: 298.
 Type-species: *Meraporus graminicola* Walker. Desig. by Westwood, 1839.
Parmicromelus Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. V, p. 4.
 Type-species: *Parmicromelus europaeus* Girault. Orig. desig.
 Taxonomy: Waterston, 1921. Roy. Soc., Rpt. Grain Pests Com. 9: 11. —Graham, 1957. Ent. Monthly Mag. 93: 217.
requisitus Tucker. S. C., La. Host: *Sitophilus oryza* (L.).
Meraporus requisitus Tucker, 1910. Canad. Ent. 42: 344. ♂.
 Taxonomy: Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 681 (*requisitus* unlikely to be a true *Meraporus*).

Genus PSEUDOCATOLACCUS Masi

Pseudocatolaccus Masi, 1908. Lab. Zool. Gen. e Agr. Portici, Bol. 3: 138.

Type-species: *Pseudocatolaccus asphondyliae* Masi. Monotypic.

Taxonomy: Burks, 1954. U. S. Dept. Agr., Tech. Bul. 1093: 14-15.

americanus Gahan. Tex., N. Mex. Idaho, Utah, Ariz. Ecology: Develops in galls on alfalfa,

Bidens, *Larrea*, possibly other plants. Host: *Asphondylia* sp., *A. websteri* Felt.

Pseudocatolaccus Americanus Gahan, 1919. Ent. Soc. Amer., Ann. 12: 164. ♀, ♂.

Taxonomy: Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 695 (might be the same as the European *asphondyliae* Masi).

Genus PERIDESMIA Foerster

Peridesmia Foerster, 1856. Hym. Stud., v. 2, p. 65. No species.

Type-species: *Isocyrtus (Trichomalus) aquisgranensis* Mayr. Desig. by Gahan, 1923.

Taxonomy: Delucchi, 1956 (1955). Ztschr. f. Angew. Ent. 38: 147-150.

discus (Walker). Ga.; Europe. Ecology: Larva consumes eggs of *Hypera* inside alfalfa stems.

Introduced from Europe into Calif. and Atlantic Coast states; known to be established only in Ga. Host: *Hypera postica* (Gyll.).

Pteromalus discus Walker, 1835. Ent. Mag. 2: 482. ♀.

Pteromalus subquadratus Walker, 1836. Ent. Mag. 3: 478. "♀" = ♂.

Pteromalus Phyllus Walker, 1839. Monog. Chalcid., v. 1, p. 272. ♀.

Peridesmia phytonomi Gahan, 1923. Wash. Acad. Sci., Jour. 13: 410. ♀, ♂.

Taxonomy: Graham, 1956. Ent. Monthly Mag. 92: 246 (syn.). —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 701-702.

Biology: Chamberlin, 1924. Jour. Econ. Ent. 17: 625. —Flanders, 1935. Ent. Soc. Amer., Ann.

28: 438-444. —Strong, 1935. U. S. Dept. Agr., Bur. Ent. Plant Quar., Ann. Rpt. for 1935, p.

59. —Flanders, 1942. Ent. Soc. Amer., Ann. 35: 253 (eggs and ovaries). —Flanders, 1944.

Jour. Econ. Ent. 37: 410 (diapause). —Coles and Puttler, 1963. Jour. Econ. Ent. 56: 611.

Morphology: Parker, 1924. Soc. Ent. de France, Ann. 93: 316 (larvae). —Miller, 1972. Ent. Soc. Amer., Ann. 65: 1119-1124 (antennae).

Genus SPANIOPUS Walker

Spaniopus Walker, 1833. Ent. Mag. 1: 371, 466.

Type-species: *Spaniopus dissimilis* Walker. Monotypic.

Polycelis Thomson, 1878. Hym. Scand., v. 4, pp. 131, 143. Preocc. by Ehrenberg, 1831.

Type-species: *Pteromalus conspersus* Walker. Desig. by Ashmead, 1904.

Polyscelis Ashmead, 1894. Cincinnati Soc. Nat. Hist., Jour. 17: 52. Emend. Preocc. by Girard, 1850.

Neopolycelis Hincks, 1944. Roy. Ent. Soc. London, Proc. (B) 13: 38. N. name for *Polycelis* Thomson.

Taxonomy: Gahan, 1922. U. S. Natl. Mus., Proc. 61(24): 10-12. —Graham, 1956. Ent. Monthly Mag. 92: 250.

dissimilis (Walker). Ont., Pa., Md., Va., Ill.; Europe. Ecology: Either a primary or secondary parasite of hosts developing in grass stems. Host: *Mayetiola destructor* (Say);

Platygaster zosine Walk.

Spaniopus dissimilis Walker, 1833. Ent. Mag. 1: 466. ♂.

Polyscelis modestus Gahan, 1922. U. S. Natl. Mus., Proc. 61 (24): 11. ♀, ♂.

Taxonomy: Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 67-70 (*modestus*).

Biology: Myers, 1925 (1924). Jour. Agr. Res. 29: 289-295. —Hill and Smith, 1928. Jour. Agr.

Res. 36: 153-155. —Hill and Smith, 1931. Ent. Soc. Wash., Proc. 33: 182-183. —Gahan, 1934

(1933). U. S. Dept. Agr., Misc. Pub. 174: 67-70. —Hill *et al.*, 1939. U. S. Dept. Agr., Tech.

Bul. 689: 12-13. —Hill and Pinckney, 1940. U. S. Dept. Agr., Tech. Bul. 715: 9-13.

Morphology: Hill and Smith, 1931. Ent. Soc. Wash., Proc. 33: 183-185 (immature stages).

websteri (Ashmead). Md., Ind. Ecology: Emerges from stem gall on *Lactuca canadensis*; possibly parasitic on gall-making cynipid or its *Eurytoma* parasite.
Polyscelis Websteri Ashmead, 1894. Cincinnati Soc. Nat. Hist., Jour. 17: 52. ♀, ♂.

Taxonomy: Gahan, 1922. U. S. Natl. Mus., Proc. 61 (24): 11.

Biology: Webster, 1894. Cincinnati Soc. Nat. Hist., Jour. 17: 36.

Genus TRICHOMALUS Thomson

Isocyrtus subg. *Trichomalus* Thomson, 1878. Hym. Scand., v. 5, pp. 131, 134.

Type-species: *Trichomalus punctinucha* Thomson. Desig. by Ashmead, 1904.

Lanceosoma Erdos, 1953. Acta. Biol. Hung. 4: 234.

Type-species: *Lanceosoma althaeae* Erdos. Orig. desig.

Revision: Delucchi and Graham, 1956. Beitr. z. Ent. 6: 543-576. —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 707-737.

Taxonomy: Graham, 1956. Ent. Monthly Mag. 92: 247-250 (syn.; types).

deiphon (Walker). Fla.

Metopon deiphon Walker, 1843. Soc. Ent. de France, Ann. (2) 1: 161. ♀.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32: 156.

eurypon (Walker). Fla.

Pteromalus eurypon Walker, 1847. Ann. and Mag. Nat. Hist. (1) 19: 398. ♀.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32: 158.

habis (Walker). Fla.

Lampretatus habis Walker, 1843. Soc. Ent. de France, Ann. (2) 1: 155. ♀.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32: 158.

inscitus (Walker). N. Y. Ohio; Europe. Host: *Rhynchaenus pallicornis* Say. Other carculionid hosts recorded in Palearctic Literature.

Pteromalus inscitus Walker, 1835. Ent. Mag. 2: 499. ♀.

Pteromalus affinis Walker, 1835. Ent. Mag. 2: 492. ♀.

Pteromalus tristis Walker, 1835. Ent. Mag. 2: 500. ♀.

Pteromalus microcerus Walker, 1835. Ent. Mag. 2: 500. ♀.

Pteromalus Deiochus Walker, 1839. Monog. Chalcid., v. 1, p. 240. ♂.

Pteromalus reconditus Foerster, 1841. Beitr. Monog. Pteromalinen, p. 13. ♀.

Pteromalus Diachymatis Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 203. ♂.

Pteromalus Orchestis Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 205. ♀.

Pteromalus Lampe Walker, 1848. List. Hym. Brit. Mus., Chalcid., v. 2, pp. 125, 192. ♀.

Isocyrtus (*Trichomalus*) *subnudus* Thomson, 1878. Hym. Scand., v. 5, p. 140. ♀, ♂.

Taxonomy: Graham, 1956. Ent. Monthly Mag. 92:248-250 (syn.; types). —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 728-729 (syn.; types).

Biology: Munding, 1951. Jour. Econ. Ent. 44: 30.

perfectus (Walker). Idaho, B. C., Wash., Oreg., Calif.; Europe. Host: *Ceutorhynchus assimilis* (Payk.). Almost all North American literature about this species used the name *fasciatus* Thomson, a misidentification.

Pteromalus perfectus Walker, 1835. Ent. Mag. 2: 488. ♀.

Pteromalus decorus Walker, 1835. Ent. Mag. 2: 496. ♀.

Pteromalus decisis Walker, 1835. Ent. Mag. 3: 185. ♀.

Pteromalus opulentus Foerster, 1841. Beitr. Monog. Pteromalinen, p. 26. ♀.

Isocyrtus (*Trichomalus*) *laevinucha* Thomson, 1878. Hym. Scand., v. 5, p. 140. ♀, ♂.

Taxonomy: Graham, 1956. Ent. Monthly Mag. 92: 250 (syn.; types). —Delucchi and Graham, 1956. Beitr. z. Ent. 8: 551, 571-572 (descr.; syn.). —Peck, 1963. Canad. Ent. Sup. 30: 669 (correction of ident. of N. Amer. specimens). —Graham, 1969. Brit. Mus. (Nat.Hist.) Ent., Bul. Sup. 16: 729 (types).

- Biology: Baker, 1936. *Canad. Ent.* 68: 192. — Doucette, 1944. *Wash. Agr. Expt. Sta., Bul.* 455: 124. — Doucette, 1948. *Jour. Econ. Ent.* 41: 764-765. — Hanson *et al.*, 1948. *Wash., Agr. Expt. Sta., Bul.* 498: 14. — McLeod, 1953. *Ent. Soc. Brit. Columbia, Proc.* 49: 12-17. — Walz, 1957. *Ent. Soc. Amer., Ann.* 50: 219. — Jourdeuil, 1960. *Ann. des Epiphyt.* 11: 462.
- statutus** (Foerster). Va.; Europe. Host: *Oscinella frit* (L.).
Pteromalus status Foerster, 1841. *Beitr. Monog. Pteromalinen*, p. 20. ♀.
Pteromalus fertilis Foerster, 1841. *Beitr. Monog. Pteromalinen*, p. 20. ♀.
- Taxonomy: Graham, 1969. *Brit. Mus. (Nat. Hist.) Ent., Bul. Sup.* 16: 719 (syn.; characters of gaster).

Genus EUPTEROMALUS Kurdjumov

Eupteromalus Kurdjumov, 1913. *Ent. Obozr.* 13: 12.

Type-species: *Pteromalus nidulans* Thomson. Orig. desig. Type-species originally cited by Kurdjumov as *nidulans* Foerster, but, although a Foerster type exists in Vienna, Foerster did not describe it; Thomson described it and cited Foerster as author.

Nemicromelus Girault, 1917. *Deser. Hym. Chalcidoid. Variorum cum Observ.* V, p. 4.

Type-species: *Merisus subapterus* Riley. Orig. desig.

The genus *Trichomalopsis* Crawford, described 2 months before *Eupteromalus* Kurdjumov, and up to now considered to be exclusively Oriental, might prove to be inseparable from *Eupteromalus*.

Revision: Graham, 1969. *Brit. Mus. (Nat. Hist.) Ent., Bul. Sup.* 16: 737-777 (Europe and N. Amer.).

Taxonomy: Gahan, 1921 (1920). *Ent. Soc. Wash., Proc.* 22: 240-241. — Gahan, 1934 (1933). *U. S. Dept. Agr., Misc. Pub.* 174: 80 (syn.).

albopilosus Graham. Wyo., Colo.; Europe. Host: *Bathyplectes curculionis* (Thomson).

Eupteromalus albopilosus Graham, 1969. *Brit. Mus. (Nat. Hist.) Ent., Bul. Sup.* 16: 753. ♀, ♂.

americanus Gahan. Mich., Wis., Iowa, N. Dak., Wyo., Colo., Wash., Oreg., Calif. Host:

Mayetiola destructor (Say).

Eupteromalus americanus Gahan, 1934 (1933). *U. S. Dept. Agr., Misc. Pub.* 174: 82. ♀, ♂.

Biology: Hill, 1953. *U. S. Dept. Agr., Cir.* 923: 3.

cognatus Gahan. Ohio. Host: *Epeira foliata* (Fourc.), *E. undata* (Oliv.), *Philodromus aureolus* (Oliv.).

Eupteromalus cognatus Gahan, 1924. *U. S. Natl. Mus., Proc.* 65 (4): 16. ♀, ♂.

Biology: Auten, 1925. *Ent. Soc. Amer., Ann.* 18: 242.

dubius (Ashmead). D. C., Ohio, Ind., Wis., Ill., Minn., Iowa, Nebr. Ecology: Secondary parasite.

Host: *Lissonota* sp., *Microplitis gortynae* Riley; *Lydella radialis* (Townsend), L.

thompsoni Herting, *Pyraustomyia penitalis* (Coq.).

Meraporus dubius Ashmead, 1896. *Amer. Ent. Soc., Trans.* 23: 219. ♀, ♂.

Biology: Breakey, 1930. *Ent. Soc. Amer., Ann.* 23: 186. — Blickenstaff *et al.*, 1953. *Iowa State Col., Jour. Sci.* 27: 374-375.

leguminis Gahan. Wyo., Idaho, Utah, Nev., Oreg. Host: *Bruchus pisorum* (L.), *Hypera postica* (Gyll.); *Bathyplectes* sp.

Eupteromalus leguminis Gahan, 1937. *Ent. Soc. Wash., Proc.* 39: 63. ♀, ♂.

peregrinus Graham. Que., Ont., Maine and Mass., s. to Del.; B. C., Wash., Oreg.; Europe.

Introduced from Europe beginning in 1906, first recovered in 1908 in Mass.; colonized in Washington State beginning in 1931 and recovered in 1935. Host: *Nygmyia phaeorrhoea* (Donov.), *Porthetria dispar* (L.), *Stilpnotia salicis* (L.); *Lydella* sp.; *Apanteles lacteicolor* Vier., *A. melanoscelus* (Ratz.), *Meteorus versicolor* (Wesm.), *Rogas unicolor* (Wesm.).

When first introduced into North America from Europe this species was cited in North American literature under the name *nidulans* Thomson (or incorrectly as *nidulans* Foerster). This name was changed quickly to *egregius* Foerster (now considered a

misidentification). Usage in North American literature reverted to *nidulans* about 1920 and remained there until 1956. That year Graham placed *nidulans* Thomson in synonymy under *apicalis* Walker and *hemipterus* Walker. The first of these being preoccupied, usage of *hemipterus* was followed. However, in 1969, in his revision of the European and North American species of *Eupteromalus*, Graham stated that there are no undoubted North American records of *hemipterus*. He described *peregrinus* for the European species that has been commonly known here as *egregius* or *nidulans* in a very large amount of literature.

Eupteromalus peregrinus Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 764. ♀, ♂.

Taxonomy: Howard, 1908. U. S. Dept. Agr., Ann. Rpt. for 1907, pp. 454-455. —Kurdjumov, 1912. Ent. Obozr. 12: 228-229. —Kurdjumov, 1913. Ent. Obozr. 13: 19. —Gahan, 1914. U. S. Natl. Mus., Proc. 48: 163. —Viereck, 1917 (1916). Conn. State Geol. and Nat. Hist. Surv., Bul. 22: 773. —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 764-765.

Biology: Fiske, 1910. Parasites of Gypsy and Brown-Tail Moths intro. into Mass., pp. 54-55. —Howard and Fiske, 1911. U. S. Dept. Agr., Bur. Ent. Bul. 91: 61, 65, 69, 262, 268-278, 309. —Johannsen, 1912. Maine Agr. Expt. Sta., Bul. 207: 457-458. —Muesebeck, 1918. Jour. Agr. Res. 14: 192, 201. —Burgess and Crossman, 1927. U. S. Dept. Agr., Bul. 1469: 18-19. —Muesebeck and Dohanian, 1927. U. S. Dept. Agr., Bul. 1487: 28-29. —Burgess and Crossman, 1929. U. S. Dept. Agr., Tech. Bul. 86: 138-142. —Brown, 1931. U. S. Dept. Agr., Cir. 176: 11-12. —Proper, 1931. Jour. Agr. Res. 43: 37-56. —Proper, 1934. Jour. Agr. Res. 48: 368-369. —Jones *et al.*, 1938. U. S. Dept. Agr., Cir. 459: 7-8, 14-19, 23-24. —Salt, 1941. Cambridge Phil. Soc., Biol. Rev. 16: 247-259. —Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139: 103-104. —Russo, 1959. R. Lab. Ent. Agr. Portici, Bol. 17: 176.

sarcophagae Gahan. Mich., Kans., Idaho, Ariz. Host: *Blaesoxipha kellyi* (Ald.).

Eupteromalus sarcophagae Gahan, 1914. U. S. Natl. Mus., Proc. 48: 163. ♀, ♂.

Taxonomy: Gahan, 1921 (1920). Ent. Soc. Wash., Proc. 22: 240.

subapterus (Riley). Ont., N. Y., s. to N. C., w. to Minn., Okla., and Oreg. Host: *Mayetiola destructor* (Say), *Meromyza americana* Fitch; *Platygaster zosine* Walk.

Pteromalus ? *fulvipes* Forbes, 1885. Ill. State Dept. Agr., Trans. 22: App. p. 47. ♀, ♂. Preocc. by Walker, 1836.

Merisus (*Homoporus*) *subapterus* Riley, 1885. U. S. Natl. Mus., Proc. 8: 416. ♀, ♂.

Taxonomy: Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 75-82. —Hill and Pinckney, 1940. U. S. Dept. Agr., Tech. Bul. 715: 7-13 (immature stages).

Biology: Osborn, 1898. U. S. Dept. Agr., Bur. Ent. Bul. (n. s.) 16: 28-33. —Packard, 1916. Jour. Agr. Res. 6: 377-381. —McColloch, 1923. Kans. Agr. Expt. Sta., Tech. Bul. 11: 63, 67-69. —Hill *et al.*, 1939. U. S. Dept. Agr., Tech. Bul. 689: 1-15. —Hill, 1953. U. S. Dept. Agr., Cir. 923: 2-4, 7, 9-14.

tachinae Gahan. Ont., Ohio, Ind., Tenn., Iowa, La., Kans., Tex. Host: *Ostrinia nubilalis* (Hbn.), *Pseudaletia unipuncta* (Haw.); *Archytas* sp., *Hypoderma lineatum* (Vill.).

Eupteromalus tachinae Gahan, 1917. U. S. Natl. Mus., Proc. 53: 211. ♀.

Biology: Baker, 1915. Ent. Soc. Ont., Ann. Rpt. 45: 87 (*Eupteromalus* sp.).

viridescens (Walsh). Ont. and N. H., s. to Fla., w. to B. C., Wash., Oreg., Calif. Host:

Pyraustomyia penitalis (Coq.); *Apanteles congregatus* (Say), *A. limenitidis* (Riley), *A. marginiventris* (Cress.), *A. medicaginis* Mues., *A. militaris* (Walsh), *A. papaipemae* Mues., *A. smerinthi* Riley, *Bathyplectes curculionis* (Thoms.), *Bracon caulicola* (Gah.), *B. lutus* Prov., *Cratichneumon astutus* (Holmgr.), *Diadegma insularis* (Cress.), *Horogenes insularis* (Cress.), *Macrocentrus pallisteri* DeG., *Microplitis ceratoniae* Riley, *M. gortynae* Riley.

Glyphe viridescens Walsh, 1861. Ill. State Agr. Soc. Trans. 4: 264, 370. ♀.

Glyphe viridescens Walsh, 1865. Ill. State Agr. Soc. Trans. 5: 11, 483. Emend.

Taxonomy: Gahan, 1921 (1920). Ent. Soc. Wash., Proc. 22: 240.

Biology: Girault, 1912. Wis. Nat. Hist. Soc., Bul. 10: 31-46. —Balduf, 1929. Ohio Jour. Sci. 29: 226-227, 237. —Decker, 1935. Iowa State Coll., Jour. Sci. 9: 572-576. —Walker and Anderson, 1936. Va. Truck Expt. Sta., Bul. 93: 1382-1383. —Gilmore, 1938. Jour. Econ. Ent. 31: 715. —Hamlin *et al.*, 1949. U. S. Dept. Agr., Tech. Bul. 975: 41, 44, 50-51, 55-58, 83. —Harcourt, 1960. Canad. Ent. 92: 423. —Puttler 1966. Jour. Econ. Ent. 59: 483.

Genus GYRINOPHAGUS Ruschka

Gyrinophagus Ruschka, 1914. Zool.-Bot. Gesell. Wien, Verh. 64: 208.

Type-species: *Gyrinophagus luteipes* Ruschka. Monotypic.

Taxonomy: Delucchi, 1956 (1955). Ztschr. f. Angew. Ent. 38: 150-153.

dineutis (Ashmead). N. J., Mich., Iowa. Host: *Dineutes assimilis* (Kirby), *Gyrinus* sp.
Cyrtogaster dineutis Ashmead, 1894. Canad. Ent. 26: 26. ♀.

Biology: Butcher, 1933. Ent. Soc. Amer., Ann. 26: 83. —Galtsoff *et al.*, 1937. Culture Methods for Invertebrate Animals, pp. 496-497.

Genus SISYRIDIVORA Gahan

Sisyridivora Gahan, 1951. Ent. Soc. Amer., Ann. 44: 100.

Type-species: *Sisyridivora cavigena* Gahan. Orig. desig.

Taxonomy: Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 778.

cavigena Gahan. Ohio. Host: *Climacia areolaris* (Hagen).

Sisyridivora cavigena Gahan, 1951. Ent. Soc. Amer., Ann. 44: 102. ♀, ♂.

Biology: Brown, 1951. Ent. Soc. Amer., Ann. 44: 103-110.

Genus NASONIA Ashmead

Nasonia Ashmead, 1904. Carnegie Mus., Mem. 1: 317, 318.

Type-species: *Nasonia brevicornis* Ashmead. Orig. desig.

Mormoniella Ashmead, 1904. Carnegie Mus., Mem. 1: 316, 317.

Type-species: *Mormoniella brevicornis* Ashmead. Orig. desig.

Ashmead placed *Nasonia* and *Mormoniella* in different tribes, but the same specimens were type material of both type-species. A very large amount of literature has been published about this genus, about half of it using the name *Mormoniella*, which has page priority. However, Brues revised the genus, and as first reviser, he selected the name *Nasonia*.

Revision: Brues, 1910. Canad. Ent. 42: 260.

Taxonomy: Kurdjumov, 1913. Ent. Obozr. 13: 5 (*Mormoniella*). —Gahan, 1927. U. S. Natl. Mus., Proc. 71 (4): 5 (*Mormoniella*). —Gahan and Peck, 1946. Wash. Acad. Sci., Jour. 36: 316 (type-species). —Peck, 1951. In Muesebeck, *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 559 (*Nasonia*). —Edwards, 1952. Ent. Monthly Mag. 88: 1056 (*Mormoniella*). —Hedqvist, 1963. Stud. Forest. Suecica 11: 125 (*Nasonia*).

vitripennis (Walker). Que., s. to Fla., w. to B. C. and Calif.; Cosmopolitan. Host: *Calliphora* sp., *C. vicina* R.-D., *Cochliomyia hominivorax* (Coq.), *C. macellaria* (F.), *Fannia* sp., *F. canicularis* (L.), *F. femoralis* (Stein), *F. scalaris* (F.), *Hubneria estigmenensis* (Sellers), *Hypoderma* sp., *Lucilia* sp., *L. illustris* (Meig.), *Musca* sp., *M. domestica* L., *Omotoma fumiferanae* (Tothill), *Ophyra aenescens* (Wied.), *O. leucostoma* (Wied.), *Phaenicia eximia* (Wied.), *P. mexicana* (Macq.), *P. sericata* (Meig.), *Phormia regina* (Meig.), *Piophilha casei* (L.), *Polietes lardaria* (F.), *Protocalliphora avium* S. and D., *P. metallica* (Townes), *P. sialia* S. and D., *Sarcophaga* sp., *Synthesiomyia nudiseta* (Wulp).

Pteromalus vitripennis Walker, 1836. Ent. Mag. 3: 492. ♀.

Pteromalus muscarum Hartig, 1838. Forstwiss. Forst. Naturk., Jahrb. 1: 256.

Pteromalus abnormis Boheman, 1856. Ofvers. Svensk. Vetensk.-Akad., Forh. 15: 58, 59. ♀, ♂.

Dicyclus pallinervosus Walker, 1872. Notes on Chalcid., p. 117. ♀.

Stictonotus insuetus Walker, 1872. Notes on Chalcid., p. 117. ♀.

Mormoniella brevicornis Ashmead, 1904. Carnegie Mus., Mem. 1: 316. ♀.

Nasonia brevicornis Ashmead, 1904. Carnegie Mus., Mem. 1: 317. ♀.

Platymesopus macellariae Brethes, 1913. Buenos Aires Mus. Nac. de Hist. Nat., An. 24: 92. ♀.

Taxonomy: Gahan, 1927. U. S. Natl. Mus., Proc. 71 (4): 5. — Gahan and Peck, 1946. Wash. Acad. Sci., Jour. 36: 316. — De Santis, 1957. La Plata Univ. Nac., Mus. Notas 19: 169. — Tonapi, 1958. Roy. Ent. Soc. London, Trans. 110: 550. — Saul, 1960. Rev. Suisse de Zool. 67: 270. — De Santis, 1960. Fac. Agron., Rev. (3) 36: 116-117. — Hedqvist, 1963. Stud. Forest. Suecica 11: 125-127. — Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 779.

Biology: Girault and Sanders, 1910. Psyche 17: 9-28. — Howard, 1911. The House Fly, pp. 90-93. — Tiegs, 1922. Roy. Soc. So. Austral., Trans. and Proc. 46: 319-527. — Parker and Thompson, 1928. Soc. Ent. de France, Ann. 97: 435-437. — Smit, 1931. So. Afr. Dept. Agr., Vet. Serv., Rpt. 17: 404-407. — Cousin, 1933. Bul. Biol. France et Belg. 67: 371-400. — Evans, 1933. Bul. Ent. Res. 24: 385-405. — Roberts, 1933. Ecology 14: 307. — Roberts, 1935. Jour. Agr. Res. 50: 481-492. — Laing, 1937. Jour. Anim. Ecol. 6: 304-305. — Jacobi, 1939. Arch. Neerland. de Zool. 3: 197-282. — De Bach and Smith, 1941. Ecology 22: 365-368. — De Bach and Smith, 1941. Jour. Econ. Ent. 34: 741-745. — Van der Merwe, 1943. Ent. Soc. So. Afr., Jour. 6: 48-64. — De Bach, 1943. Pan-Pacific Ent. 19: 112-119. — Moursi, 1946. Soc. Roy. Ent. d'Egypte, Bul. 30: 21-59. — Ulyett, 1950. Bul. Ent. Res. 40: 533-537. — Whiting, 1950. Genetics 35: 699. — Whiting, 1954. Evolution 40: 135. — Edwards, 1954. Behaviour 7: 88-112. — Whiting, 1955. Genetics 40: 602. — Whiting, 1958. Tenth Internatl. Cong. Ent., Proc. v. 2, p. 857. — Whiting, 1958. Assoc. Southeast. Biol., Bul. 5: 16. — Schneiderman and Horwitz, 1958. Jour. Expt. Biol. 35: 520. — Wylie, 1958. Canad. Ent. 90: 597. — Ohgushi, 1959. Zool. Soc. of Japan, Zool. Mag. 68: 426. — Barras, 1960. Behaviour 15: 185-209, 210-218. — Barras 1961. Behaviour 18: 288-312. — Ohgushi, 1961. Jap. Jour. Appl. Ent. and Zool. 5: 154. — Saunders, 1962. Jour. Insect Physiol. 8: 309. — Nagel and Pimentel, 1963. Canad. Ent. 95: 208. — Wylie, 1963. Canad. Ent. 95: 881-886. — King and Hopkins, 1963. Jour. Expt. Biol. 40: 751-761. — Beard, 1964. Jour. Insect Path. 6: 1-7. — Nagel and Pimentel, 1964. Ecology 45: 658-660. — Wylie, 1964. Canad. Ent. 96: 1023. — Wylie, 1965. Canad. Ent. 97: 279-286, 970-977. — Saunders, 1966. Jour. Ins. Physiol. 12: 570. — Whiting, 1967. Quart. Rev. Biol. 42: 333-406. — Wylie, 1967. Canad. Ent. 99: 742-748. — Walker, 1967. Ecology 48: 294. — Chabora, 1967. Canad. Ent. 99: 763. — Barras, 1969. Behaviour 35: 304-312. — Wylie, 1970. Canad. Ent. 102: 886-894. — Chabora and Pimentel, 1970. Ent. Soc. Amer., Ann. 63: 479-486. — Chabora and Chabora, 1971. Ent. Soc. Amer., Ann. 64: 558-562. — Wylie, 1971. Canad. Ent. 103: 1537-1544.

Morphology: Parker, 1924. Soc. Ent. de France, Ann. 93: 309 (larva). — Evans, 1933. Bul. Ent. Res. 24: 400-403. — Cutler, 1955. Roy. Ent. Soc. London, Proc. (A) 30: 73-81. — Tonapi, 1958. Roy. Ent. Soc. London, Trans. 110: 550-551 (spiracles). — King, 1962. Roy. Ent. Soc. London, Proc. (A) 37: 73, 121. — Slifer, 1969. Biol. Bul. 136: 253-263 (antennae). — Sanger and King, 1971. Entomologist 104: 137-149 (male genitalia). — Miller, 1972. Ent. Soc. Amer., Ann. 65: 1119-1124 (antennae).

Genus UROLEPIS Walker

Urolepis Walker, 1846. List Hym. Brit. Mus., Chalcid., v. 1, p. 26.

Type-species: *Ormocerus maritimus* Walker. Monotypic.

Halizoa Foerster, 1856. Hym. Stud., v. 2, p. 145. N. name, unnecessarily proposed for *Urolepis* thought to be preocc.

Pteromalus subg. *Halizous* Thomson, 1878. Hym. Scand., v. 5, pp. 146, 147. Emend.

rufipes (Ashmead). N. Y., Minn., Nebr., Kans., Tex., Utah, Oreg., Calif. Host: *Hydropyrus hians* (Say), *Setacera pacifica* (Cress.).

Halizoa rufipes Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 225. ♀, ♂.

Genus DIGLOCHIS Foerster

Diglochis Foerster, 1856. Hym. Stud., v. 2, p. 65. No species.

Type-species: *Pteromalus complanatus* Ratzeburg. By subsequent ref. by Mayr, 1904.

Pteromalus subg. *Trichoglenus* Thomson, 1878. Hym. Scand., v. 5, pp. 146, 149.

Type-species: *Pteromalus complanatus* Ratzeburg. Monotypic.

Trichoglenes Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 225. Emend.

Taxonomy: Graham, 1969. Brit. Mus. (Nat. Hist.). Ent., Bul. Sup. 16: 782-783 (identity of *complanatus* Ratzeburg questionable; application to Internatl. Comn. may be necessary).
occidentalis (Ashmead). Conn., Wis., Minn., Man., Sask., Alta., B. C., Wash., Oreg. Host: *Chrysops* sp., *C. aestuans* Wulp., *C. excrucians* Walk., *C. frigidus* O. S., *C. furcatus* Walk., *C. mitus* O. S., *C. nigripes* Zett., *Hybomitra affinis* (Kby.), *H. frontalis* (Walk.), *Tabanus* sp.

Trichoglenes occidentalis Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 225. ♀.

Biology: Philip, 1931. Minn. Agr. Expt. Sta., Tech. Bul. 80: 68. — Miller, 1951. Canad. Jour. Zool. 29: 261. — James, 1952. Ent. Soc. Ont., Ann. 82: 70-74. — James, 1964 (1963). Canad. Ent. 95: 1229-1231 (life hist.).

Genus TOMICOBIA Ashmead

Tomicobia Ashmead, 1899. Ent. Soc. Wash., Proc. 4: 203. No species.

Type-species: *Tomicobia tibialis* Ashmead. Desig. by Ashmead, 1904.

Ipocoelius Ruschka, 1924. Ent. Tidskr. 45: 6.

Type-species: *Ipocoelius seitneri* Ruschka. Orig. desig.

The adults of these parasites emerge from the adults of their scolytid hosts.

Revision: Hedqvist, 1959. Opusc. Ent. 24: 177-184. — Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 784-787.

Taxonomy: Gahan, 1938. Ent. Soc. Wash., Proc. 40: 221-222 (syn.).

peratripes (Girault). N. C.

Nasonia peratripes Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 1. ♀.

Taxonomy: Hedqvist, 1959. Opusc. Ent. 24: 184. — Whiting, 1967. Quart. Rev. Biol. 42: 336.
tibialis Ashmead. Maine, s. to N. C., w. to Idaho and Calif. Host: *Ips* sp., *I. calligraphus* (Germ.), *I. confusus* (Lec.), *I. grandicollis* (Eich.), *I. oregoni* (Eich.), *I. pini* (Say), *Orthotomicus caelatus* (Eich.), *Pityophthorus* sp.

Tomicobia tibialis Ashmead, 1904. Carnegie Mus., Mem. 1: 283. ♀.

Biology: Hopkins, 1914 (1913). Ent. Soc. Wash., Proc. 15: 160. — Reid, 1957. Canad. Ent. 89: 7-8. — Ruckes, 1963. Pan-Pacific Ent. 39: 45. — Bedard, 1965. Boyce Thompson Inst. Plant Res., Contrib. 23: 77-81. — Rice, 1969. Boyce Thompson Inst. Plant Res., Contrib. 24: 189-194. — Rice, 1971. Pan-Pacific Ent. 47: 1-8 (flight).

Genus ARTHROLYTUS Thomson

Pteromalus subg. *Arthrolytus* Thomson, 1878. Hym. Scand., v. 5, pp. 147, 158.

Type-species: *Arthrolytus punctatus* Thomson. Desig. by Ashmead, 1904.

Taxonomy: Burks, 1969. Ent. Soc. Wash., Proc. 71: 298-300.

fasciatus (Provancher). Que., N. H., Mass., Pa.

Semiotellus fasciatus Provancher, 1881. Nat. Canad. 12: 294. ♀, ♂.

Taxonomy: Burks, 1964 (1963). Canad. Ent. 95: 1261-1262.

muesebecki Burks. Calif. Ecology: Emerges from galls of *Andricus brunneus* Fullaway on leaves of *Quercus douglasii* and *Callirhytis quercusagrifoliae* (Bassett) on leaf axils of several species of *Quercus*.

Arthrolytus muesebecki Burks, 1969. Ent. Soc. Wash., Proc. 71: 302. ♀, ♂.

Genus CYCLOGASTRELLA Bukovskij

Cyclogastrella Bukovskij, 1938. Ent. Obozr. 27: 153.

Type-species: *Cyclogastrella quercina* Bukovskij. Monotypic.

Taxonomy: Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 796-797

(*Pseudomicromelus* Gahan and Fagan, name formerly used for this genus in the Holarctic region, is generically different and is Australian).

- deplanata** (Nees). Calif.; Europe. Ecology: Adults often swarm in buildings, congregating on windows. Host: *Anarsia lineatella* Zell. Other lepidopterous hosts recorded in Palearctic literature.
- Pteromalus deplanatus* Nees, 1934. Hym. Ichn. Aff. Monog., v. 2, p. 110. ♀, ♂.
- Ormocerus simplex* Walker, 1834. Ent. Mag. 2: 169. ♂.
- Pteromalus domesticus* Walker, 1835. Ent. Mag. 2: 481. ♀.
- Pteromalus Artemon* Walker 1839. Monog. Chalcid. v. 1, p. 218. ♂.
- Pteromalus Merope* Walker, 1839. Monog. Chalcid., v. 1, p. 219. ♂.
- Pteromalus Phasis* Walker, 1848. List Hym. Brit. Mus., Chalcid., pt. 2, pp. 123, 175. ♂.
- Pteromalus Acco* Walker, 1848. List Hym. Brit. Mus., Chalcid., pt. 2, pp. 124, 177. ♀.
- Pteromalus Androbins* Walker, 1848. List Hym. Brit. Mus., Chalcid., pt. 2, pp. 126, 200. ♀.
- Cyclogastrella quercina* Bukovskij, 1938. Ent.Obozr. 27: 154. ♀, ♂.

Taxonomy: Walker, 1845. Zoologist 3: 1142 (syn.). —Gahan, 1938. Ent. Soc. Wash., Proc. 40: 226. —Graham, 1956. Ent. Monthly Mag. 92: 258. —Boucek, 1965. Mus. Natl. Pragae, Acta Ent. 11: 26-27. —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 796 (syn.).

Biology: Scott, 1919. Ent. Monthly Mag. 55: 13-16. —Scott, 1922. Ent. Monthly Mag. 58: 56-60. —Gahan, 1933. Ent. Soc. Wash., Proc. 35: 44.

Genus EPIPTEROMALUS Ashmead

Epipteromalus Ashmead, 1904. Carnegie Mus., Mem. 1: 319.

Type-species: *Epipteromalus algonquinensis* Ashmead. Orig. desig.

Taxonomy: Kurdjumov, 1913. Ent. Obozr. 13: 4 (syn. of *Trichomalus* Thomson).

algonquinensis Ashmead. Ill.

Epipteromalus algonquinensis Ashmead, 1904. Carnegie Mus., Mem. 1: 319. ♀.

Polycystus gibbus Girault, 1920. U. S. Natl. Mus., Proc. 58: 212. ♀.

Taxonomy: Gahan and Peck, 1946. Wash. Acad. Sci. Jour. 36: 315 (syn.; both species described from same specimens).

Genus TRITNEPTIS Girault

Tritneptis Girault, 1908. Psyche 15: 92.

Type-species: *Tritneptis hemerocampae* Girault. Orig. desig.

Revision: Gahan, 1938. Ent. Soc. Wash., Proc. 40: 213-214. —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 800-804 (European fauna). —Burks, 1971. Biol. Soc. Wash., Proc. 84: 1-6.

Taxonomy: Girault, 1924. Insector Inscitiae Menstruus 12: 174. (syn. of *Dibrachys*).

diprionis Gahan. Que., Ont., Maine, Mass., Minn.; Europe. Host: *Diprion similis* (Htg.), *Gilpinia frutetorum* (F.), *G. hercyniae* (Htg.), *Neodiprion lecontei* (Fitch), *N. pinetum* (Nort.), *N. pratti* (Dyar), *N. sertifer* (Four.), *Pikonema alaskensis* (Roh.), *P. dimmockii* (Cress.), *Pristiphora geniculata* (Htg.).

Tritneptis diprionis Gahan, 1938. Ent. Soc. Wash., Proc. 40: 217. ♀, ♂.

Taxonomy: Finlayson, 1963. Canad. Ent. 95: 479, 482, 483, 500 (immature stages).

Biology: Forbes and Daviault, 1964. Canad. Ent. 96: 1128.

doris Burks. Wyo., Utah. Host: *Coloradia doris* Barnes, *Hemileuca* sp.

Tritneptis doris Burks, 1971. Biol. Soc. Wash., Proc. 84: 3. ♀, ♂.

hemerocampae Viereck, N. S., N. B., P. E. I., Que., s. to Va., w. to B. C., Wash., Oreg., Calif.

Host: *Argyrotaenia velutinana* (Walk.), *Coleophora malivorella* Riley, *Diachasma virginica* (F.), *Estigmene acrea* (Dru.), *Grapholitha molesta* (Busck), *Orgyia leucostigma* (J. E. Smith), *Laspeyresia pomonella* (L.), *Papilio polyxenes asterius* Stoll, *Platypreria guttata* (Bdvl.), *Stilpnotia salicis* (L.).

Tritneptis hemerocampae Girault, 1908. Psyche 15: 90, 92. ♀, ♂.

Coelopisthia diachasmae Crawford, 1910. Ent. Soc. Wash., Proc. 12: 145. ♀.

Amblymerus lipardis Viereck, 1924. Canad. Ent. 56: 69. ♀, ♂.

- Taxonomy: Girault, 1924. *Insecutor Inscitiae Menstruus* 12: 174 (syn. of *boucheanus* Ratzeburg). —Gahan, 1938. *Ent. Soc. Wash., Proc.* 40: 217 (Girault's syn. incorrect).
- Biology: Glendenning, 1924. *Canada Dept. Agr., Pam. (n. s.)* 50: 13 (*lipardis*). —Schaffner and Griswold, 1934. *U. S. Dept. Agr., Misc. Pub.* 188: 6, 153. —Jaynes and Marucci, 1947. *Jour. Econ. Ent.* 40: 11. —Brunson, 1957. *Jour. Econ. Ent.* 50: 375. —Allen, 1962. *U. S. Dept. Agr., Tech. Bul.* 1265: 102. —McNay, 1963. *Canad. Ins. Pest Rev.* 41: 20.
- klugii* (Ratzeburg). Que., Ont., Maine, Mich., Wis., Minn., Man., Sask., Mont., B. C., Wash., Oreg., Calif.; Europe. Possibly introduced from Europe along with its sawfly hosts; records have not been found. Host: *Gilpinia hercyniae* (Htg.), *Mesoleius tenthredinis* Morley, *Neodiprion pratti banksianae* Roh., *N. sertifer* (Four.), *N. tsugae* Midd., *Pristiphora erichsonii* (Htg.). North American literature about this species before 1939 is mostly under the name *nematicida* Packard; type of Packard's species has not been found, but it is most likely a syn of *Dibrachys cavus* (Walker).
- Pteromalus klugii* Ratzeburg, 1844. *Ichn. d. Forstins.*, v. 1, p. 198. ♀.
- Biology: Hewitt, 1911. *Canad. Ent.* 43: 297. —Hewitt, 1912. *Canada Dept. Agr., Div. Ent. Bul.* 5: 28-31. —Swaine, 1912. *Ent. Soc. Ont., Ann. Rpt.* 43: 87. —Finlayson and Reeks, 1936. *Canad. Ent.* 68: 163. —Finlayson, 1939 (1938). *Ent. Soc. Ont., Ann. Rpt.* 69: 34-35. —Furniss and Dowden, 1941. *Jour. Econ. Ent.* 34: 49-51. —Hopping *et al.*, 1943. *Sci. Agr.* 24: 54-61. —Lejeune and Hildahl, 1954. *Canad. Ent.* 86: 337-344. —Graham, 1956. *Forest Sci.* 2: 152-153. —Struble, 1957. *Forest Sci.* 3: 312. —Griffiths, 1959. *Canad. Ent.* 91: 508. —Schneiderman and Horwitz, 1958. *Jour. Expt. Biol.* 35: 520-551. —Drooz, 1960. *U. S. Dept. Agr., Tech. Bul.* 1212: 33. —Ohnesorge, 1962. *Ztschr. f. Angew. Ent.* 49: 142. —Gauss, 1964. *Ztschr. f. Angew. Ent.* 54: 226.
- Morphology: Finlayson, 1963. *Canad. Ent.* 95: 483, 500 (immature stages).
- koebelei* Gahan. Calif. Possibly a parasite of *Caliroa cerasi* (L.).
- tritueptis koebelei* Gahan, 1938. *Ent. Soc. Wash., Proc.* 40: 218. ♀, ♂.
- scutellata* (Muesebeck). N. H., Mass., Conn. Host: *Apanteles melanoscelus* (Ratz.).
- Coelopisthia scutellata* Muesebeck, 1927. *Jour. Agr. Res.* 34: 331. ♀, ♂.
- Biology: Muesebeck and Dohanian, 1927. *U. S. Dept. Agr., Bul.* 1487: 27.

Genus DIBRACHYS Foerster

- Revision: Boucek, 1965. *Mus. Natl. Pragae, Acta Ent.* 11: (Central European fauna).
—Graham, 1969. *Brit. Mus. (Nat. Hist.) Ent., Bul. Sup.* 16: 804-814 (European fauna).

Genus DIBRACHYS Subgenus ALLODIBRACHYS Boucek

- Dibrachys* subg. *Allodibrachys* Boucek, 1965. *Mus. Natl. Pragae, Acta Ent.* 11: 30.
Type-species: *Dibrachys hians* Boucek. Orig. desig.

No Nearctic species at present referred to this subgenus.

Genus DIBRACHYS Subgenus DIBRACHYS Foerster

- Dibrachys* Foerster, 1856. *Hym. Stud.*, v. 2, p. 65. No species.
Type-species: *Pteromalus boucheanus* Ratzeburg. Desig. by Thomson, 1878.
Coelopisthoidea Gahan, 1913. *Canad. Ent.* 45: 179.
Type-species: *Coelopisthoidea cladiae* Gahan. Orig. desig.

- Taxonomy: Graham, 1969. *Brit. Mus. (Nat. Hist.) Ent., Bul. Sup.* 16: 804 (Ratzeburg described no species of *Dibrachys*, but fragmentary remains of a specimen in Vienna identified by him as *Dibrachys* look like a *Colotrechnus*).
- cavus* (Walker). Newfoundland, Que., N. S., N. B., Maine, s. to Fla., w. to Alaska, B. C. and Calif.; worldwide. Ecology: This is the most polyphagous of chalcids; if all known host records are correct, it may be a primary, secondary, or tertiary parasite, attacking many orders of insects, plus spiders. Host: *Epeira* sp., *E. foliata* (Fourc.), *Philodromus aureolus* (Oliv.); *Forficula auricularia* L.; *Chrysopa* sp., *C. californica* Coq., *C. lateralis* Guer., *C. majuscula* Banks, *C. oculata* Say, *C. rufilabris* Burm., *Symphorobius*

californicus Banks; *Bruchus brachialis* Fahr., *Coleomegilla maculata* (Deg.), *Hypera postica* (Gyll.), *Sitophilus granarius* (L.), *S. oryzae* (L.), *Stegobium paniceum* (L.); *Acrionicta clarescens* Guen., *A. lepusculina* Guen., *Actebia femina* (Tausch.), *Actias luna* (L.), *Amathes c-nigrum* (L.), *A. collaris* (G. and R.), *Anarsia lineatella* Zell., *Anthophila pariana* (Clerck), *Archips cerasivoranus* (Fitch), *A. fervidanus* (Clem.), *A. semiferanus* (Walk.), *Archippus packardianus* (Fern.), *Argyrotaenia citrana* (Fern.), *A. velutinana* (Walk.), *Barbara colfaxiana* (Kearf.), *Choristoneura pinus* (Freem.), *C. rosaceana* (Harr.), *Coleophora malivorella* Riley, *Dichomeris marginella* (F.), *Dicymolomia pegasalis* (Walk.), *Dioryctria disclusa* Hein., *Ennomos subsignarius* (Hbn.), *Epiblema scudderianum* (Clem.), *Epizeuxis aemula* (Hbn.), *Eurukuttarus confederata* (Grote), *Fumaria casta* (Pallas), *Galleria mellonella* (L.), *Gnorimoschema gallaesolidaginis* (Riley), *Grapholitha molesta* (Busck), *Halisdodda argentata* Pack., *Orygia pseudotsugata* (McD.), *Hyphantria cunea* (Dru.), *Lambdina fiscellaria* (Guen.), *Laspeyresia pomonella* (L.), *Malacosoma americanum* (F.), *M. californicum* (Pack.), *M. constrictum* (Hy. Edw.), *M. dissidia* Hbn., *Nemapogon granellus* (L.), *Nygmia phaeorrhoea* (Donov.), *Oeneis melissa semidea* (Say), *Orygia antiqua* (L.), *O. leucostigma* (Smith), *O. vetusta* (Bdvl.), *Ostrinia nubilalis* (Hbn.), *O. obumbratalis* (Led.), *Papaipema nebris* (Guen.), *Pectinophora gossypiella* (Saund.), *Peridroma saucia* (Hbn.), *Phryganidia californica* Pack., *Phthorimaea operculella* (Zell.), *Pieris brassicae* (L.), *P. rapae* (L.), *Platyptilia carduidactyla* (Riley), *Platysamia cecropia* (L.), *Plodia interpunctella* (Hbn.), *Plutella xylostella* (L.), *Polia legitima* (Grote), *P. purpurissata* (Grote), *Porthetria dispar* (L.), *Rhyacionia* sp., *Sitotroga cerealella* (Oliv.), *Spilonota ocellana* (D. and S.), *Stilpnotia salicis* (L.), *Taniva albolineana* (Kearf.), *Thyridopteryx ephemeriformis* (Haw.), *Udea rubigalis* (Guen.); *Actia interrupta* Curr., *Bigonicheta spinipennis* (Meig.), *Carcelia gnava* (Meig.), *Compsilura concinnata* (Meig.), *Erynnia tortricis* (Coq.), *Lydella* sp., *Mericia aldrichi* (Twins.), *Nemorilla pyste* (Walk.), *Ocytata pallipes* (Fall.), *Phormia regina* (Meig.), *Phryxe vulgaris* (Fall.), *Protocalliphora* sp., *Pseudopetichia erecta* (Coq.), *Pyraustomyia penitalis* (Coq.), *Rhagoletis cingulata* (Loew); *Apanteles clisiocampae* Ashm., *A. glomeratus* (L.), *A. hyphantriae* Riley, *A. lacteicolor* Vier., *A. melanoscclus* (Ratz.), *Arenetra canadensis* Cress., *Ascogaster quadridentata* Wesm., *Bathyplectes* sp., *B. curculionis* (Thoms.), *Bathythrix pimplae* How., *Bracon* sp., *B. gelechiæ* Ashm., *Campoplex phthorimae* (Cush.), *C. validus* (Cress.), *Casiniaria limenitidis* (How.), *Chelonus shoshoneonorum* Vier., *Diadegma acutum* (Vier.), *Dibrachys* sp., *Diprion similis* (Htg.), *Erigorgus* sp., *Gambrus extrematis* (Cress.), *Gilpinia hercyniae* (Htg.), *Habrocytus* sp., *H. phycidis* Ashm., *Hyposoter fugitivus* (Say), *H. pilosulus* (Prov.), *Iseropus coelebs* (Walsh), *Itopectis behrensii* (Cress.), *I. conquisitor* (Say), *Macrocentrus* sp., *M. ancylivorus* Roh., *M. peroneae* Mues., *Mastrus carpocapsae* (Cush.), *M. pilifrons* (Prov.), *M. smithii* (Pack.), *Megachile* sp., *Meteorus* sp., *M. acronyctae* Mues., *M. communis* Cress., *M. hyphantriae* Riley, *M. versicolor* Wesm., *Nematus ribesii* (Scop.), *Neodiprion abietis* (Harr.), *N. abbotii* (Leach), *N. excitans* Roh., *N. lecontei* (Fitch), *N. pratti* (Dyar), *N. sertifer* (Four.), *Neopareophora litura* (Klug), *Perilitus coccinellae* (Schr.), *Phaeogenes walshiae* Ashm., *Pimpla aequalis* Prov., *P. sanguineipes* (Cress.), *Phobocampe clisiocampae* (Weed), *P. pallipes* (Prov.), *Phytodietus vulgaris* Cress., *Polistipaga fulva* (Cress.), *Polyblastus pedalis* (Cress.), *Priophorus morio* (Lep.), *Pristiphora bivittata* (Nort.), *P. erichsonii* (Htg.), *Pteromalus* sp., *Rogas stigmator* (Say), *Sigalphus bicolor* (Cress.), *Sceptrothelys deione* (Walk.), *Spilochalcis* sp., *Tetrastichus* sp., *Theronia atalantae fulvescens* Cress.

Pteromalus carus Walker, 1835. Ent. Mag. 2: 477. ♀, ♂.

Pteromalus decedens Walker, 1835. Ent. Mag. 2: 478. ♀, ♂.

Pteromalus perversus Walker, 1835. Ent. Mag. 2: 479. "♀" = ♂.

Pteromalus tenuis Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 195. ♂.

Pteromalus boucheanus Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 196. ♀.

Cleonymus clisiocampae Fitch, 1856 (1855). N. Y. State Agr. Soc., Trans. 15: 431. ♀, ♂.

Cheipachus nigro-cyanus Norton, 1869. Amer. Ent. Soc., Trans. 2: 327. ♀.

Pteromalus gelechiæ Webster, 1883. Ill. State Dept. Agr., Trans. (n. s.) 12: 151. ♀, ♂.

Pteromalus nematocida Packard, 1883. U. S. Dept. Agr., Ann. Rpt. for 1883, p. 146.

Pteromalus chionobae Howard, 1889. In Scudder, Butterflies of Eastern U. S. and Canada, pp. 1872, 1889. ♀.

- Arthrolytus apatela* Ashmead, 1893. Ohio Agr. Expt. Sta., Tech. Ser., Bul. 1: 162. ♀.
Arthrolytus pimplae Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 339. ♀, ♂.
Trichomalus trujilloi Blanchard, 1937. Rev. Chil. Hist. Nat. 41: 178. ♀.
- Taxonomy: Gahan, 1938. Ent. Soc. Wash., Proc. 40: 211 (syn.). —Gahan, 1942. U. S. Natl. Mus., Proc. 92: 45-46 (syn.). —Finlayson, 1960. Canad. Ent. 92: 20-47 (taxonomy of immature stages). —Boucek, 1965. Mus. Natl. Pragae, Acta Ent. 11: 30 (variation). —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 810-811 (syn; types; *Diplolepis microgastri* Bouche, 1834 (Naturgesch. der Ins., p. 168), types of which are presumed lost, might be the same as *cavus*).
- Biology: Howard, 1897. U. S. Dept. Agr., Div. Ent., Tech. Ser. 5: 7, 35-38, 49-52. —Fiske, 1903. N. H. Agr. Expt. Sta., Tech. Bul. 6: 182, 206-208, 213, 220, 224-227. —Brodie, 1909. Canad. Ent. 41: 8. —Smith, 1912. U. S. Dept. Agr., Tech. Ser. 19: 55, 62. —Smith, 1916. Jour. Econ. Ent. 9: 484. —Graf, 1917. U. S. Dept. Agr., Bul. 427: 33-36, 40-46. —Graham, 1918. Ent. Soc. Amer., Ann. 11: 175-182. —Middleton, 1923. U. S. Dept. Agr., Bul. 1182: 16-17. —Howard, 1925. Ent. News 36: 130. —Baldus, 1926. Ent. Soc. Amer., Ann. 19: 497. —Flanders, 1926. Pan-Pacific Ent. 3: 44. —Paddock, 1926. Amer. Bee Jour. 66: 555. —Muesebeck and Dohanian, 1927. U. S. Dept. Agr., Bul. 1487: 4, 12, 25-27. —Allen, 1932. Jour. Econ. Ent. 25: 362-365. —Garman and Brigham, 1933. Conn. Agr. Expt. Sta., Bul. 356: 77-78. —Hoffmann, 1936. Brooklyn Ent. Soc., Bul. 31: 211. —Marsh, 1936. Canad. Ent. 68: 215-216. —Marsh, 1937. Ecology 18: 108-111. —Morris *et al.*, 1937. Bul. Ent. Res. 28: 383, 390-391. —Cristobal, 1938. La Plata Univ., Lab. Zool. Agr., Bol. 4: 5. —Gontarski, 1939. Ztschr. f. Morph. u. Oekol. der Tiere 35: 203-220. —Haeussler, 1940. U. S. Dept. Agr., Tech. Bul. 728: 44, 53, 54. —Boyce, 1941. Ent. Soc. Ont., Ann. Rpt. 71: 41. —Lloyd, 1944. Sci. Agr. 24: 459, 462, 468. —Simmonds, 1944. Bul. Ent. Res. 35: 225. —Simmonds, 1944. Sci. Agr. 25: 1-30. —Wellington, 1945. Jour. Econ. Ent. 38: 396. —Clancy, 1946. Univ. Calif. Pubs., Ent. 7: 459. —Doutt and Finney, 1947. Jour. Econ. Ent. 40: 577. —Baker *et al.*, 1949. U. S. Dept. Agr., Tech. Bul. 983: 178. —Smith and Kido, 1949. Hilgardia 19: 50-51. —Craighead, 1950. U. S. Dept. Agr., Misc. Pub. 657: 615-616. —Flanders, 1954. Ecology 35: 248. —Harville, 1956. Microentomology 20: 116, 129, 137. —Reeks and Smith 1956. Canad. Ent. 88: 572-573. —Lyons, 1957. Canad. Ent. 89: 75. —Langston, 1957. Calif. Univ. Pubs., Ent. 14: 6-25. —Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 29-30, 89. —Baeva, 1959. Akad. Nauk. Tadz. SSR Inst. Zool. and Par., Trudy 119: 55, 69, 77. —Richter, 1960. Ent. Ztschr. 70: 115. —Wylie, 1960. Entomophaga 5: 120. —Bendel-Janssen, 1962. Ztschr. f. Pflanzenkrank. 9: 527. —Allen, 1962. U. S. Dept. Agr., Tech. Bul. 1265: 103-106. —Dixon and Benjamin, 1963. Jour. Econ. Ent. 56: 267. —Halstead, 1963. G. B. Pest Inf. Res. Bd., Rpt. for 1962, pp. 5-6. —Legner and Oatman, 1963. Jour. Econ. Ent. 56: 731. —Becker and Benjamin, 1964. Jour. Econ. Ent. 57: 356. —Tza, 1964. Acta Ent. Sinica 13: 689. —Mook and Haack, 1965. Arch. Neerland de Zool. 16: 302. —Kamenova, 1967. Zool. Zhur. 46: 1800. —Moiseenko, 1967. Minsk. Akad. Nauk BSSR, Dok. 15: 86-87.
- Morphology: Parker, 1924. Soc. Ent. de France, Ann. 93: 267, 290, 308 (larvae). —Morris *et al.*, 1937. Bul. Ent. Res. 28: 383-384 (larvae). —Finlayson, 1963. Canad. Ent. 95: 501 (immature stages).
- confusus** (Girault). N. B., Ont., D. C., Wis., Man., Sask., Alta., Idaho, B. C.; Europe. Host: *Megachile* sp.
Coelopisthia confusa Girault, 1916. Canad. Ent. 48: 246. ♀.
Dibrachys maculipennis Szelenyi, 1957. Inst. Prot. Pl. Hung., Ann. 8: 307. ♀, ♂.
- Taxonomy: Peck, 1969. Canad. Ent. 101: 418-422.
- daphne** Girault. Tex., Wash., Calif. Host: *Symphorobius barberi* (Banks), *S. californicus* Banks.
Dibrachys daphne Girault, 1917. Deser. Hym. Chalcidoid. Variorum cum Observ. III, p. 9. ♀.
- saltans** (Ratzeburg). Md., Va., N. Dak., Wash.; Europe. Host: *Cladius* sp.
Pteromalus saltans Ratzeburg, 1852. Ichn. d. Forstins., v. 3, p. 232. ♀, ♂.
Coelopisthoida cladiae Gahan, 1913. Canad. Ent. 45: 179. ♀, ♂.
- Taxonomy: Gahan, 1938. Ent. Soc. Wash., Proc. 40: 212 (syn.; Ratzeburg types examined in 1927). —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 809 (Ratzeburg type now destroyed, status of species questionable).

Genus DIBRACHOIDES Kurdjumov

Dibrachoides Kurdjumov, 1913. Ent. Obozr. 13: 2-3, 12.

Type-species: *Pteromalus dynastes* Foerster. Orig. desig.

Revision: Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 814-817 (Palearctic fauna).

dynastes (Foerster). Que. Neb., Wyo., Utah, Wash., Oreg., Calif; Europe. Introduced from Europe for biological control of the alfalfa weevil in 1911-1913: recovered in 1918. Host:

Hypera nigrostris (F.), *H. postica* (Gyll.), *H. rumicis* (L.).

Pteromalus dynastes Foerster, 1841. Beitr. Monog. Pteromalinen, p. 24. ♀.

Pteromalus transversus Foerster, 1841. Beitr. Monog. Pteromalinen, p. 18. ♀.

Pteromalus (Dibrachys) acutus Thomson, 1878. Hym. Scand., v. 5, p. 162. ♀, ♂.

Taxonomy: Graham, 1956. Ent. Monthly Mag. 92: 260 (*druso* Walker). —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 815-816 (use of *druso* for this species an error; syn.).

Biology: Rockwood, 1920. Canad. Ent. 52: 39. —Chamberlin, 1924. U. S. Dept. Agr., Cir. 301: 3-5. —Chamberlin, 1924. Jour. Econ. Ent. 17: 628. —Smith, 1930. Ent. Soc. Amer., Ann. 23: 577-593. —Chamberlin, 1933. Ent. Soc. Wash., Proc. 35: 106. —Essig and Michelbacher, 1933. Calif. Agr. Expt. Sta., Bul. 567: 70-71. —Kaufmann, 1939. Ztschr. f. Angew. Ent. 26: 425-426. —Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139: 50. —Fisher *et al.*, 1961. Jour. Econ. Ent. 54: 197. —Delucchi, 1962. Awamia 2: 124. —van den Bosch *et al.*, 1961. Calif. Agr. 15: 11. —Coles and Puttler, 1963. Jour. Econ. Ent. 56: 611. —Ismailov, 1967. Zashch. Rast. 12: 35.

Genus PARADIBRACHYS Girault

Paradibrachys Girault, 1917. Descr. Hym. Chacidoid. Variorum cum Observ. V, p. 1.

Type-species: *Paradibrachys guizoti* Girault. Orig. desig.

guizoti Girault. Calif.

Paradibrachys guizoti Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. V, p. 1. ♀.

Genus NEOCATOLACCUS Ashmead

Neocatolaccus Ashmead, 1904. Carnegie Mus., Mem. 1: 320, 322.

Type-species: *Catolaccus tylodermae* Ashmead. Orig. desig.

cratylus (Walker). Fla.

Pteromalus Cratylus Walker, 1847. Ann. and Mag. Nat. Hist. (1) 19: 392. ♀.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32: 155.

moneilemae Gahan. Tex. Host: *Moneilema ulkei* Horn.

Neocatolaccus moneilemae Gahan, 1936. U. S. Natl. Mus., Proc. 83: 484. ♀, ♂.

tylodermae (Ashmead). N. H., s. to Fla., w. to Mich., Ill., Kans., Ariz. Host: *Ampelogypter sesostris* (Lec.), *Cylindrocopturus longulus* (Lec.), *Lixus musculus* Say, *L. parvus* Lec., *L. scrobicollis* Boh., *Microlarinus lypriformis* (Woll.), *M. lareynii* (du V.), *Onychobaris subtonsa* Lec., *Trichobaris texana* Lec., *Tyloderma foveolatum* Say.

Catolaccus tylodermae Ashmead, 1893. Ohio Agr. Expt. Sta., Tech. Ser., Bul. 1: 161. ♀, ♂.

Biology: Wester, 1956. Ent. Soc. Wash., Proc. 58: 286. —Goeden and Ricker, 1970. Jour. Econ. Ent. 63: 827-831.

Genus HYOPTEROMALUS Ashmead

Hypopteromalus Ashmead, 1900. In Smith, Ins. of N.J., Sup., p. 559.

Type-species: *Pteromalus tabacum* Fitch. Monotypic.

inimicus Muesebeck. N. B., Que., Ont., s. to Va., w. to N. Dak. and Kans. Host: *Apanteles* sp., *A. lacteicolor* Vier., *A. melanoscelus* (Ratz.), *Hyposoter fugitivus* (Say).

Hypopteromalus inimicus Muesebeck, 1927. Jour. Agr. Res. 34: 332. ♀, ♂.

Biology: Muesebeck and Dohanian, 1927. U. S. Dept. Agr., Bul. 1487: 28. —Proper, 1934. Jour. Agr. Res. 48: 361. —Doner, 1936. Ent. Soc. Amer., Ann. 29: 226. —Raizenne, 1952. Canada

- Div. Forest Biol., Forest Lep. South. Ont. and Par., p. 258. — Hill and Hough, 1957. Va. Agr. Expt. Sta., Tech. Bul. 130: 16. — Dixon and Benjamin, 1963. Jour. Econ. Ent. 56: 267.
- percussor** Girault, Colo., N. Mex., Ariz., Nev., Wash., Oreg., Calif. Host: *Apanteles* sp., *A. polychrosidis* Vier., *A. smerinthi* Riley, *Bracon politiventris* (Cush.), *Diadegma eureka* (Ashm.), *D. pterophorae* (Ashm.), *Heterospilus atriceps* (Ashm.), *Hyposoter* sp., *Itoplectis quadricingulatus* (Prov.).
- Hypopteromalus percussor* Girault, 1917. Brooklyn Ent. Soc., Bul. 12: 118. ♀. Emend. to *persursor* by Essig, 1926 (Ins. West. No. Amer., p. 823).
- Biology: Waddell, 1952. Ent. Soc. Brit. Columbia, Proc. 48: 87-88.
- tabacum** (Fitch). N. B., Que., s. to Fla., w. to Minn., Iowa, Kans., Tex. Host: *Apanteles* sp., *A. congregatus* (Say), *A. melanoscelus* (Ratz.), *Microplitis ceratoniae* Riley. Often misdet. as *viridescens* Walsh, in old literature.
- Pteromalus Tabacum* Fitch, 1864. N. Y. State Agr. Soc., Trans. 23: 792. ♀.
- Taxonomy: Gahan, 1921 (1920). Ent. Soc. Wash., Proc. 22: 241.
- Biology: Webster, 1912. Iowa Acad. Sci., Proc. 19: 209-213 (*viridescens*). — Muesebeck and Dohanian, 1927. U. S. Dept. Agr., Bul. 1487: 12, 28. — Fulton, 1940. Ent. Soc. Amer., Ann. 32: 231-244. — Raizenne, 1952. Canada Div. Forest Biol., Forest Lep. South. Ont. and Par., p. 10. — Lawson, 1959. Ent. Soc. Amer., Ann. 52: 743.

Genus HETEROSCHEMA Gahan

- Heteroschema* Gahan, 1919. U. S. Natl. Mus., Proc. 55: 126.
- Type-species: *Heteroschema prima* Gahan. Monotypic.
- Taxonomy: Gahan, 1938. Ent. Soc. Wash., Proc. 40: 222-224.
- aeneiventris** (Ashmead). Kans.
- Sphegigaster aeneiventris* Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App. p. VI. ♂.
- punctata** (Ashmead). Fla., Miss., Mo., Ariz.; West Indies. Host: *Dioxyza piccicola* (Bigot), *Melanagromyza virens* (Loew).
- Glyphe punctata* Ashmead, 1894. Linn. Soc. London, Jour., Zool. 25: 162. ♀.
- rugosopunctata** (Ashmead). Tex., Ariz.; West Indies. Host: *Melanagromyza gibsoni* (Mall.).
- Pteromalus rugosopunctatus* Ashmead, 1894. Linn. Soc. London, Jour., Zool. 25: 165. ♀, ♂.
- Heteroschema prima* Gahan, 1919. U. S. Natl. Mus., Proc. 55: 126. ♀, ♂.
- Biology: Gahan, 1938. Ent. Soc. Wash., Proc. 40: 223.

Genus SCHIZONOTUS Ratzeburg

- Pteromalus* subg. *Schizonotus* Ratzeburg, 1852. Ichn. d. Forstins., v. 3, p. 230.
- Type-species: *Schizonotus sieboldi* Ratzeburg. Desig. by Ashmead, 1904.
- Revision: Boucek, 1958. Mus. Natl. Pragae, Acta Ent. 32: 395-404 (European spp.).
- Taxonomy: Masi, 1921. Genova, Mus. Civ. Stor. Nat., Ann. (3) 9: 236. — Graham, 1956. Ent. Monthly Mag. 92: 255. — Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 818.
- latus** (Walker). Maine, s. to Fla., w. to Minn., Wyo., Idaho; Europe. Host: *Chrysomela albicollis* Brown, *C. interrupta* (F.), *C. knabi* Brown, *C. scripta* (F.), *Plagiodera versicolora* (Laich.). Much of the literature published in North America used the name *sieboldi* Ratzeburg, a Palearctic species that apparently does not occur here.
- Pteromalus latus* Walker, 1835. Ent. Mag. 2: 481. ♀.
- Arthrolytus incongruens* Masi, 1907. Lab. Zool. Gen. e Agr. Portici, Bol. 1: 252. ♀, ♂.
- Coelopisthia smithii* Gahan, 1913. Canad. Ent. 45: 179.
- Biology: Cushman, 1918 (1917). Ent. Soc. Wash., Proc. 19: 128. — Dowden, 1939. Jour. Agr. Res. 58: 581-592. — Craighead, 1950. U. S. Dept. Agr., Misc. Pub. 657: 616.
- rotundiventris** (Girault). N. J., Md., Va. Host: *Plagiodera versicolora* (Laich.).
- Coelopisthia rotundiventris* Girault, 1917 (1916). Insecutor Inscitae Menstruus 4: 113. ♀.

Genus COELOPISTHIA Foerster

Coelopisthia Foerster, 1856. Hym. Stud., v. 2, p. 65. No species.

Type-species: *Pteromalus cephalotes* Walker. Desig. by Ashmead, 1904.

Pteromalus subg. *Coelopisthus* Thomson, 1878. Hym. Scand., v. 5, p. 162. Emend.

Kranophorus Graham, 1956. Ent. Monthly Mag. 92: 257. N. name, unnecessarily proposed.

Type-species: *Pteromalus extensus* Walker. Orig. desig.

Taxonomy: Graham, 1956. Ent. Monthly Mag. 92: 257 (Ashmead's designation of *cephalotes* as type-species of *Coelopisthia* based on a misidentification of that species by Thomson). —Peck, 1963. Canad. Ent., Sup. 30: 665 (use of *Coelopisthia* in conventional sense should be retained and the matter referred to the Internatl. Comm.).

bicarinata Girault. N. H., Md., D. C., Ind. Ecology: Emerges from nest of *Vespula* sp.

Coelopisthia bicarinata Girault, 1916. Soc. Ent. 31: 57. ♀, ♂.

forbesii (Dalla Torre). N. Y., N. J., Ill., La. Host: *Apantesis uais* (Drury), *Catocala* sp.

Pteromalus pallipes Forbes, 1885. Ill. State Dept. Agr., Trans. 22: App., pp. 46, 49. Preocc. by Spinola, 1808.

Pteromalus Forbesii Dalla Torre, 1898. Cat. Hym., v. 5, p. 125. N. name.

Taxonomy: Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 145-146.

fumosipennis Gahan. Md. Ecology: Emerges from lepidopterous pupa.

Coelopisthia fumosipennis Gahan, 1909. Canad. Ent. 41: 431. ♀.

intermedia Girault. D. C.

Coelopisthia intermedia Girault, 1916. Soc. Ent. 31: 57. ♀.

suborbicularis (Provancher). Que., N. H., Md., Ill.

Semiotellus suborbicularis Provancher, 1881. Nat. Canad. 12: 296. ♀.

Taxonomy: Burks, 1964 (1963). Canad. Ent. 95: 1262.

Biology: Fiske, 1903. N. H. Agr. Expt. Sta., Tech. Bul. 6: 182, 197, 228. —McAtee, 1927. Ent. Soc. Wash., Proc. 29: 182. —Langston, 1957. Calif. Univ. Pubs., Ent. 14: 37, 40.

Genus MUSCIDIFURAX Girault and Sanders

Muscidifurax Girault and Sanders, 1910. Psyche 17: 146.

Type-species: *Muscidifurax raptor* Girault and Sanders. Orig. desig.

Muscdivorax Kurdjumov, 1913. Ent. Obozr. 13: 5. Misspelling.

Revision: Kogan ad Legner, 1970. Canad. Ent. 102: 1268-1290.

raptor Girault and Sanders. Md., s. to Fla., w. to Calif.; cosmopolitan. Host: *Cochliomyia macellaria* (F.), *Fannia canicularis* (L.), *Musca domestica* L., *Phormia regina* (Meig.), *Stomoxys calcitrans* (L.).

Muscidifurax raptor Girault and Sanders, 1910. Psyche 17: 145. ♀, ♂.

Biology: Crandall, 1939. Ent. Soc. Amer., Ann. 32: 652. —DeBach and Smith, 1941. Jour. Econ. Ent. 34: 741-745. —DeBach, 1943. Pan-Pacific Ent. 19: 112-118. —Legner *et al.*, 1965. Puerto Rico Univ., Jour. Agr. 49: 372. —Wylie, 1967. Canad. Ent. 99: 742-748. —Legner, 1969. Ent. Soc. Amer., Ann. 62: 382-385. —Sharma, 1971. Madras Agr. Jour. 58: 442. —Wylie, 1971. Canad. Ent. 103: 1537-1544. —Chabora and Chabora, 1971. Ent. Soc. Amer., Ann. 64: 558-562. —Legner, 1972. Ent. Soc. Amer., Ann. 65: 254-263.

Morphology: Sanger and King, 1971. Entomologist 104: 137-149 (male genitalia).

zaraptor Kogan and Legner. Kans., N. Mex., Utah, Ariz., Calif. Host: *Musca domestica* Linn.

Muscidifurax zaraptor Kogan and Legner, 1970. Canad. Ent. 102: 1279-1285. ♀, ♂.

Biology: Wylie, 1971. Canad. Ent. 103: 1537-1544 (oviposition).

Genus LARIOPHAGUS Crawford

Lariophagus Crawford, 1909. Ent. Soc. Wash., Proc. 11: 52.

Type-species: *Lariophagus texanus* Crawford. Monotypic.

Revision: Gahan, 1927. U. S. Natl. Mus., Proc. 71 (4): 7.

- Taxonomy: Kurdjumov, 1913. Ent. Obozr. 13: 15-16. —Graham, 1957. Ent. Monthly Mag. 93: 217. —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 823.
- distinguendus** (Foerster). Ont., s. to Fla., w. to B. C. and Calif.; Cosmopolitan. Ecology: Almost always taken as a parasite of Coleoptera infesting stored products, but occasionally collected in open country, usually in the Tropics. Host: *Bruchus brachialis* Fahr., *Lasioderma serricorne* (F.), *Rhyzopertha dominica* (F.), *Stegobium paniceum* (L.), *Sitophilus granarius* (L.), *S. oryzae* (L.), *S. zeamaize* Mots.
- Pteromalus distinguendus* Foerster, 1840. Beitr. Monog. Pteromalinen, p. 17. ♂.
- Pteromalus Calamis* Walker 1849. Ann. and Mag. Nat. Hist. (2) 3: 207. ♀, ♂.
- Pteromalus oryzinus* Rondani, 1874. Soc. Ent. Ital., Bol. 6: 131.
- Meraporus utilis* Tucker, 1910. Canad. Ent. 42: 341. ♀.
- Taxonomy: Gahan, 1921 (1920). Ent. Soc. Wash., Proc. 22: 239 (syn.). —Waterston, 1921. Roy. Soc., Rept. Grain Pests Com. 9: 9, 13-15 (syn.). —Ruschka, 1921. Ztschr. f. Angew. Ent. 7: 463-465 (syn.). —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 824 (syn.).
- Biology: Hase, 1920 (1919). Gesell. f. Naturf. Freunde, Sitzber., pp. 402-432. —Nakayama, 1931. Agr. Expt. Sta., Chosen, Jour. 18: 65. —Smirov and Polejaev, 1937. Zool. Zhur 16: 999-1012. —Pechuman, 1937. Jour. Econ. Ent. 30: 563. —Bare, 1942. Jour. Econ. Ent. 35: 185. —McNay, 1954. Ent. Soc. Ont., Ann. Rpt. 84: 149. —Kashef, 1956 (1955). Soc. Ent. de France, Ann. 124: 58-88. —Kashef, 1959. Soc. Ent. Egypte, Bul. 43: 171. —Kashef, 1961. Ztschr. f. Parasitenk. 21 65-70. —Kashef, 1964. Behaviour 23: 31-42. —Gonen and Kugler, 1970. Israel Jour. Ent. 5: 133-140. —Van den Assem, 1971. Arch. Neerland Zool. 21 372-402.
- Morphology: Kashef, 1954. Soc. Ent. de France, Bul. 59: 93-96 (immature stages).
- dryorhizoxeni** (Ashmead). Pa., Fla. Ecology: Emerges from root gall on live oak formed by *Belonocnema* (= *Dryorhizoxenus*) *treatae* Mayr.
- Macroglenes dryorhizoxeni* Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 133. ♀.
- Taxonomy: Gahan, 1951. Canad. Ent. 83: 175.
- texanus** Crawford. S. C., Ga., Miss., Tex., Ariz., Calif.; Hawaii. Host: *Algarobius prosopis* (Lec.), *Anthonomus grandis* Boh., *Callosobruchus maculatus* (F.), *Mimosastes sallaei* (Sharp).
- Lariophagus texanus* Crawford, 1909. Ent. Soc. Wash. Proc. 11: 51. ♀, ♂.
- Biology: Pierce *et al.*, 1912. U. S. Dept. Agr., Bur. Ent. Bul. 100: 42, 52-62. —Bissell, 1940. Jour. Econ. Ent. 33: 845. —Hinckley, 1960. Hawaii. Ent. Soc., Proc. 17: 267. —Hinckley, 1961. Ecology 42: 529.

Genus SYSTELLOGASTER Gahan

- Systellogaster* Gahan, 1917. U. S. Natl. Mus., Proc. 53: 209.
- Type-species: *Systellogaster ovivora* Gahan. Orig. desig.
- ovivora** Gahan. Que., Pa., Ohio, Md., Ill., Okla. Host: *Blatta orientalis* L., *Parcoblatta pennsylvanica* (DeG.).
- Systellogaster ovivora* Gahan, 1917. U. S. Natl. Mus., Proc. 53: 209. ♀, ♂.
- Biology: Edmunds, 1953. Ent. News 64: 228-230. —Judd, 1955. Canad. Ent. 87: 98-99. —Roth and Willis, 1960. Smithsn. Misc. Coll. 141: 248.

Genus TRIMEROMICRUS Gahan

- Trimeromicrus* Gahan, 1914. U. S. Natl. Mus., Proc. 48: 161.
- Type-species: *Trimeromicrus maculatus* Gahan. Orig. desig.
- maculatus** Gahan. Ill., Mo., S. Dak., Nebr., Kans., Okla., Tex., N. Mex., Idaho, Utah, Ariz., Wash., Oreg., Calif.; Mexico. Host: *Ceutorhynchus assimilis* (Payk.), *Smicronyx fulvus* (Lec.); *Asphondylia websteri* Felt; *Bruchophagus* sp.
- Trimeromicrus maculatus* Gahan, 1914. U. S. Natl. Mus., Proc. 48: 162. ♀, ♂.
- Biology: Gahan, 1919. Ent. Soc. Amer., Ann. 12: 165-166. —Urbahns, 1919. Jour. Agr. Res. 16: 172-173. —Urbahns, 1920. U. S. Dept. Agr., Bul. 812: 18. —McLeod, 1953. Ent. Soc. Brit.

Columbia, Proc. 49: 14-16. —Walz, 1957. Ent. Soc. Amer., Ann. 50: 220. —Neunzig and Gyrisco, 1959. Jour. Econ. Ent. 52: 899-901. —Carillo and Dickason, 1963. Oreg. State Agr. Expt. Sta., Tech. Bul. 68: 25, 31.

Genus ZATROPIS Crawford

Zatropis Crawford, 1908. Ent. Soc. Wash., Proc. 9: 159.

Type-species: *Zatropis catalpae* Crawford. Monotypic.

Revision: Crawford, 1921. Ent. Soc. Wash., Proc. 23: 171-172.

Taxonomy: Burks, 1955. Ent. Soc. Wash., Proc. 57: 37.

albiclavus (Girault). N.Y., Md., Ohio, Mich., Wis., Idaho, Utah, Ariz. Host: *Asphondylia* sp., *Dasineura gleditchiae* (O. S.).

Eurydinoteloidea albiclavus Girault, 1917. Chalcidoidea Nova Marilandensis III, p. 5. ♀.

Taxonomy: Burks, 1955. Ent. Soc. Wash., Proc. 57: 37.

capitis Burks. Utah, Nev., Oreg., Calif.

Zatropis capitis Burks, 1955. Ent. Soc. Wash., Proc. 57: 35. ♀, ♂.

catalpae Crawford. N. Y., w. to Ill. and Minn. Host: *Contarinia johnsoni* Felt., *Dasineura gleditchiae* (O. S.), *Hyperdiplosis phlox* Greene. Rearing records for this species published before 1950 cite *Diplosis catalpae* Comstock as host, but that is a cecidomyiid that is now considered to be unplaced.

Zatropis catalpae Crawford, 1908 (1907). Ent. Soc. Wash., Proc. 9: 159. ♀, ♂.

Biology: Gossard, 1908. Ohio Agr. Expt. Sta., Bul. 197: 12.—Quaintance and Shear, 1921. U. S. Dept. Agr., Farmers' Bul. 1220: 11. —Neiswander, 1962. Ohio Agr. Expt. Sta., Res. Bul. 915: 16.

chalcis Burks. S. C., Fla. Host: *Anthonomus grandis* Boh., *A. thurberiae* Pierce.

Zatropis chalcis Burks, 1955. Ent. Soc. Wash., Proc. 57: 34. ♀, ♂.

coeliodis (Ashmead). Conn., N. J., Va., Ga. Host: *Acanthoscelis acephalus* (Say), *Chalcodermus inaequicollis* Horn.

Catolaccus coeliodis Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 226. ♀, ♂.

dymnus (Walker). Fla.

Pteromalus Dymnus Walker, 1847. Ann. and Mag. Nat. Hist. (1) 19: 397. ♀.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32: 157.

hermeas (Walker). Fla.

Pteromalus Hermeas Walker, 1847. Ann. and Mag. Nat. Hist. (1) 19: 394. ♀.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32: 159.

incertus (Ashmead). N. Y., s. to Fla., w. to Colo., N. Mex., Ariz., Mexico, Cent. Amer., W. I.

Host: *Acanthoscelides horni* (Pic), *A. submuticus* (Sharp), *Anthonomus aeneolus* Dietz, *A. albopilosus* Dietz, *A. aphanostephi* Pierce, *A. disjunctus* Lec., *A. eugenii* Cano, *A. fulvus* Lec., *A. grandis* Boh., *A. nigrinus* Boh., *A. signatus* Say, *Apion* sp., *A. crassum* Fall, *A. decoloratum* Smith, *A. griseum* Smith, *A. nigrum* Smith, *Auleutes tenuipes* Lec., *Baris cuneipennis* Casey, *Bruchus brachialis* Fahr., *Ceutorhynchus* sp., *Chalcodermus aeneus* Boh., *C. inaequicollis* Horn., *Rhynchaenus pallicornis* (Say), *Sitophilus oryzae* (L.), *Smicraulax tuberculatus* Pierce, *Smicronyx fulvus* (Lec.), *Tachypterellus concors cerasi* List, *T. quadrigibbus* (Say), *Zygobaris xanthoxyli* Pierce. *Catolaccus incertus* Ashmead, 1893. In Chittenden, U. S. Dept. Agr., Insect Life 5: 186. ♀, ♂.

Biology: Pierce, 1908. U. S. Dept. Agr., Bur. Ent. Bul. 73: 25-48. —Pierce *et al.*, 1912. U. S. Dept. Agr., Bur. Ent. Bul. 100: 51-67, 91-92. —Pierce and Cushman, 1915. Ent. Soc. Wash., Proc. 17: 165-166. —Tucker, 1922. Kans. Acad. Sci., Trans. 30: 144. —Fenton and Dunham, 1929. U. S. Dept. Agr., Tech. Bul. 112: 66. —List, 1932. Colo. Agr. Expt. Sta., Bul. 385: 63-64. —Balduf, 1959. Ill. Biol. Monog. 26: 146.

Morphology: Snodgrass, 1910. U. S. Natl. Mus., Proc. 39: 65.

- nigroaeneus** (Ashmead). Conn., Va., Fla., Mo., Nebr. Ecology: Emerges from galls made by Lepidoptera, Diptera or Coleoptera.
Catolaccus nigroaeneus Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 338. ♀, ♂.
 Biology: Brandhorst, 1943. Kans. Acad. Sci., Trans. 46: 169.
- orontas** (Walker). Fla., Ill., Iowa. Kans. Host: *Acanthoscelides horni* (Pic), *A. submuticus* (Sharp).
Pteromalus Orontas Walker, 1847. Ann. and Mag. Nat. Hist. (1) 19: 396. ♀.
Meraporus bruchivorus Ashmead, 1893. Ohio Agr. Expt. Sta., Tech. Ser., Bul. 1: 161. ♀, ♂.
 Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32: 160 (syn.; lectotypes designated for *orontas* and *bruchivorus*).
- perdubius** (Girault). Mass., N. Y., N. J., D. C., Ohio, Ill., Minn. Host: *Anthonomus grandis* Boh., *A. musculus* (Say), *A. uubiloides* Fall, *A. signatus* (Say), *Smicronyx tychoides* Lec.
Catolaccus perdubius Girault, 1916. Canad. Ent. 48: 114. ♀, ♂.
 Biology: Cross and McGovern, 1969. Ent. Soc. Amer., Ann. 62: 674.
- rosaecolis** Burks. Wis., Ill., Minn., Mo., Nebr. Host: *Rhyrchites bicolor* (F.).
Zatropis rosaecolis Burks, 1955. Ent. Soc. Wash., Proc. 57: 32. ♀, ♂.
 Biology: Balduf, 1959. Ill. Biol. Monog. 26: 120-121.
- timaea** (Walker). Fla.
Pteromalus Timaea Walker, 1847. Ann. and Mag. Nat. Hist. (1) 19: 396. ♀.
 Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32: 161.
- tortricidis** Crawford. Pa., Fla., Wis., Calif.; Hawaii. Host: *Etiella zinckenella* (Treit.), *Polychrosis viteana* (Clem.).
Zatropis tortricidis Crawford, 1921. Ent. Soc. Wash., Proc. 23: 172. ♀, ♂.
 Biology: Flanders, 1930. Calif. Dept. Agr., Monthly Bul. 19: 418. —Bianchi, 1940. Hawaii. Ent. Soc., Proc. 10: 380.

Genus HEMITRICHUS Thomson

- Dimachus* subg. *Hemitrichus* Thomson, 1878. Hym. Scand., v. 5, pp. 50, 54.
 Type-species: *Dimachus (Hemitrichus) rufipes* Thomson. Monotypic.
- Uriella* Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 221.
 Type-species: *Uriella rufipes* Ashmead. Orig. desig.
- Taxonomy: Gahan and Wallace, 1950. Ent. News 61: 97 (syn.).
- seniculus** (Nees). Que., s. to Fla., w. to Mich. and Kans.; Europe. Ecology: Reared from unknown beetle feeding in dog food or rat dung; often found in museums and other public buildings.
Pteromalus seniculus Nees, 1834. Hym. Ichn. Aff. Monog., v. 2, pp. 101, 423. ♀.
Pteromalus Phylacis Walker, 1848. List Hym. Brit. Mus., Chalcid., v. 2, pp. 124, 185. ♂.
Dimachus (Hemitrichus) rufipes Thomson, 1878. Hym. Scand., v. 5, p. 54. ♀.
Uriella rufipes Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 222. ♀, ♂.
Hemitrichus assimilis Masi, 1922. Soc. Ent. Ital., Bol. 54: 158. ♀.
- Taxonomy: Delucchi, 1955. Univ. Lund, Acta (2) 50: 173 (syn.). —Graham, 1969. Brit. Mus. (Nat. Hist.) Ent., Bul. Sup. 16: 827 (syn.).
- Biology: Kuitert, 1949. Fla. Ent. 32: 178 (*rufipes*).

Genus METASTENUS Walker

- Metastenus* Walker, 1834. Ent. Mag. 2: 301.
 Type-species: *Metastenus coucinnus* Walker. Monotypic.
- Scymnophagus* Ashmead, 1904. Carnegie Mus., Mem. 1: 319, 321.
 Type-species: *Scymnophagus townsendi* Ashmead. Orig. desig.
- Taxonomy: Graham, 1956. Ent. Monthly Mag. 92: 256 (syn.).
- coeruleus** Ashmead. Kans. Generic placement of this sp. may be wrong, but the type is lost.
Metastenus coeruleus Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App. p. VI. ♀.

townsendi (Ashmead). Va., N.C., S.C., Ga., Ind., Ill., Wis., Mont., Wash., Oreg., Calif.; Mexico, West Indies, Japan. Host: *Azya trinitatis* Marsh., *Cryptognatha nodiceps* Marsh., *C. simillima* Sicard, *Hyperaspis lateralis* Muls., *Pentilia insidiosa* Muls., *Scymnus* sp., *S. guttulus* Lec.

Scymnophagus townsendi Ashmead, 1904. Carnegie Mus., Mem. 1: 319. ♀, ♂.

Xenocrepis mexicana Girault, 1916. Ent. News 27: 227. ♀, ♂.

Tripolycystus cryptognathae Girault, 1920. U. S. Natl. Mus., Proc. 58: 211. ♀, ♂.

Taxonomy: Gahan and Peck, 1946. Wash. Acad. Sci., Jour. 36: 316 (types of *townsendi* and *mexicana* the same specimens). —Burks, 1954. U. S. Dept. Agr., Tech. Bul. 1093: 13 (syn.). —Delucchi, 1954. Bul. Ent. Res. 45: 265. —Graham, 1956. Ent. Monthly Mag. 92: 256 (generic placement).

Family EURYTOMIDAE

By B. D. BURKS

Although phytophagous chalcidoids are to be found scattered among several families, there is a higher proportion of phytophagous species in the Eurytomidae than in any other chalcidoid family. Many of the eurytomids develop in seeds, and others are gall formers. Many others, however, are parasites and some are both parasitic and phytophagous in their development. These latter begin development as parasites and then complete it as phytophagous feeders. Malyshev, 1968 (Genesis of the Hymenoptera, English translation, London, pp. 35, 53, 67), considers the Eurytomidae the most primitive family of the Chalcidoidea, and he discusses types of larval development in this family. There are very few other workers in Hymenoptera that agree with Malyshev that the Eurytomidae is the most primitive family of the Chalcidoidea; the prevailing opinion, based on both habits and morphology, is that the Torymidae is the most primitive.

Revision: Burks, 1971. Amer. Ent. Soc., Trans. 97: 1-89 (World genera).

Taxonomy: Bugbee, 1936. Ent. Amer. (n. s.) 16: 169-222 (phylogeny). —Ferriere, 1950.

Schweiz. Ent. Gesell., Mitt. 23: 378-379 (European fauna). —Claridge, 1961. Soc. Brit. Ent.,

Trans. 14: 170-183 (British fauna). —Graham, 1970. Roy. Ent. Soc. London, Proc., Ser. B:

Taxonomy 39: 139-152 (Palearctic fauna).

SUBFAMILY RILEYINAE

Genus MACRORILEYA Ashmead

Macrorileya Ashmead, 1900. In Smith, N.J. State Bd. Agr., Ann. Rpt. 27 (Sup.): 555.

Type-species: *Rileya oecanthi* Ashmead. Monotypic.

oecanthi (Ashmead). N. J., Va., N. C., Ill., Nebr., Idaho, Ariz., Calif. Ecology: Parasitizes eggs of tree crickets. Host: *Oecanthus* sp., *O. californicus* Sauss., *O. latipennis* Riley, *O. nigricornis* Walk., *O. quadripunctatus* Beut., *O. niveus* (Deg.).

Rileya oecanthi Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 321. ♀, ♂.

Biology: Smith, 1916. Jour. Econ. Ent. 9: 479. —Smith, 1930. Univ. Calif. Pubs., Ent. 5: 165-172. —Smith, 1931 (1930). Calif. Agr. Expt. Sta., Bul. 505: 11-12. —Udine and

Pinckney, 1940. Pa. State Acad. Sci., Proc. 14: 81-84.

Genus RILEYA Ashmead

Rileya Ashmead, 1888 (June). Ent. Amer. 4: 42. No species.

Type-species: *Rileya cecidomyiae* Ashmead. Included by Ashmead, 1888 (July).

Kans. Agr. Expt. Sta., Bul. 3, App. p. III.

Ashmeadia Howard, 1889. Canad. Ent. 21: 59. N. name for *Rileya* Ashmead, thought to be preoccupied by *Rileya* Ashmead, 1888 (July).

Xenopelte Cameron, 1913. Timehri 3: 126.

Type-species: *Xenopelte couridae* Cameron. Monotypic.

Tragiicola Brethes, 1918. Soc. Ent. de France, Bul. (1918): 83.

Type-species: *Tragiicola haumani* Brethes. Monotypic.

- Revision: Gahan, 1918. Ent. Soc. Wash., Proc. 20: 136-150.
- americana** Girault. Mo. Ecology: Reared from midge galls in flower heads of *Helenium*. Host: *Asphondylia autumnalis* Beut.
- Rileya americana* Girault, 1916. Canad. Ent. 48: 339. ♀.
- cecidomyiae** Ashmead. Conn., N. J., Md., N. C., Fla., Ill., Kans., Tex., N. Mex., Idaho, Ariz.
- Ecology: Reared from stem galls. Host: *Asphondylia* sp., *A. ilicicola* Foote, *Dasyneura* sp.
- Rileya cecidomyiae* Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App. p. III. ♀, ♂.
- Rileya regularis* Gahan, 1918. Ent. Soc. Wash., Proc. 20: 147. ♀, ♂.
- Taxonomy: Burks, 1967. U. S. Dept. Agr., Agr. Monog. 2, Sup. 2: 271 (synonymy).
- Biology: Highland, 1964. Jour. Econ. Ent. 57: 83.
- compressiventris** Gahan. Tex. Ecology: Reared from leaf galls on leguminous trees, prob. *Mimosa* or *Leucaena*. Host: *Asphondylia* sp.
- Rileya compressiventris* Gahan, 1918. Ent. Soc. Wash., Proc. 20: 143. ♀, ♂.
- hegeli** Girault. Fla.
- Rileya hegeli* Girault, 1916. Canad. Ent. 48: 340. ♀.
- heterogaster** Gahan. Tex. Ecology: Reared from leaf-axil galls on leguminous trees, prob. *Mimosa* or *Leucaena*. Host: *Asphondylia* sp.
- Rileya heterogaster* Gahan, 1918. Ent. Soc. Wash., Proc. 20: 141. ♀, ♂.
- Morphology: Bugbee, 1936. Ent. Amer. (n. s.) 16: 179.
- mellea** Ashmead. Fla. Ecology: Reared from leaf galls on *Eugenia*.
- Rileya mellea* Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 321. ♀.
- opuntiae** Gahan. Tex. Ecology: Reared from galls on cactus. Host: *Asphondylia opuntiae* Felt.
- Rileya opuntiae* Gahan, 1936. U. S. Natl. Mus., Proc. 83: 482. ♀.
- piercei** Grawford. Fla., Ariz.
- Rileya piercei* Crawford, 1914. Ent. Soc. Wash., Proc. 16: 29. ♂.
- similaris** Gahan. Tex. Ecology: Reared from galls on leguminous trees, prob. *Mimosa* or *Leucaena*. Host: *Asphondylia* sp.
- Rileya similaris* Gahan, 1918. Ent. Soc. Wash., Proc. 20: 148. ♀, ♂.

SUBFAMILY HARMOLITINAE

Genus HARMOLITA Motschulsky

- Isosoma* Walker, 1832. Ent. Mag. 1: 13-14. Preocc. by Billberg, 1820.
- Type-species: *Eurytoma longula* Dalman. Desig. by Westwood, 1840.
- Harmolita* Motschulsky, 1863. Soc. Imp. Nat. Moscou, Bul. 36: 58.
- Type-species: *Harmolita longicornis* Motschulsky. Monotypic.
- Philachyra* Walker, 1871. Notes on Chalcid., p. 7.
- Type-species: *Philachyra ips* Walker. Monotypic.
- Xanthosoma* Ashmead, 1888. Ent. Amer. 4: 42-43. No species. — Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 320. One species.
- Type-species: *Xanthosoma nigricornis* Ashmead. Desig. by Ashmead, 1894.
- Isosomocharis* Ashmead, 1888. Ent. Amer. 4: 42-43. No species. — Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 331. One species.
- Type-species: *Isosomocharis sulcata* Ashmead. Desig. by Ashmead, 1894.
- Harmolyta* Dalla Torre, 1898. Cat. Hym., v. 5, p. 154. Emend.
- Urios* Girault, 1911. N. Y. Ent. Soc., Jour. 19: 175.
- Type-species: *Urios vestali* Girault. Orig. desig.
- Exanthosoma* Girault, 1915. Queensland Mus., Mem. 4: 265.
- Type-species: *Exanthosoma funeralis* Girault. Monotypic.
- Isthmosoma* Hedicke, 1921. Arch. f. Naturgesch. 86, A, 11: 165. N. name for *Isosoma* Walker.
- Ahtola* Claridge, 1961. Soc. Brit. Ent., Trans. 14: 174.
- Type-species: *Isosoma atrum* Walker. Orig. desig.

The members of this genus are commonly called jointworms. The larvae make galls in the stems of cereal grains and grasses.

Revision: Phillips and Emery, 1919. U. S. Natl. Mus., Proc. 55: 433-471 (Nearctic spp.).

—Hedicke, 1921. Arch. f. Naturgesch. 86, A, 11: 1-167 (Palearctic spp.). —Phillips, 1936. U. S. Dept. Agr., Tech. Bul. 518: 1-25 (Nearctic spp.).

Taxonomy: Gahan, 1922. U. S. Natl. Mus., Proc. 61 (24): 7-8 (generic characters). —Gahan, 1922. Ent. Soc. Wash., Proc. 24: 33-58 (world host data). —Gahan, 1957. Brooklyn Ent. Soc., Bul. 52: 82-83 (*Harmolita* type-species). —Claridge, 1958. Ent. Monthly Mag. 94: 81-85 (*Tetramesa*). —Claridge, 1961. Roy. Ent. Soc. London, Trans. 113: 175-216 (Holarctic spp.). —Burks, 1971. Amer. Ent. Soc., Trans. 97: 51-54, 82-86.

agropyrocola Phillips and Emery. N. Dak., Utah. Host: *Agropyron* spp.

Harmolita agropyrocola Phillips and Emery, 1919. U. S. Natl. Mus., Proc. 55: 458. ♀.

agrostidis (Howard). Calif. Host: *Agrostis* sp.

Isosoma agrostidis Howard, 1896. U. S. Dept. Agr., Div. Ent., Tech. Ser. 2: 12. ♀.

ainsliei Phillips. S. Dak. Host: *Elymus* sp.

Harmolita ainsliei Phillips, 1936. U. S. Dept. Agr., Tech. Bul. 518: 4, 10. ♀, ♂.

albomaculata (Ashmead). N. H., Vt., s. to Va., w. to N. Dak., Nebr., Kans.; Europe, Asia. Host: *Phleum pratense*.

Isosoma albomaculatum Ashmead, 1894. Amer. Ent. Soc. Trans. 21: 329. ♀, ♂.

Taxonomy: Claridge, 1961. Roy. Ent. Soc. London, Trans. 113: 211.

Biology: Phillips, 1920. U. S. Dept. Agr., Bul. 808: 15-16. —Phillips and Poos, 1921. Jour. Agr. Res. 21: 421. —Phillips and Poos, 1927. Jour. Agr. Res. 34: 475, 483.

bambusae Phillips. Ga., Ala.; S. Russia, China, Japan. Host: Bamboo. Grasses of the tribe Bambuseae.

Harmolita bambusae Phillips, 1936. U. S. Dept. Agr., Tech. Bul. 518: 20. ♀.

Biology: Agekian, 1966. Zool. Zhur. 45: 1724.

bromicola (Howard). Conn., Calif. Host: *Bromus ciliatus*.

Isosoma bromicola Howard, 1896. U. S. Dept. Agr., Div. Ent., Tech. Ser. 2: 17. ♀, ♂.

californica (Howard). Calif. Ecology: Develops in the stems of wild grasses.

Isosoma californicum Howard, 1896. U. S. Dept. Agr., Div. Ent., Tech. Ser. 2: 10. ♀, ♂.

captiva (Lintner). N. Y., Ind., Ill. Said to have been reared from wheat.

Isosoma captivum Lintner, 1888. N. Y. State Mus., Nat. Hist., Rpt. 41: 34. ♀, ♂.

Taxonomy: Phillips, 1920. U. S. Dept. Agr., Bul. 808: 16.

cinnæ Phillips and Poos. Ohio. Host: *Cinna arundinacea*.

Harmolita cinnæ Phillips and Poos, 1922. Kans. Univ., Sci. Bul. 14: 352. ♀, ♂.

comatae Phillips. N. Dak. Host: *Stipa comata*.

Harmolita comatae Phillips, 1936. U. S. Dept. Agr., Tech. Bul. 518: 9. ♀.

cornuta (Walker). N. Y., Pa., Va., Ohio, Mich., Ind., Kans.; Europe. Host: *Agropyron repens*.

Isosoma cornutum Walker, 1832. Ent. Mag. 1: 19. ♂.

Harmolita agropyrophila Phillips and Emery, 1919. U. S. Natl. Mus., Proc. 55: 450. ♂, ♀.

Taxonomy: Claridge, 1961. Roy. Ent. Soc. London, Trans. 113: 212 (syn.).

Biology: Phillips, 1920. U. S. Dept. Agr., Bul. 808: 20 (*agropyrophila*).

dakota Phillips. N. Dak. Host: *Elymus*.

Harmolita dakota Phillips, 1936. U. S. Dept. Agr., Tech. Bul. 518: 14. ♀, ♂.

danthoniae Phillips. Mich. Host: *Danthonia spicata*.

Harmolita danthoniae Phillips, 1936. U. S. Dept. Agr., Tech. Bul. 518: 18. ♀.

elymi (French). Maine, s. to Fla., w. to Wash., Oreg., Calif. Host: *Elymus canadensis*, *E. glaucus*, *E. virginicus*.

Isosoma Elymi French, 1882. Canad. Ent. 14: 10. ♀.

Biology: Phillips, 1920. U. S. Dept. Agr., Bul. 808: 20. —Phillips and Poos, 1927. Jour. Agr. Res. 34: 475.

- elymicola** Phillips and Emery. N. Y., Va., Ohio, Mich., Ill., Mo. Host: *Elymus* spp.
Harmolita elymicola Phillips and Emery, 1919. U. S. Natl. Mus., Proc. 55: 460. ♀, ♂.
 Biology: Phillips, 1920. U. S. Dept. Agr., Bul. 808: 21. —Phillips and Poos, 1921. Jour. Agr. Res. 21: 409, 416, 421.
- elymivora** Phillips and Emery. Va., Ohio, Ind., Ill., Ark., Kans. Host: *Elymus* spp.
Harmolita elymivora Phillips and Emery, 1919. U. S. Natl. Mus., Proc. 55: 464. ♀, ♂.
 Biology: Phillips, 1920. U. S. Dept. Agr., Bul. 808: 21. —Phillips and Poos, 1921. Jour. Agr. Res. 21: 421.
- elymophaga** Phillips and Emery. Wash., Calif. Host: *Elymus condensatus*, *E. triticoides*.
Harmolita elymophaga Phillips, 1927. Ent. Soc. Wash., Proc. 29: 127. ♀, ♂.
- elymophila** Phillips and Emery. Calif. Host: *Elymus* spp.
Harmolita elymophila Phillips and Emery, 1919. U. S. Natl. Mus., Proc. 55: 462. ♀, ♂.
- elymophthora** Phillips and Emery. N. Dak., Nebr. Host: *Elymus* spp.
Harmolita elymophthora Phillips and Emery, 1919. U. S. Natl. Mus., Proc. 55: 465. ♀, ♂.
 Biology: Phillips, 1920. U. S. Dept. Agr., Bul. 808: 22-23.
- elymoxena** Phillips and Emery. Calif. Host: *Elymus glaucus*.
Harmolita elymoxena Phillips and Emery, 1919. U. S. Natl. Mus., Proc. 55: 459. ♀, ♂.
- festucae** Phillips and Emery. N. Y., N. J., Pa., Va., Ohio. Host: *Festuca* sp., *F. elatior*. This may be a synonym of the European *Harmolita giraudi* von Schlechtendal.
Harmolita festucae Phillips and Emery, 1919. U. S. Natl. Mus., Proc. 55: 454. ♀, ♂.
 Taxonomy: Claridge, 1961. Roy. Ent. Soc. London, Trans. 113: 194.
 Biology: Phillips, 1920. U. S. Dept. Agr., Bul. 808: 18-19. —Phillips and Poos, 1927. Jour. Agr. Res. 34: 475, 483.
- flavicoxa** Phillips. N. Mex. Host: *Elymus* sp.
Harmolita flavicoxa Phillips, 1936. U. S. Dept. Agr., Tech. Bul. 518: 13. ♀, ♂.
- gahani** Phillips. S. Dak. Host: *Elymus* sp.
Harmolita gahani Phillips, 1936. U. S. Dept. Agr., Tech. Bul. 518: 18. ♀.
- gillettei** Phillips and Emery. Colo.
Harmolita gillettei Phillips and Emery, 1919. U. S. Natl. Mus., Proc. 55: 467. ♀.
- grandis** (Riley). Ont., N. Y., s. to N. C., w. to Wash., Oreg., Calif. Ecology: This species has two generations per year, an apterous early spring generation (form *minuta*) and a late spring or early summer winged generation (form *grandis*). Host: *Triticum* spp., cereal wheats. This may be a synonym of the European *Harmolita aptera* (Portschinsky).
 Wheat strawworm.
Isosoma tritici Riley, 1882. Amer. Nat. 16: 247. ♀. Preocc. by Fitch, 1859.
Isosoma grandis Riley, 1884. Brooklyn Ent. Soc., Bul. 7: 111. ♀. Winged gen.
Isosoma grande form *minutum* Howard, 1896. U. S. Dept. Agr., Div. Ent., Tech. Ser. 2: 10.
 Wingless gen.
Urios vestali Girault, 1911. N. Y. Ent. Soc., Jour. 19: 176. ♀.
 Biology: Webster and Reeves, 1909. U. S. Dept. Agr., Bur. Ent. Cir. 106: 1-11. —Gossard, 1911. Ohio Agr. Expt. Sta., Bul. 233: 66. —Doane, 1916. Calif. State Comm. Hort., Monthly Bul. 5: 69-72. —Phillips, 1920. U. S. Dept. Agr., Bul. 808: 6-8. —Phillips and Poos, 1921. Jour. Agr. Res. 21: 409, 421. —Knowlton, 1931. Jour. Econ. Ent. 24: 414-416. —Knowlton, 1932. Jour. Econ. Ent. 25: 1169-1170. —Knowlton and Janes, 1933. Utah Agr. Expt. Sta., Bul. 243: 1-8. —Balachowsky and Mesnil, 1935. Ins. nuisables aux Plantes Cult., v. 1, p. 1087. —Smith, 1943. Kansas State Bd. Agr., Rpt. 62: 394. —Flanders, 1950. Jour. Econ. Ent. 43: 719. —Phillips and Poos, 1953. U. S. Dept. Agr., Farmers' Bul. 1323: 1-6. —Knowlton and Lieberman, 1954. Utah Agr. Col., Ext. Cir. 194, 2pp. —Painter *et al.*, 1954. Kansas Agr. Expt. Sta., Bul. 367: 43.
- hageni** (Howard). Mass. Host: *Agropyron repens*.
Isosoma hageni Howard, 1896. U. S. Dept. Agr., Div. Ent., Tech. Ser. 2: 12. ♀.
- hesperus** Phillips and Emery. N. Dak., S. Dak., Nebr., Kans., Utah. Host: *Elymus* spp.
Harmolita hesperus Phillips and Emery, 1919. U. S. Natl. Mus., Proc. 55: 457. ♀, ♂.

- Biology: Phillips, 1920. U. S. Dept. Agr., Bul. 808: 22-23.
- holci** Phillips. Oreg. Host: *Holcus* sp.
Harmolita holci Phillips, 1936. U. S. Dept. Agr., Tech. Bul. 518: 19. ♀, ♂.
- hordei** (Harris). P. E. I., Que., Ont., s. to N. C., w. to Ill., Kans., Colo.; Europe, Asia. Host: *Hordeum vulgare*, barley. Barley jointworm.
Ichneumon hordei Harris, 1830. New England Farmer 9: 2. (Transf. to *Eurytoma* in footnote on same page).
Pteromalus fulvipes Fitch, 1859. N. Y. State Agr. Soc., Jour. 10: 114.
Eurytoma flavipes Fitch, 1862 (1861). N. Y. State Agr. Soc., Trans. 21: 845. Preocc. by Walker, 1834.
- Biology: Gossard, 1911. Ohio Agr. Expt. Sta., Bul. 233: 70. — Phillips, 1920. U. S. Dept. Agr., Bul. 808: 11-13. — Cannon, 1963. Canad. Ent. 95: 28. — Sterling and MacLaren, 1964. Canad. Jour. Plant Sci. 44: 53-56.
- iphis** (Walker). Fla.
Eurytoma Iphis Walker, 1846. List Hym. Brit. Mus., v. 1, p. 85. ♀.
- Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 163.
- jonesi** Phillips. Calif. Host: *Elymus* sp.
Harmolita jonesi Phillips, 1936. U. S. Dept. Agr., Tech. Bul. 518: 15. ♀, ♂.
- kingi** Phillips. Sask. Host: *Hordeum jubatum*.
Harmolita kingi Phillips, 1927. Ent. Soc. Wash., Proc. 29: 128. ♀, ♂.
- koebelei** Phillips. Calif.
Harmolita koebelei Phillips, 1936. U. S. Dept. Agr., Tech. Bul. 518: 11. ♀.
- linearis** (Walker). N. Y., Pa., Ohio, Mich., Ind.; Europe, Asia. Host: *Agropyron* spp.
Isosoma lineare Walker, 1832. Ent. Mag. 1: 22. ♀.
Harmolita atlantica Phillips and Emery, 1919. U. S. Natl. Mus., Proc. 55: 461. ♀, ♂.
- Taxonomy: Claridge, 1961. Roy. Ent. Soc. London, Trans. 113: 192 (syn.). — Zerova, 1966. Zool. Zhur. 45: 1508.
- Biology: Phillips, 1920. U. S. Dept. Agr., Bul. 808: 19-20. — Phillips and Poos, 1921. Jour. Agr. Res. 21: 409, 416, 421. — Phillips and Poos, 1927. Jour. Agr. Res. 34: 475, 483. — Bailey, 1960. Entomologist 93: 40 (parasites).
- lolii** Gahan. Oreg., Calif. Host: *Lolium multiflorum*, *L. temulentum*.
Harmolita lolii Gahan, 1922. U. S. Natl. Mus., Proc. 61 (24): 9. ♀, ♂.
- longicornis** (Walker). N. Y., Va., S. Dak., Oreg.; Europe. Host: *Phalaris arundinacea*.
Isosoma longicorne Walker, 1832. Ent. Mag. 1: 17. ♂.
Harmolita phalaridis Phillips and Poos, 1922. Kans. Univ., Sci. Bul. 14: 531. ♀, ♂.
- Taxonomy: Claridge, 1961. Roy. Ent. Soc. London, Trans. 113: 209 (syn.).
- longipetiolata** Phillips. N. Dak. Host: *Stipa comata*.
Harmolita longipetiolata Phillips, 1936. U. S. Dept. Agr., Tech. Bul. 518: 16. ♀.
- longula** (Dalman). Mass., N. Y., Pa., Va., Ohio, Mich., Ind., Tenn., Utah; Europe. Host: *Dactylus glomerata*.
Eurytoma longula Dalman, 1820 Svenska Vetensk. Akad., Handl. 41: 173, pl. 7, fig. 15.
Harmolita dactylicola Phillips and Emery, 1919. U. S. Natl. Mus., Proc. 55: 446. ♀, ♂.
- Taxonomy: Claridge, 1961. Roy. Ent. Soc. London, Proc. 113: 210 (syn.).
- Biology: Phillips, 1920. U. S. Dept. Agr., Bul. 808: 16. — Phillips and Poos, 1927. Jour. Agr. Res. 34: 475, 483.
- maculata** (Howard). Mass., N. Y., Va., Mich., Ind., Ky., Ill., Mo.; Europe. Host: *Bromus* sp., *Bromus secalinus*.
Isosoma maculatum Howard, 1896. U. S. Dept. Agr., Div. Ent., Tech. Ser. 2: 15. ♀.
- Biology: McConnell, 1918. Jour. Econ. Ent. 11: 170. — Phillips, 1920. U. S. Dept. Agr., Bul. 808: 19. — Phillips and Poos, 1921. Jour. Agr. Res. 21: 421. — Phillips and Poos, 1927. Jour. Agr. Res. 34: 475, 483-484. — Claridge, 1961. Roy. Ent. Soc. London, Trans. 113: 213.
- minuenda** Phillips. N. Dak. Host: *Elymus* sp.
Harmolita minuenda Phillips, 1936. U. S. Dept. Agr., Tech. Bul. 518: 6. ♀.

montana (Ashmead). Mont., Colo.

Isosoma montanum Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 329. ♀.

neocaptiva Peck. N. Y., Ind., Ill. Host: *Poa pratensis*.

Isosoma captivum Howard, 1896. U. S. Dept. Agr., Div. Ent., Tech. Ser. 2: 13. ♀, ♂.

Preocc. by Lintner, 1888.

Harmolita neocaptiva Peck, 1951. In Muesebeck et al., U. S. Dept. Agr., Agr. Monog. 2: 571. N. name.

Biology: Phillips, 1920. U. S. Dept. Agr., Bul. 808: 16-17, 23.

nigricornis (Ashmead). Fla.

Xanthosoma nigricornis Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 320. ♀.

occidentalis Phillips and Emery. N. Mex. Host: *Agropyron* sp.

Harmolita occidentalis Phillips and Emery, 1919. U. S. Natl. Mus., Proc. 55: 465. ♀, ♂.

Biology: Phillips and Poos, 1921. Jour. Agr. Res. 21: 421.

oregon Phillips. Oreg. Host: *Elymus* sp.

Harmolita oregon Phillips, 1936. U. S. Dept. Agr., Tech. Bul. 518: 14. ♀.

Harmolita oregonensis Peck, 1951. In Muesebeck et al., U. S. Dept. Agr., Agr. Monog. 2: 571. Emend.

ovatella Burks, n. name. Kans. Host: *Elymus* sp.

Harmolita ovata Phillips and Emery, 1919. U. S. Natl. Mus., Proc. 55: 458. ♀, ♂. Preocc. by *Isosoma ovata* Szepilgeti, 1901.

Biology: Phillips, 1920. U. S. Dept. Agr., Bul. 808: 22-23.

pacifica Phillips. Calif.

Harmolita pacifica Phillips, 1936. U. S. Dept. Agr., Tech. Bul. 518: 12. ♀, ♂.

panici Phillips and Poos. Va. Host: *Panicum clandestinum*.

Harmolita panici Phillips and Poos, 1922. Kans. Univ., Sci. Bul. 14: 351. ♀, ♂.

Biology: Phillips and Poos, 1921. Jour. Agr. Res. 21: 421 (*Harmolita* sp.).

poacola Gahan. Conn., Ind. Host: *Poa pratensis*.

Harmolita poae Phillips and Emery, 1919. U. S. Natl. Mus., Proc. 55: 445. ♀, ♂. Preocc. by

Isosoma poae Schlechtendal, 1891.

Harmolita poacola Gahan, 1922. Ent. Soc. Wash., Proc. 24: 46, 52. N. name.

Biology: Phillips, 1920. U. S. Dept. Agr., Bul. 808: 17-18.

poophila Phillips and Emery. Colo. Host: *Poa* sp., *P. lucida*.

Harmolita poophila Phillips and Emery, 1919. U. S. Natl. Mus., Proc. 55: 463. ♀, ♂.

Harmolita poaphila Peck, 1951. In Muesebeck et al., U. S. Dept. Agr., Agr. Monog. 2: 572. Emend.

poosi Phillips. Va.

Harmolita poosi Phillips, 1936. U. S. Dept. Agr., Tech. Bul. 518: 10. ♀.

rufipes Phillips and Emery. Ill., Nebr., Kans., N. Mex., Utah. Host: *Elymus* spp.

Harmolita rufipes Phillips and Emery, 1919. U. S. Natl. Mus., Proc. 55: 453. ♀, ♂.

Biology: Phillips, 1920. U. S. Dept. Agr., Bul. 808: 21-23.

sativi Phillips. Ill. Host: *Triticum*, wheat.

Harmolita sativi Phillips, 1936. U. S. Dept. Agr., Tech. Bul. 518: 7. ♀.

secale (Fitch). N. Y., Pa., Va., Ohio, Mich., Ind., Nebr., Kans., Utah, Alta. Host: *Secale*, cultivated rye.

Eurytoma Secale Fitch, 1861. Amer. Agr. 20: 235-236.

Biology: Phillips, 1920. U. S. Dept. Agr., Bul. 808: 13. —Holmes and Blakeley, 1971. Canad. Ent. 103: 277.

stipicola Phillips. N. Dak. Host: *Stipa comata*.

Harmolita stipicola Phillips, 1936. U. S. Dept. Agr., Tech. Bul. 518: 8. ♀.

stipiphaga Phillips. N. Dak. Host: *Stipa comata*.

Harmolita stipiphaga Phillips, 1936. U. S. Dept. Agr., Tech. Bul. 518: 17. ♀.

stipiphila Phillips. N. Dak.

Harmolita stipiphila Phillips, 1936. U. S. Dept. Agr., Tech. Bul. 518: 16. ♀.

sulcata (Ashmead). Fla.

Isosomocharis sulcata Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 331. ♀.

tibialis (Ashmead). S. Dak., Mont., Oreg. Host: *Phalaris* sp., *P. arundinacea*.

Isosomorpha tibialis Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 331. ♀, ♂.

Harmolita phalaricola Phillips and Poos, 1922. Kans. Univ., Sci. Bul. 14: 353. ♀.

tritici (Fitch). Ont., N. Y., s. to N. C., w. to Wash., Oreg., Calif.; Europe, Asia. Host: *Triticum* spp., cereal wheats. Wheat jointworm.

Pteromalus tritici Fitch, 1859. N. Y. State Agr. Soc., Jour. 10: 115.

Decatoma basilaris Provancher, 1881. Nat. Canad. 12: 290. ♀, ♂.

Isosoma nigrum Cook, 1885. Rural New Yorker 44: 314. ♀, ♂.

Taxonomy: Burks, 1964 (1963). Canad. Ent. 95: 1257 (*basilaris*). —Zerova, 1966. Zool. Zhur. 45: 1513 (key to Ukraine spp.)

Biology: Pettit, 1907. Mich. Agr. Expt. Sta., Bul. 244: 106-109. —Knowlton and Janes, 1933.

Utah Agr. Expt. Sta., Bul. 243: 8-9. —Balachowsky and Mesnil, 1935. Ins. nuisables aux

Plantes Cult., v. 1, p. 1086. —Phillips and Dicke, 1935. Jour. Agr. Res. 50: 359-386.

—Phillips and Poos, 1940. U. S. Dept. Agr., Farmers' Bul. 1006: 1-12. —Chamberlin, 1941.

U. S. Dept. Agr., Tech. Bul. 784: 1-46. —Zerova, 1966. Zool. Zhur. 45: 1506.

utahensis Phillips. Utah. Ecology: Swept from wheat.

Harmolita utahensis Phillips, 1936. U. S. Dept. Agr., Tech. Bul. 518: 11. ♀.

vaginicola (Doane). Que., Ont., s. to Va., w. to Utah, Wash., Oreg.; Europe. Host: *Triticum* spp., cereal wheats.

Isosoma vaginicola Doane, 1916. Jour. Econ. Ent. 9: 399. ♀.

Biology: Knowlton and Janes, 1933. Utah Agr. Expt. Sta., Bul. 243: 9. —Zerova, 1966. Zool. Zhur. 45: 1508.

websteri (Howard). Que., Ont., s. to Va., w. to Utah, Calif. Host: *Secale cereale*, rye.

Isosoma websteri Howard, 1896. U. S. Dept. Agr., Div. Ent., Tech. Ser. 2: 15. ♀.

Isosoma hirtifrons Howard, 1896. U. S. Dept. Agr., Div. Ent., Tech. Ser. 2: 16. ♀.

Isosoma fitchi Howard, 1896. U. S. Dept. Agr., Div. Ent., Tech. Ser. 2: 20. ♀, ♂.

Biology: Phillips and Poos, 1927. Jour. Agr. Res. 34: 483. —Knowlton, 1932. Jour. Econ. Ent.

25: 1171-1172. —Knowlton and Janes, 1933. Utah Agr. Expt. Sta., Bul. 243: 9-10.

Genus GAHANIOLA Erdos

Gahaniola Erdos, 1952. Folia Ent. Hung. (n. s.) 5: 117.

Type-species: *Harmolita phyllostachitis* Gahan. Orig. desig.

phragmitis Erdos. Often introduced in reeds from Europe; may be established in *Phragmites* growing on East Coast. Host: *Phragmites communis*.

Gahaniola phragmitis Erdos, 1952. Folia Ent. Hung. (n. s.) 5: 119. ♀.

Taxonomy: Erdos, 1955. Allat. Kozlem. 45: 37, 46 (male).

phyllostachitis (Gahan). Fla., Ala., Russia, China, Japan. Ecology: Specimens sometimes emerge from imported bamboo poles at scattered localities in the U. S. Host:

Phyllostachys bambusoides.

Harmolita phyllostachitis Gahan, 1922. Ent. Soc. Wash., Proc. 24: 55. ♀.

Biology: Agekian, 1966. Zool. Zhur. 45: 1724.

Genus CATHILARIA Burks

Cathilaria Burks, 1971. Amer. Ent. Soc., Trans. 97: 34.

Type-species: *Harmolita opuntiae* Muesebeck. Orig. desig.

opuntiae (Muesebeck). Tex., N. Mex., Ariz., Nev., Calif. Host: *Hilaria mutica*. Originally thought to have emerged from *Opuntia*.

Harmolita opuntiae Muesebeck, 1932. Ent. Soc. Wash., Proc. 34: 110. ♀, ♂.

Biology: Muesebeck, 1933 (1932). Ent. Soc. Wash., Proc. 34: 158 (correction of host record).

Genus ISOSOMODES Ashmead

Isosomodes Ashmead, 1888. Ent. Amer. 4: 42-43. No species. —Ashmead, 1894, Amer. Ent. Soc., Trans. 21: 332. One species.

Type-species: *Isosoma gigantea* Ashmead. Desig. by Ashmead, 1894.

giganteus (Ashmead). D. C., Va., Fla.; West Indies.

Isosoma gigantea Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 127. ♂.

Genus SYSTOLE Walker

Systole Walker, 1832. Ent. Mag. 1: 13, 22.

Type-species: *Systole albipennis* Walker. Monotypic.

Taxonomy: Erdos, 1951. Folia Ent. Hung. (n. s.) 4: 57-58 (Palearctic spp.). —Erdos, 1952. Folia Ent. Hung. (n. s.) 5: 121-126 (Palearctic spp.). —Claridge, 1959. Ent. Monthly Mag. 95: 39 (British spp.). —Claridge, 1961. Soc. Brit. Ent., Trans. 14: 171-179 (type-species).

albipennis Walker. Ont.; Europe, Orient. Ecology: Phytophagous in seeds of umbellifers. Host:

Anethum graveolens, *Coriandrum sativum*, *Cuminum cyminum*, *Daucus carota*, *Foeniculum vulgare*, *Pimpinella anisum*, *Torilis japonica*.

Systole albipennis Walker, 1832. Ent. Mag. 1: 22. ♀.

Taxonomy: Masi, 1919. Mus. Civ. Stor. Nat. Genova, Ann. (3) 8: 147-148. —Masi, 1933. Soc. Ent. Ital., Bol. 65: 219-220 (male). —Boucek, 1952. Folia Zool. et Ent. 1: 4 (separation of spp.). —Claridge, 1959. Ent. Monthly Mag. 95: 39-40 (description of male and female).

Biology: Marchal, 1900. Soc. Ent. de France, Ann. 69: 111 (*geniculata*). —Batra *et al.*, 1959. Current Sci. [India] 28: 451 (larva). —Wadhi, 1963. Indian Jour. Ent. 25: 384 (hosts).

geniculata Foerster. Colo., Idaho, Calif.; Europe, Orient. Ecology: Phytophagous in seeds of umbellifers. Host: *Coriandrum sativum*, *Daucus carota*, *Foeniculum vulgare*, *Pimpinella anisum*.

Systole geniculata Foerster, 1861. Prog. Realsch. Aachen, p. xxxiii.

Biology: Sakimura, 1946. Hawaii. Ent. Soc., Proc. 12: 481 (feeding habits). —Roberts, 1963. Jour. Econ. Ent. 56: 541 (in carrot seeds).

minuta Ashmead. Fla.

Systole minuta Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 319. ♀, ♂.

SUBFAMILY EUDECATOMINAE

Genus EUDECATOMA Ashmead

Eudecatoma Ashmead, 1888. Ent. Amer. 4: 42-43. No species. —Ashmead, 1894, Amer. Ent. Soc., Trans. 21: 319. One species.

Type-species: *Decatoma batatoides* Ashmead. Desig. by Ashmead, 1894.

Decatomidea Ashmead, 1888. Ent. Amer. 4: 42-43. No species. —Ashmead, 1894, Amer. Ent. Soc., Trans. 21: 322. Two species.

Type-species: *Decatomidea xanthochroa* Ashmead. Desig. by Ashmead, 1894.

The world literature on this genus up to 1944 used the name *Decatoma* Spinola, 1811. Then Hincks made the decision that *Decatoma* Spinola was a synonym of *Eurytoma* Illiger, 1807, leaving this genus to take the next available name, *Eudecatoma* Ashmead, 1888. This decision was not based on a study of types, but was based on an entry in Dalla Torre's 1898 Catalogus Hymenopterorum. Since 1944 the literature has employed the name *Eudecatoma*. It is to be hoped that if Spinola's types are ever found a study of them will show this change to have been justified.

Revision: Balduf, 1932. U. S. Natl. Mus., Proc. 79 (28): 1-95 (*Decatoma*).

Taxonomy: Hincks, 1944. Roy. Ent. Soc. London., Proc., Series B: Taxonomy 13: 37 (nomenclature). —Peck, 1963. Canad. Ent., Sup. 30: 833-844 (change subsp. to var.).

arizonica (Balduf). Ariz. Host: *Andricus ruginosus* Bass.

Decatoma foliatae var. *arizonica* Balduf, 1932. U. S. Natl. Mus., Proc. 79 (28): 82. ♀, ♂.

autumnalis (Girault). Calif.

Decatoma autumnalis Girault, 1920. U. S. Natl. Mus., Proc. 58: 209. ♀.

batatoides (Ashmead). N. J., Fla. Host: *Callirhytis quercusbatatoides* (Ashm.).

Decatoma batatoides Ashmead, 1881. Canad. Ent. 13: 136.

bicolor (Ashmead). Fla., La. Host: *Belonocnema treatae* Mayr.

Decatoma bicolor Ashmead, 1881. Amer. Ent. Soc., Trans. 9: Proc. p. xxxii. ♀.

catesbaei (Ashmead). Fla. Host: *Bassetia quercuscatesbaei* (Ashm.).

Decatoma catesbaei Ashmead, 1881. Amer. Ent. Soc., Trans. 9: Proc. p. xxxii. ♀.

Decatoma catesbii Dalla Torre, 1898. Cat. Hym., v. 5, p. 327. Emend.

compressa (Girault). Calif.

Decatoma compressa Girault, 1920. U. S. Natl. Mus., Proc. 58: 209. ♀.

disholcaspis (Balduf). Tex., Colo., N. Mex., Ariz. Host: *Adleria* sp., *Andricus ruginosus* Bass.,

Disholcaspis sp., *D. cinerosa* (Bass.).

Decatoma disholcaspis Balduf, 1932. U. S. Natl. Mus., Proc. 79 (28): 23. ♀, ♂.

Biology: Judd, 1966. Marcellia 32: 256 (in *Euura* gall on *Salix*).

dorsalis (Fitch). Mass., N. Y., s. to Fla., w. to Kans., Tex. Host: *Acraspis erinacei* (Beut.),

Andricus aciculatus Beut., *A. quercusflocci* (Walsh), *A. quercuspetiolicola* (Bass.),

Callirhytis tumifica (O. S.), *Disholcaspis quercusglobulus* (Fitch), *D. quercusmamma*

(Walsh), *Neuroterus quercusmajalis* (Bass.), *Xanthoteras quercusforticorne* (Walsh).

Spalangia Querci-lanae var. *dorsalis* Fitch, 1859. N. Y. State Agr. Soc., Trans. 18: 816.

dubia doanei (Fullaway). Colo., Utah, Calif. Host: *Disholcaspis canescens* (Bass.); *D.*

chrysolepidis (Beut.), *D. corallina* (Bass), *D. eldoradensis* (Beut.), *D. plumbella* Kinsey.

Decatoma doanei Fullaway, 1912. N. Y. Ent. Soc., Jour. 20: 279. ♀.

dubia dubia (Walsh). Mass., Ont., s. to N. C., w. to Utah., Ariz. Host: *Belonocnema quercusvirens* (O. S.), *Callirhytis quercuspunctata* (Bass.), *Disholcaspis quercusglobulus* (Fitch), *D. quercusmamma* (Walsh), *D. spongiosa* (Karsch), *Dryocosmus imbricariae* (Ashm.).

Decatoma varians var. *dubia* Walsh, 1870. Amer. Ent. and Bot. 2: 300. ♀, ♂.

dubia rufosa (Balduf). N. Y., Va., S. C., Ga., Fla., Ala., Ill., Tex. Host: *Belonocnema*

quercusvirens (O. S.), *Disholcaspis quercusglobulus* (Fitch), *D. quercusmamma* (Walsh),

D. spongiosa (Karsch).

Decatoma dubia var. *rufosa* Balduf, 1932. U. S. Natl. Mus., Proc. 79 (28): 41. ♀, ♂.

flamminneiventris (Girault). Tex., Colo., N. Mex. Host: *Prodoxus* sp., *P. quinquepunctellus* (Chamb.), *P. y-inversus* Riley.

Decatoma flamminneiventris Girault, 1920. U. S. Natl. Mus., Proc. 58: 208. ♀, ♂.

flava (Ashmead). Mass., s. to N. C., w. to Mo., Tex., N. Mex. Host: *Acraspis erinacei* (Beut.), *A. macrocarpae* Bass., *A. pezomachoides* (O. S.), *Andricus aciculatus* Beut., *A. murtfeldtae* Ashm., *A. quercuspetiolicola* (Bass.), *A. tubularius* Weld, *Callirhytis seminator* (Harr.), *Dryocosmus floridensis* (Beut.), *Loxaulus humilis* (Weld), *Neuroterus noxiosus* (Bass.), *N. quercusbatatus* (Fitch).

Decatoma flava Ashmead, 1881. Canad. Ent. 13: 134. ♀, ♂.

Biology: Triggerson, 1914. Ent. Soc. Amer., Ann. 7: 8-9.

flavipes (Balduf). Ariz. Host: *Dryocosmus corii* (Bass.).

Decatoma flavipes Balduf, 1932. U. S. Natl. Mus., Proc. 79 (28): 52. ♀, ♂.

florida (Girault). Fla. *Andricus quercusflocci* (Walsh) may be the host of this species.

Decatoma florida Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. V, p. 6. ♀.

Taxonomy: Girault, 1920. U. S. Natl. Mus., Proc. 58: 208 (repetition of privately published original description).

foliatae (Ashmead). Va., Fla., Ill., Mo. Host: *Andricus quercusfoliatus* (Ashm.), *Callirhytis flavipes* (Gill.), *Disholcaspis quercusglobulus* (Fitch), *Dryocosmus imbricariae* (Ashm.).

Decatoma foliatae Ashmead, 1881. Canad. Ent. 13: 136. ♀, ♂.

globuli (Balduf). Ill. Host: *Andricus ruginosus* Bass., *A. tecturnarum* Kinsey, *Disholcaspis eldoradensis* (Beut.), *D. quercusglobulus* (Fitch), *D. spongiosa* (Karsch), *Xanthoteras quercusforticorne* (Walsh).

Decatoma globuli Balduf, 1932. U. S. Natl. Mus., Proc. 79 (28): 47. ♀, ♂.

- gracilis* (Fullaway). Calif. Host: *Andricus quercuscalifornicus* (Bass.).
Decatomata gracilis Fullaway, 1912. N. Y. Ent. Soc., Jour. 20: 280. ♂.
- isis* (Girault). Calif. Host: *Andricus chrysolepidicola* (Ashm.), *A. quercuscalifornicus* (Bass.), *A. spectabilis* Kinsey, *Callirhytis quercuspomiformis* (Bass.), *C. quercussuttoni* (Bass.).
Decatomata isis Girault, 1917. Descr. Stellarum Nov., p. 10. ♀.
- lanae* (Ashmead). Fla. Host: *Callirhytis quercusturnerii* (Ashm.).
Decatomata lanae Ashmead, 1881. Canad. Ent. 13: 135. ♀, ♂.
- lobatae* (Balduf). Calif. Host: *Andricus wiltzae* Full., *Neuroterus varians* Kinsey.
Decatomata lobatae Balduf, 1932. U. S. Natl. Mus., Proc. 79 (28): 45. ♀.
- marylandica* (Girault). N. S., Md., D. C. Host: *Neuroterus quercusbatatus* (Fitch).
Decatomata marylandica Girault, 1916. Brooklyn Ent. Soc., Bul. 11: 112. ♀.
- mellea* (Curtis). P. E. I., Que., N. Y., Oreg.; Holarctic. Host: *Mayetiola destructor* (Say); *Ditropinotus aurcoviridis* Cwfd., *Eurytoma parva* Phill., *Harmolita hordei* (Harr.), *H. linearis* (Walk.), *H. tritici* (Fitch).
Decatomata mellea Curtis, 1831. Brit. Ent. 8: 345. "♂" = ♀.
Decatomata amsterdamensis Girault, 1917. Descr. Stellarum Nov., p. 10. ♀, ♂.
- Taxonomy: Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 38-41 (*amsterdamensis*).
 —Claridge, 1959. Soc. Brit. Ent., Trans. 13: 160 (syn.).
- Biology: Chamberlin, 1941. U. S. Dept. Agr., Tech. Bul. 784: 29, 40. —Cannon, 1963. Canad. Ent. 95: 34.
- michiganica* (Girault). Mich.
Decatomata michiganica Girault, 1920. U. S. Natl. Mus., Proc. 58: 209. ♀.
- mimosae* (Balduf). Ariz. Ecology: Reared from gall on *Mimosa biuncifera*. Host: *Tanaostigmodes* sp.
Decatomata mimosae Balduf, 1932. U. S. Natl. Mus., Proc. 79 (28): 25. ♀, ♂.
- nigriceps excrucians* (Walsh). Ill. Host: *Callirhytis seminator* (Harr.).
Decatomata nigriceps var. *excrucians* Walsh, 1870. Amer. Ent. and Bot. 2: 301. ♀, ♂.
- nigriceps nigriceps* (Walsh). Mass., Conn., Va., Ill., Mo., Kans. Host: *Callirhytis tumifica* (O. S.), *Disholcaspis quercusmaima* (Walsh), *Xanthoterus quercusforticorne* (Walsh).
Decatomata nigriceps Walsh, 1870. Amer. Ent. and Bot. 2: 300. ♀, ♂.
- novascotiae* (Balduf). N. S., Va. Host: *Callirhytis cornigera* (O. S.); *Neuroterus quercusbatatus* (Fitch).
Decatomata novascotiae Balduf, 1932. U. S. Natl. Mus., Proc. 79 (28): 50. ♀, ♂.
- nubilistigma* (Walsh). Que., Mass., N. Y., N. J., Ill., Kans. Ecology: Reared from gall on *Euura* sp. gall on *Salix discolor*.
Decatomata nubilistigma Walsh, 1870. Amer. Ent. and Bot. 2: 301. ♀, ♂.
- occidentalis flavifrons* (Balduf). Ariz. Ecology: Reared from gall on live oak.
Decatomata occidentalis var. *flavifrons* Balduf, 1932. U. S. Natl. Mus., Proc. 79 (28): 61. ♂.
- occidentalis occidentalis* (Balduf). Conn., Colo., N. Mex., Utah, Ariz., Oreg., Calif. Host: *Adleria weldi* (Beut.), *Andricus chrysolepidicola* (Ashm.), *A. lasius* (Ashm.), *A. lasius* var. *areolaris* Kinsey, *A. ruginosus* Bass., *Antron quercusechinus* (O. S.), *Disholcaspis canescens* (Bass.), *D. corallina* (Bass.), *D. eldoradensis* (Beut.), *D. truckeensis* (Ashm.), *Xanthoterus eburneum* (Bass.).
Decatomata occidentalis Balduf, 1932. U. S. Natl. Mus., Proc. 79 (28): 58. ♀, ♂.
- pezomachoides* (Balduf). Ohio. Host: *Acraspis pezomachoides* (O. S.).
Decatomata pezomachoides Balduf, 1932. U. S. Natl. Mus., Proc. 79 (28): 69. ♀.
- pomiformis* (Balduf). Calif. Host: *Callirhytis quercuspomiformis* (Bass.).
Decatomata pomiformis Balduf, 1932. U. S. Natl. Mus., Proc. 79 (28): 70. ♀, ♂.
- querici* (Ashmead). Fla. Ecology: Reared from dipterous galls on *Quercus catesbaei*.
Decatomata querici Ashmead, 1881. Canad. Ent. 13: 135. ♂.
- quercilanae* (Fitch). Que., Ont., s. to Fla., w. to Tex., Colo., Ariz. Host: *Acraspis inflata* (Kinsey), *Andricus aciculatus* Beut., *A. murtfeldtae* Ashm., *A. pattoni* (Bass.), *A. quercusflocci* (Walsh), *A. quercuspetiolicola* (Bass.), *Callirhytis flavipes* (Gill.), *C. quercuscutula* (Bass.), *C. seminator* (Harr.), *C. tumifica* (O. S.), *Disholcaspis*

- quercusglobulus* (Fitch), *D. quercusmamma* (Walsh), *Neuroterus quercusbatatus* (Fitch), *N. quercusmajalis* (Bass.), *Xanthoterus quercusforticorne* (Walsh).
Spalangia Querci-lanae Fitch, 1850. N. Y. State Agr. Soc., Trans. 18: 816.
Decatoma hyalipennis Walsh, 1870. Amer. Ent. and Bot. 2: 301. ♀, ♂.
Decatoma flavicollis Ashmead, 1885. Amer. Ent. Soc., Trans. 12: Proc. p. xiii. ♀, ♂. Preocc. by Walker, 1834.
Decatoma floridana Smith, 1886. Ent. Amer. 2: 19. N. name for *flavicollis* Ashm.
quinqueseptae (Balduf). Calif. Host: *Andricus quercuspetiolicola* (Bass.).
Decatoma quinqueseptae Balduf, 1932. U. S. Natl. Mus., Proc. 79 (28): 78. ♀, ♂.
simplicistigma (Walsh). Ill., Kans., Colo. Host: *Acraspis erinacei* (Beut.), *Andricus quercuspetiolicola* (Bass.).
Decatoma simplicistigma Walsh, 1870. Amer. Ent. and Bot. 2: 301. ♀, ♂.
subimmaculata (Girault). Calif. Host: *Andricus lasius* (Ashm.), *A. lasius* var. *sublasius* Kinsey, *A. spectabilis* Kinsey, *Callirhytis quercuspomiformis* (Bass.), *Disholcaspis truckeensis* (Ashm.), *Heteroecus pacificus* (Ashm.).
Decatoma subimmaculata Girault, 1917. Jour. Ent. and Zool. 9: 11. ♀.
texana (Balduf). Tex.
Decatoma texana Balduf, 1932. U. S. Natl. Mus., Proc. 79 (28): 22. ♀, ♂.
vacciniicola (Balduf). Ont., Que., s. to Va., w. to Ill., La. Host: *Hemadas nubilipennis* (Ashm.).
Decatoma vacciniicola Balduf, 1932. U. S. Natl. Mus., Proc. 79 (28): 12. ♀, ♂.
 Biology: Glick, 1939. U. S. Dept. Agr., Tech. Bul. 673: 45. —Judd, 1959. Amer. Micros. Soc., Trans. 78: 213.
varians (Walsh). Ont., s. to Fla., w. to Tex., Colo., Calif. Host: *Andricus chrysolepidicola* (Ashm.), *A. chrysolepidicola* var. *pugnis* Kinsey, *Callirhytis frequens* (Gill.), *C. quercusgemma* (Ashm.), *C. quercuspunctulata* (Bass.), *Disholcaspis eldoradensis* (Beut.), *D. quercusglobulus* (Fitch), *Dryocosmus imbricariae* (Ashm.), *Sphaeroterus caepuliforme* (Beut.).
Decatoma varians Walsh, 1870. Amer. Ent. and Bot. 2: 300. ♀, ♂.
Decatoma phellos Ashmead, 1881. Canad. Ent. 12: 136. ♂.
Decatoma kelloggi Fullaway, 1912. N. Y. Ent. Soc., Jour. 20: 278. ♀, ♂.
wiltzae (Balduf). Conn., Ariz., Calif. Host: *Andricus wiltzae* Full.
Decatoma wiltzae Balduf, 1932. U. S. Natl. Mus., Proc. 79 (28): 83. ♀, ♂.
xanthochroa (Ashmead). Fla., Tex. Host: *Andricus murtfeldtae* Ashm., *Callirhytis flavipes* (Gill.).
Decatomidea xanthochroa Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 322. ♀.
Decatoma brevilobae Balduf, 1932. U. S. Natl. Mus., Proc. 79 (28): 56. ♀, ♂.

Genus SYCOPHILA Walker

- Sycophila* Walker, 1871. Notes on Chalcid., p. 63.
 Type-species: *Sycophila decatomoides* Walker. Desig. by Ashmead, 1904.
Isanisa Walker, 1875. Entomologist 8: 15.
 Type-species: *Isanisa decatomoides* Walker. Monotypic.
Pseudisa Walker, 1875. Entomologist 8: 15.
 Type-species: *Pseudisa smicroides* Walker. Monotypic.
 Taxonomy: Burks, 1971. Amer. Ent. Soc., Trans. 97: 72-73.
butcheri Burks. Fla. Host: *Ficus aurea*, *F. laevigata*.
Sycophila butcheri Burks, 1969. Fla. Ent. 52: 120. ♀, ♂.

SUBFAMILY AXIMINAE

Genus AXIMA Walker

- Axima* Walker, 1862. Ent. Soc. London, Trans. (3) 1: 373.
 Type-species: *Arima spinifrons* Walker. Monotypic.

zabriskiei Howard. Que., N. Y., N. J., Va., W. Va., Mich., Ind., Mo., Tex., Calif. Host: *Ceratina calcarata* Robt., *C. dupla* Say.

Arixina zabriskiei Howard, 1890. U. S. Dept. Agr., Insect Life 2: 365. ♀, ♂.

Biology: Rau, 1928. Ent. Soc. Amer., Ann. 21: 382. — Krombein, 1960. Ent. News 71: 32, 68.

Morphology: Burks, 1966. Ent. News 77: 199-202 (immature stages).

Genus BEPHRATOIDES Brues

Bephratoides Brues, 1909 (1908). Wis. Nat. Hist. Soc., Bul. 6: 158.

Type-species: *Bephratoides maculatus* Brues. Orig. desig.

agrili (Ashmead). N. J., Va., W. Va. Host: *Agrilus otiosus* Say.

Eurytoma agrili Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 325. ♀.

maculatus Brues. Tex.; Mexico. Ecology: Bred from mesquite infested with wood-boring Coleoptera.

Bephratoides maculatus Brues, 1909 (1908). Wis. Nat. Hist. Soc., Bul. 6: 158. ♀.

Genus IPIDEURYTOMA Boucek and Novicky

Ipideurytoma Boucek and Novicky 1954. Ent. Tidskr. 75: 267.

Type-species: *Ipideurytoma spessirtsevi* Boucek and Novicky. Orig. desig.

polygraphi (Ashmead). N. Y., W. Va., Colo., B. C. Host: *Polygraphus* sp., *Trypodendron* sp.

This and the European species, *spessirtsevi* Boucek and Novicky, are very closely related, and they may be synonyms.

Decatomea polygraphi Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 322. ♀.

Taxonomy: Bugbee, 1956. Ent. Soc. Amer., Ann. 49: 506.

Genus CHRYSEIDA Spinola

Chryseida Spinola, 1840. Rev. Zool. 3: 18.

Type-species: *Chryseida superciliosa* Spinola. Monotypic.

Revision: Burks, 1956. Brooklyn Ent. Soc., Bul. 51: 109-116.

bennetti Burks. Tex.; Mexico, West Indies. Ecology: Reared from bruchids in the seeds of *Havardia brevifolia*, *Rhynchosia* sp., and *Cajanus cajan*.

Chryseida bennetti Burks, 1956. Brooklyn Ent. Soc., Bul. 51: 115. ♀.

inopinata Brues. Tex.; Mexico. Ecology: Reared from bruchids in leguminous seeds.

Chryseida inopinata Brues, 1907. Wis. Nat. Hist. Soc., Bul. 5: 103. ♀.

SUBFAMILY HEIMBRINAE

Genus HEIMBRA Cameron

Heimbra Cameron, 1910. Amer. Ent. Soc., Trans. 35: 433.

Type-species: *Heimbra acuticollis* Cameron. Monotypic.

Taxonomy: Burks, 1971. Amer. Ent. Soc., Trans. 97: 54-56.

opaca (Ashmead). Kans., Mont., Colo., N. Mex., Utah, Ariz., Calif.

Euperilampus opacus Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 318. ♀.

Taxonomy: Crawford, 1914. Ent. Soc. Wash., Proc. 16: 69 (type abnormal; sp. belongs in

Eurytoma). — Burks, 1971. Amer. Ent. Soc., Trans. 97: 56 (nomenclature).

SUBFAMILY PRODECATOMINAE

Genus PRODECATOMA Ashmead

Prodecatoma Ashmead, 1904. Carnegie Mus., Mem. 1: 261, 263, 463.

Type-species: *Prodecatoma flavescens* Ashmead Orig. desig.

cooki (Howard). Conn., N. Y., Md., Va., Fla., Ohio, Mich., Calif. Ecology: Develops in seeds of wild and cultivated grapes and some nearly related Vitaceae. Host: *Parthenocissus quinquefolia*, *Vitis* sp., *V. californica*, *V. labrusca*.
Decatomidea cooki Howard, 1896. U. S. Dept. Agr., Div. Ent., Tech. Ser. 2: 23. ♀, ♂.
Prodecatoma phytophaga Crosby, 1909. Canad. Ent. 41: 50. ♀, ♂.

Taxonomy: Gahan, 1951. Canad. Ent. 83: 173-174 (types).

Biology: Crosby, 1909. N. Y. Agr. Expt. Sta., Bul. 265: 382. — Rohwer, 1913. U. S. Dept. Agr., Bur. Ent., Tech. Ser. 20: 158 (oviposition).

Morphology: Bugbee, 1936. Ent. Amer. 16: 178.

maga (Girault). Calif. Host: *Andricus chrysolepidicola* (Ashm.), *Disholcaspis plumbella* Kinsey.

Eurytoma hegeli var. *maga* Girault, 1920. U. S. Natl. Mus., Proc. 58: 207. ♀, ♂.

Taxonomy: Peck, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 577 (change from var. to sp.).

Genus BEPHRATELLOIDES Girault

Bephratoides Girault, 1913. Arch. f. Naturgesch. 79 A (6): 60. Preocc. by Brues, 1908.

Type-species: *Bephrata paraguayensis* Crawford. Orig. desig.

Bephratelloides Girault, 1913. Ent. News 24: 459. N. name.

This genus has for many years taken the name *Bephrata* Cameron, 1884. A recent study of the type of the the type-species of *Bephrata* showed that the true *Bephrata* is quite different and has been misidentified since the time of Ashmead, 1888.

Taxonomy: Burks, 1971. Amer. Ent. Soc., Trans. 97: 26-27.

cubensis (Ashmead). Fla.; West Indies, Mexico, Cent. and S. Amer. Ecology: Develops in the seeds of Soursop, Cherimoya, Sugar-apple or Sweetsop, and Custard-apple, *Annona* spp.
 Host: *Annona cherimola*, *A. muricata*, *A. reticulata*, *A. squamosa*.

Bephrata cubensis Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 321. ♀.

Biology: Crawford, 1911. U. S. Natl. Mus., Proc. 41: 274. — Bruner and Acuna, 1923. Estacion Expt. Agron., Santiago, Cuba, pp. 3-12 (life history). — Dozier, 1932. Porto Rico Dept. Agr., Jour. 16: 109-112. — Osorio, 1937. Rev. Agr. Habana 2: 10-19 (reproduction). — Alvarado, 1939. Los ins. daninos ... en Guatemala, pp. 267-270. — Martorell, 1945. Puerto Rico Univ., Jour. Agr. 29: 557.

SUBFAMILY EURYTOMINAE

Genus TENUIPETIOLUS Bugbee

Tenuipetiolus Bugbee, 1951. Kans. Ent. Soc., Jour. 24: 37.

Type-species: *Eurytoma albipes* Ashmead. Orig. desig.

medicaginis (Gahan). Tex., Ariz., Calif.; Mexico. Ecology: Parasitizes dipterous hosts in galled seed pods of alfalfa and *Mentzelia*. Host: *Asphondylia mentzeliae* Ckll., *A. websteri* Felt.

Eurytoma medicaginis Gahan, 1919. Ent. Soc. Amer., Ann. 12: 159. ♀, ♂.

mentha Bugbee. N. Mex. Ecology: Parasitizes dipterous larvae in pods of *Poliomintha incana*.

Tenuipetiolus mentha Bugbee, 1951. Kans. Ent. Soc., Jour. 24: 38, 44. ♀, ♂.

ruber Bugbee. N. Y., s. to Va., w. to Tenn. and Ariz. Ecology: Parasite of gall makers on Rosaceae. Host: *Diastrophus cuscuteaformis* O. S., *D. nebulosus* (O. S.), *Diplolepis rosae* (L.).

Tenuipetiolus rubra Bugbee, 1951. Kans. Ent. Soc., Jour. 24: 39. ♀, ♂.

teredon (Walker). N. Y., Va., N. C., Fla., Miss., Kans., Tex. Ecology: Emerges from cecidomyiid galls on *Ambrosia*, *Helianthus*, *Xanthium*. Host: *Asphondylia helianthiglobulus* O. S.

Eurytoma teredon Walker, 1843. Soc. Ent. de France, Ann. (2) 1: 153. ♀, ♂.

Eurytoma albipes Ashmead, 1881. Amer. Ent. Soc., Trans. 9: Proc. p. xxxi. ♀, ♂.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 163 (syn.; lectotype designated).

Genus PHYLLOXEROXENUS Ashmead

Phylloxeroxenus Ashmead, 1888. Ent. Amer. 2: 42-43. No species. — Ashmead, 1894. Amer.

Ent. Soc., Trans. 21: 328. One species.

Type-species: *Eurytoma phylloxerae* Ashmead. Desig. by Ashmead, 1894. *phylloxerae* (Ashmead). N. Y., Va., Fla., La. Ecology: Reared from *Phylloxera* galls, but probably parasitic on cecidomyiid larvae living in those galls. Recorded from galls of *Phylloxera caryaecaulis* Fitch, *P. caryaescissae* Riley, *P. deplanata* Pergande. *Eurytoma phylloxerae* Ashmead, 1881. Amer. Ent. Soc., Trans. 9: Proc. p. xxx. ♀.

Genus EURYTOMOCHARIS Ashmead

Eurytomocharis Ashmead, 1888. Ent. Amer. 4: 42-43. No species. — Ashmead, 1894. Amer.

Ent. Soc., Trans. 21: 327. One species.

Type-species: *Eurytomocharis minuta* Ashmead. Desig. by Ashmead, 1894.

Revision: Bugbee, 1966. Amer. Midland Nat. 75: 367-382.

Taxonomy: Bugbee, 1966. Ent. Soc. Amer., Ann. 49: 505-506 (generic characters).

armillata Bugbee. S. Dak. Host: *Spartina* sp.

Eurytomocharis armillata Bugbee, 1966. Amer. Midland Nat. 75: 373. ♀.

ashmeadi (Peck). Fla.

Eurytomocharis minuta Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 327. ♀, ♂. Preocc. by Walker, 1832, when *minuta* Ashmead was transferred to *Eurytoma* in 1951.

Eurytoma ashmeadi Peck, 1951. In Muesebeck et al., U. S. Dept. Agr., Agr. Monog. 2: 575. N. name.

eragrostidis Howard. N. Y., D. C., Ind., Ill., Iowa, N. Mex. Host: *Agropyron* sp., *Agrostis alba*, *Andropogon saccharoides*, *Eragrostis ciliauensis*, *E. erosa*, *E. poaoides*, *Muhlenbergia porteri*, *M. wrightii*, *Oryzopsis hymenoides*, *Sporobolus airoides*.

Eurytomocharis eragrostidis Howard, 1896. U. S. Dept. Agr., Div. Ent., Tech. Ser. 2: 21. ♀, ♂.

Taxonomy: Bugbee, 1966. Amer. Midland Nat. 75: 380 (may be a complex).

glyceriae Bugbee. Ind. Host: *Glyceria striata*.

Eurytomocharis glyceriae Bugbee, 1966. Amer. Midland Nat. 75: 374. ♀, ♂.

muhlenbergiae (Howard). Mo. Host: *Muhlenbergia schreberi*.

Isosomomorpha muhlenbergiae Howard, 1896. U. S. Dept. Agr., Div. Ent., Tech. Ser. 2: 20. ♀.

Taxonomy: Bugbee, 1966. Amer. Midland Nat. 75: 378 (may not belong in *Eurytomocharis*).

pascuorum Bugbee. N. Mex. Host: *Bouteloua curtipendula*, *B. gracilis*, *Eragrostis erosa*, *Stipa comata*.

Eurytomocharis pascuorum Bugbee, 1966. Amer. Midland Nat. 75: 376. ♀, ♂.

planitiae Bugbee. Iowa, N. Mex. Host: *Bouteloua curtipendula*, *B. gracilis*.

Eurytomocharis planitiae Bugbee, 1966. Amer. Midland Nat. 75: 376. ♀, ♂.

pythes (Walker). Fla.

Eurytoma pythes Walker, 1843. Soc. Ent. de France, Ann. (2) 1: 154. ♀.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 163.

sporoboli Bugbee. N. Mex. Host: *Sporobolus airoides*.

Eurytomocharis sporoboli Bugbee, 1966. Amer. Midland Nat. 75: 373. ♀, ♂.

triodiae Howard. N. Y., D. C., Va., Mich., Ind., Kans. Host: *Triodia flava*.

Eurytomocharis triodiae Howard, 1896. U. S. Dept. Agr., Div. Ent., Tech. Ser. 2: 21. ♀, ♂.

Biology: Bugbee, 1966. Amer. Midland Nat. 75: 378 (life hist.).

Genus EVOXYSOMA Ashmead

Evoxysoma Ashmead, 1888. Ent. Amer. 4: 42-43. No species. — Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 328. One species.

Type-species: *Systole brachyptera* Ashmead. Desig. by Ashmead, 1894.

Evoxysoma Dalla Torre, 1898. Cat. Hym., v. 5, p. 345. Emend.

Euxysoma Cameron, 1905. Ztschr. Syst. Hym. Dipt. 5: 344. Misspelling.

brachyptera (Ashmead). Fla.

Systole brachyptera Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 126. ♀.

vitis (Saunders). Conn., Ont., N. Y., N. J., N. C., Ohio, Mo. Ecology: Develops in seeds of wild and cultivated grape; its development in the seeds causes grape fruits to wither. Host: *Vitis* sp.

Isosoma vitis Saunders, 1869. Canad. Ent. 2: 25. ♀, ♂.

Taxonomy: Bugbee, 1967. U. S. Natl. Mus., Proc. 118: 516.

Biology: Riley, 1870. Mo. State Bd. Agr., Ann. Rpt. 5: 92-93. — Saunders, 1871. Ont. Fruit Growers Assoc., Ann. Rpt. 1870: 109-111. — Crosby, 1909. N. Y. Agr. Expt. Sta., Bul. 265: 380. — Rohwer, 1913. U. S. Dept. Agr., Bur. Ent., Tech. Ser. 20: 158 (oviposition).

Genus BRUCHOPHAGUS Ashmead

Bruchophagus Ashmead, 1888. Ent. Amer. 4: 42, 43. No species. — Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 328. Three species.

Type-species: *Bruchophagus borealis* Ashmead. Desig. by Ashmead, 1894.

Systolodes Ashmead, 1888. Ent. Amer. 4: 42, 43. No species. — Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 320. One species.

Type-species: *Systolodes brevicornis* Ashmead. Desig. by Ashmead, 1894

This genus contains the best known species of seed chalcids, most of them developing in leguminous seeds. In 1888, when Ashmead named the genus, he thought that its species parasitized bruchids that developed in leguminous seeds. Even after the phytophagous nature of some of the species had been clearly demonstrated, he refused to accept it. As late as 1904, long after the clover seed chalcids had been shown by competent workers to be phytophagous, he wrote: Dr. A. D. Hopkins claims that *Bruchophagus funebris* is phytophagous and states he has proven it by a series of experiments. I think, however, some mistake has been made and I cannot accept Dr. Hopkins' observation as conclusive. ...I am inclined to think that both Drs. Howard and Hopkins are wrong, and that *Bruchophagus funebris* is a parasite upon some *Bruchus* (Carnegie Mus., Mem. 1: 260).

Taxonomy: Girault, 1916. Canad. Ent. 48: 338-339 (brief review of spp.). — Boucek, 1954. Mus. Natl. Pragae, Acta Ent. 30: 76 (subg. of *Eurytoma*). — Fedoseeva, 1954. Mosk. Univ. Vestnik 9 (5): 113-118. — Fedoseeva, 1958. Zool. Zhur. 37: 1345-1351. — Claridge, 1961. Soc. Brit. Ent., Trans. 14: 178.

Biology: Burks, 1958 (1957). Ent. Soc. Wash., Proc. 59: 273-277 (hosts). — Fedoseeva, 1960. Nauch. Dok. Vyssh. Shkoly. Biol. 3: 14-18 (ecology).

borealis Ashmead. Ont. Originally said to have been bred from a *Bruchus*, but that is almost certainly incorrect.

Bruchophagus borealis Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 328. ♀, ♂.

Taxonomy: Girault, 1916. Canad. Ent. 4: 338.

caraganae (Nikolskaja). Man., N. Dak., Sask.; Europe, Asia. Host: *Caragana arborescens*, *C. frutex*, *C. pygmaea*, *C. sophoraefolia*.

Eurytoma caraganae Nikol'skaya, 1952. Opred. Faune SSSR 44: 176, 187. ♀, ♂

Taxonomy: Bugbee, 1956. Ent. Soc. Amer., Ann. 49: 505.

Biology: Znoiko, 1952. Ent. Obozr. 32: 49-55 (life history and parasites in Palearctic region). — Hedlin, 1957 (1956). Canad. Ent. 88: 622-625 (in Nearctic region).

gibbus (Boheman). Cosmopolitan; common throughout North America. Host: *Melilotus* sp., *Trifolium* sp. Clover seed chalcid.

Eurytoma gibba Boheman, 1836 (1835). Svenska Vetensk. Akad., Handl. 56: 244. ♀.

Eurytoma mucianus Walker, 1848. List Hym. Ins. Brit. Mus. 2: 152. ♂.
Eurytoma funebris Howard, 1880. U. S. Dept. Agr., Ann. Rept. for 1879, p. 196. ♀, ♂.
Systolodes brevicornis Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 320. ♀, ♂.

Taxonomy: Nikolskaja, 1932. Plant Prot., Leningrad, fasc. 1: 107-109 (syn.). —Ferriere, 1950. Schweiz. Ent. Gesell., Mitt. 23: 39 (syn.). —Hellen, 1953. Notulae Ent. 33: 18 (*platyptera*). —Fedoseeva, 1954. Mosk. Univ. Vestnik 9: 115, 117 (*gibbus*). —Claridge, 1959. Ent. Monthly Mag. 95: 38 (*platyptera*). —Strong, 1962. Ent. Soc. Amer., Ann. 55: 1-4 (*gibbus*). —Graham, 1970. Roy. Ent. Soc. London, Proc., Series B: Taxonomy, 39: 145 (*gibbus*).

Biology: Hopkins, 1896. U. S. Dept. Agr., Div. Ent., Bul. (n. s.) 6: 73 (*funebris*, phytophagous). —Hopkins, 1898. U. S. Dept. Agr., Div. Ent., Bul. (n. s.) 17: 45 (*funebris*). —Pettit, 1899. Mich. Agr. Expt. Sta., Bul. 175: 366 (*funebris*). —Titus, 1904. U. S. Dept. Agr., Div. Ent., Bul. (n. s.) 44: 77-80 (*funebris*). —Folsom, 1909. In Forbes, Ill. State Ent., Ann. Rpt. 25: 50-61 (*funebris*). —Pettit, 1910. Mich. Agr. Expt. Sta., Bul. 258: 48-49 (*funebris*). —Gossard, 1911. Ohio Agr. Expt. Sta., Bul. 233: 77 (*funebris*). —Kurdjumov, 1912. Mess. Ent. Kiev 1: 86-88 (*gibba*). —Howard, 1914. U. S. Dept. Agr., Ann. Rpt. Ent. 1914: 192 (*funebris*). —Essig, 1915. Calif. State Comn. Hort., Monthly Bul. 4: 368 (*funebris*). —Crosby and Leonard, 1916. N. Y. State Dept. Agr., Bul. 87: 2870 (*funebris*). —Washburn, 1918. Minn. State Ent., Ann. Rpt. 17: 190 (*funebris*). —Urbahns, 1919. Jour. Agr. Res. 16: 165-173 (*funebris*, parasites). —Urbahns, 1920. U. S. Dept. Agr., Bul. 812: 1-19 (*funebris*, life history, parasites). —Sorenson, 1930. Utah Agr. Expt. Sta., Bul. 218: 1-33 (*funebris*). —Bigger, 1936. Ill. State Acad. Sci., Trans. 28: 62 (*funebris*, influence on clover production). —Smith, 1943. Kans. State Bd. Agr., Rpt. 62: 395 (*funebris*). —Shull, 1944. Idaho Agr. Expt. Sta., Bul. 252: 15, 56 (*gibbus*). —Kolobova, 1950. Ent. Obozr. 31: 63-70 (*gibbus*). —Sorenson and Knowlton, 1951. Utah Agr. Expt. Sta., Ext. Bul. 219: 1-2 (*gibbus*). —Lofgren, 1956. S. Dak. Agr. Expt. Sta., Ext. Cir. 533: 7-8 (*gibbus*). —Rosen, 1959. Swed. Stat. Vaxt. Vaxt. 23: 56 (*gibba*). —Perju, 1961. Cluj. Inst. Agron. 17: 233 (*gibbus*). —Carillo and Dickason, 1963. Oreg. State Univ. Agr. Exp. Sta., Tech. Bul. 68: 11 (*gibbus*).

mexicanus Ashmead, Tex., N. Mex., Idaho, Utah., Ariz., Calif. Host: *Astragalus* sp., *A. mollissimus*. Loco-weed chalcid.

Bruchophagus mexicanus Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 328. ♀, ♂.

Biology: Trelease and Trelease, 1937. Science 85: 590 (immunity to selenium).

noctua Girault. Ariz.

Bruchophagus noctua Girault, 1917. New Chalcid Flies, p. 1a.

platypterus (Walker). Cosmopolitan; widely distributed in North America. Host: *Lotus* sp., *L. corniculatus*. Trefoil seed chalcid.

Systole platyptera Walker, 1834. Ent. Mag. 2: 153.

Bruchophagus kolobovae Fedoseeva, 1956. Akad. Nauk. SSSR Dok. 111: 491. ♀, ♂.

Taxonomy: Fedoseeva, 1958. Zool. Zhur. 37: 1349. —Perju, 1960. Acad. RPR Bucharest, Comun. 10: 575. —Szelenyi, 1961. Budapest. Noven. Kut. Inst., Evkon 8: 133, 136. —Strong, 1962. Ent. Soc. Amer., Ann. 55: 1-4 (*kolobovae*). —Graham, 1970. Roy. Ent. Soc. London, Proc., Series B: Taxonomy 39: 143 (syn.).

Biology: Crevecoeur, 1946. Soc. Ent. de Belg., Bul. et Ann. 82: 273 (*gibbus*). —Neunzig and Gyrisco, 1958. Jour. Econ. Ent. 51: 409 (*Bruchophagus* sp.). —Batiste, 1967. Hilgardia 38: 427 (*kolobovae*, immature stages).

roddi (Gussakovsky). Cosmopolitan; widely distributed in North America. Host: *Medicago* sp., *M. arabica*, *M. hispida*, *M. sativa*. Alfalfa seed chalcid.

Euryfoma(?) roddi Gussakovsky, 1933. In Rodd, Gussakovsky, and Antova, Pests of dry-farming crops of Central Asia, Tashkent, pp. 122, 150. ♀, ♂.

Bruchophagus gibbus medicaginis Kolobova, 1950. Ent. Obozr. 31: 70. ♀, ♂.

Taxonomy: Nikolskaja, 1952 (English trans. 1963). Keys to Fauna USSR 44: 173, 175.

—Fedoseeva, 1954. Mosk. Univ. Vestnik 9 (5): 116. —Fedoseeva, 1958. Zool. Zhur. 37: 1349.

—Perju, 1960. Acad. RPR Bucharest, Comun. 10: 575. —Strong, 1962. Ent. Soc., Amer., Ann. 55: 1-4.

Biology: Sorenson, 1934. Utah. Acad. Sci., Proc. 11: 241-244 (*funebis*). — Harin, 1934. Central Asia Cotton Inst., Bul. 4-5: 85-114 (*gibbus*). — Wille, 1943. Estac. Expt. Agr. de La Molina, p. 357 (*funebis*). — Figuero and Lima, 1940. Bol. de Agr. Sao Paulo 41: 307 (*gibbus*). — Strong, 1962. Hilgardia 32: 229-248. — Carillo and Dickason, 1963. Oreg. State Univ. Agr. Expt. Sta., Tech. Bul. 68: 25. — Strong *et al.*, 1963. Hilgardia 35: 1-12. — Kralovic, 1964. Biologia, Bratislava 19: 620 (length of life).

sculptus (Ashmead). Fla.

Eurytoma sculpta Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 195. ♀.

Taxonomy: Bugbee, 1956. Ent. Soc. Amer., Ann. 49: 505.

Genus EURYTOMA Illiger

Eurytoma Illiger, 1807. Mag. f. Insektenkunde 6: 192.

Type-species: *Chalcis abrotani* Panzer. Desig. by Westwood, 1840.

Decatoma Spinola, 1811. Mus. d'Hist. Nat., Ann. 17: 151.

Type-species: *Diplolepis adonidum* Rossi. Desig. by Ashmead, 1894.

Eunetoma Dahlbom, 1857. Ofvers. Svensk. Vet. Akad., Forh. 14: 292.

Type-species: *Chalcis abrotani* Panzer. Desig. by Gahan and Fagan, 1923.

Enneatoma Dalla Torre, 1898. Cat. Hym. 5: 332. Emend.

Bephratella Girault, 1913. Arch. f. Naturgesch. 79(6): 95.

Type-species: *Bephratella nympa* Girault. Orig. desig.

Eurytoma subg. *Dieurytoma* Erdos, 1957. Allat. Kozlem. 46: 61.

Type-species: *Eurytoma amygdali* Enderlein. Orig. desig.

Eurytoma subg. *Hydateurytoma* Erdos, 1957. Allat. Kozlem. 46: 58.

Type-species: *Eurytoma palustris* Erdos. Orig. desig.

Eurytoma subg. *Moneurytoma* Erdos, 1957. Allat. Kozlem. 46: 59.

Type-species: *Eurytoma aquatica* Erdos. Orig. desig.

Some species of *Eurytoma* are phytophagous, others pass part of their larval development as parasites and then complete their growth by feeding on plant tissues, but the bulk of the species are primary or secondary parasites. Many species are placed in *Eurytoma* not because they are greatly like the type-species, but because it has not as yet been possible to place them elsewhere.

Revision: Bugbee, 1967. U. S. Natl. Mus., Proc. 118: 433-552.

Taxonomy: Claridge, 1959. Ent. Monthly Mag. 95: 2 (identity of type-species). — Graham,

1970. Roy. Soc. London, Proc., Series B: Taxonomy 39: 145-152 (Palearctic species).

abatos Walker. Que., s. to Fla., w. to B. C., Oreg., and Colo. Host: *Magdalis arnicollis* (Say),

Scolytus multistriatus (Marsh.), *S. rugulosus* (Ratz.).

Eurytoma abatos Walker, 1843. Soc. Ent. de France, Ann. (2) 1: 152. ♀.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 162 (syn.).

Eurytoma crassineura Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 324-327 ♀, ♂.

acuta absona Bugbee. Colo. Host: *Diplolepis* sp.

Eurytoma acuta absona Bugbee, 1951. Ent. Soc. Amer., Ann. 44: 230. ♀, ♂.

acuta acuta Bugbee. Utah. Host: *Diplolepis arefacta* (Gill.), *D. tuberculatrix* (Ckll.).

Eurytoma acuta acuta Bugbee, 1951. Ent. Soc. Amer., Ann. 44: 225. ♀, ♂.

acuta gemina Bugbee. Ariz.

Eurytoma acuta gemina Bugbee, 1951. Ent. Soc. Amer., Ann. 44: 232. ♀, ♂.

acuta intermedia Bugbee. N. Dak. Host: *Diplolepis* sp.

Eurytoma acuta intermedia Bugbee, 1951. Ent. Soc. Amer., Ann. 44: 228. ♀, ♂.

acuta ramosa Bugbee. Mich., Minn., Man. Host: *Diplolepis tuberculatrix* (Ckll.).

Eurytoma acuta ramosa Bugbee, 1951. Ent. Soc. Amer., Ann. 44: 229. ♀, ♂.

altifossa Bugbee. Man. Ecology: Emerged from unknown gall on *Oxytropis lamberti*.

Eurytoma altifossa Bugbee, 1967. U. S. Natl. Mus., Proc. 118: 487. ♀, ♂.

apiculae Bugbee. Calif. Host: *Ceratina dallatorreana* Friesse, *C. nanula* Ckll., *C. punctigena*

Ckll., *Ectemnius spiniferus* (Fox).

Eurytoma apiculae Bugbee, 1966. Pan-Pacific Ent. 42: 210. ♀, ♂.

- Biology: Daly *et al.*, 1967. Ent. Soc. Amer., Ann. 60: 1279.
- appendigaster** (Swederus). Ont., N. B., Maine, s. to N. J., w. to N. Y., Pa.; Europe. Probably inadvertently introduced from Europe along with *Apanteles*. Host: *Apanteles melanoscelus* (Ratz.), *Cremastus minor* Cush.; *Compsilura concinnata* (Meig.). *Pteromalus Appendigaster* Swederus, 1795. Svenska Vetensk. Akad. Handl. 16: 217.
- Taxonomy: Ferriere, 1950. Schweiz. Ent. Gesell., Mitt. 23: 383 (types). — Claridge, 1959. Ent. Monthly Mag. 95: 4. — Claridge, 1960. Ent. Medd. 29: 248 (*appendigaster* Mayr not Swederus = *verticillata* F.).
- Biology: Muesebeck and Dohanian, 1927. U. S. Dept. Agr., Bul. 1487: 20-21. — Worowski, 1934. Wydaw. Szk. Glow. Gospod. Wiej. 1: 5 (secondary parasite of Gypsy moth). — Rosenberg, 1935. Bul. Ent. Res. 25: 244-246 (immature stages). — Allen *et al.*, 1940. U. S. Dept. Agr., Cir. 561: 50. — Haeussler, 1940. U. S. Dept. Agr., Tech. Bul. 728: 34-35, 52-54 (primary and secondary parasite). — Parker, 1951. U. S. Dept. Agr., Tech. Bul. 1036: 19 (immature stages). — Wilbert, 1960. Entomophaga 5: 203. — Allen, 1962. U. S. Dept. Agr., Tech. Bul. 1265: 106-108. — Zelinskaya, 1964. In Kasianenko, Akad. Nauk Ukraine RSR Inst. Zool., Trudy 20: 199. — Stone, 1965. U. S. Dept. Agr., Tech. Bul. 1321: 24.
- atripes** Gahan. N. Y., Pa., N. J., Md., Ohio, Tenn., N. Dak., Alta., Wash., Oreg. Host: *Mayetiola destructor* (Say); *Cephus cinctus* Nort.
- Eurytoma atripes* Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 36. ♀, ♂.
- Biology: Nelson, 1953. Canad. Ent. 85: 249-251.
- Morphology: Hill and Pinckney, 1940. U. S. Dept. Agr., Tech. Bul. 715: 8, 11-13 (immature stages).
- baccaae** Bugbee. Md., Kans. Host: *Ancylics camptana fragariae* (W. and R.). This species might also be a secondary parasite, attacking an ichneumonid primary parasite, *Temelucha cooki* (Weed).
- Eurytoma baccae* Bugbee, 1967. U. S. Natl. Mus., Proc. 118: 497. ♀.
- bicolor** Walsh. Conn. and Ont., s. to Va., w. to Nebr. Host: *Antistrophus minor* Gill., *A. lygodesmiaepisum* Walsh, *Aulacidea tumida* (Bass.); *Eurosta solidaginis* (Fitch).
- Eurytoma bicolor* Walsh, 1870. Amer. Ent. and Bot. 2: 298. ♀, ♂.
- bigeloviae** Ashmead. Colo., Utah, Calif. Host: *Aciurina bigeloviae* (Ckll.).
- Eurytoma bigeloviae* Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 25, 45. ♀.
- Eurytoma chalcidiformis* Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. V, p. 3. ♀.
- Taxonomy: Bugbee, 1956. Ent. Soc. Amer., Ann. 49: 504 (syn.).
- bolteri** Riley. Vt., s. to N. C., w. to N. Dak., Kans. Host: *Gnorimoschema gallaesolidaginis* (Riley).
- Eurytoma Bolteri* Riley, 1869. Mo. State Bd. Agr., Ann. Rpt. 4: 177. ♀, ♂.
- Biology: Leiby, 1922. N. Y. Ent. Soc., Jour. 30: 93. — Barber, 1938. N. Y. Ent. Soc., Jour. 46: 173-175. — Miller, 1963. Ohio Jour. Sci. 63: 72.
- Morphology: Snodgrass, 1910. U. S. Natl. Mus., Proc. 39: 65, fig. 46 (thorax).
- brevivena** Bugbee. Ariz. Host: *Disholcaspis rubens* (Gill.).
- Eurytoma brevivena* Bugbee, 1958. Ent. Soc. Amer., Ann. 51: 198. ♀, ♂.
- bromi** (Howard). N. Y., Ohio, Calif. Host: *Bromus ciliatus*.
- Isosoma bromi* Howard, 1896. U. S. Dept. Agr., Div. Ent., Tech. Ser. 2: 11. ♀, ♂.
- Taxonomy: Bugbee, 1956. Ent. Soc. Amer., Ann. 49: 505.
- calcareae** **calcareae** Bugbee. Utah. Host: *Diptolepis variabilis* (Bass.).
- Eurytoma calcareae calcareae* Bugbee, 1951. Ent. Soc. Amer., Ann. 44: 242. ♀, ♂.
- calcareae ignobilis** Bugbee. Nebr. Host: *Diptolepis bicolor* (Harr.).
- Eurytoma calcareae ignobilis* Bugbee, 1951. Ent. Soc. Amer., Ann. 44: 243. ♀, ♂.
- calcareae infima** Bugbee. Ill. Host: *Diptolepis bicolor* (Harr.).
- Eurytoma calcareae infima* Bugbee, 1951. Ent. Soc. Amer., Ann. 44: 246. ♀, ♂.
- calcareae lucida** Bugbee. Ill. Host: *Diptolepis bicolor* (Harr.).
- Eurytoma calcareae lucida* Bugbee, 1951. Ent. Soc. Amer., Ann. 44: 245. ♀, ♂.

- calcareae mimica** Bugbee. Maine, Mass. Host: *Diptolepis bicolor* (Harr.).
Eurytoma calcareae mimica Bugbee, 1951. Ent. Soc. Amer., Ann. 44: 247. ♀, ♂.
- calcareae singularis** Bugbee. Mass. Host: *Diptolepis nebulosa* (Bass.).
Eurytoma calcareae singularis Bugbee, 1951. Ent. Soc. Amer., Ann. 44: 248. ♀, ♂.
- californica californica** Ashmead. Wash., Oreg., Calif. Host: *Andricus quercuscalifornicus* (Bass.), *Callirhytis quercuspomiformis* (Bass.), *Disholcaspis corallina* (Bass.), *D. plumbella* Kinsey, *D. washingtonensis* (Gill.).
Eurytoma californica Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 195. ♀, ♂.
- californica nana** Bugbee. Calif. Host: *Callirhytis quercuspomiformis* (Bass.). Sexual generation, leaf galls.
Eurytoma californica nana Bugbee, 1969. Pan-Pacific Ent. 45: 63. ♀, ♂.
- calycis** Bugbee. Ont. Ecology: Develop in young pine shoots, infested shoots showing distortion and retarded growth. Host: *Pinus banksiana*.
Eurytoma calycis Bugbee, 1961. Canad. Ent. 93: 33. ♀, ♂.
- Biology: Thomas and Herdy, 1961. Canad. Ent. 93: 34-39.
- ceanothi** Bugbee. Ariz. Host: *Ceanothus greggii* seeds.
Eurytoma ceanothi Bugbee, 1971. Kans. Ent. Soc., Jour. 44: 111. ♀, ♂.
- celtigalla** Bugbee. Tex. Ecology: Emerges from leaf or twig galls on *Celtis*. Host: *Mayetiola celtiphylia* Felt.
Eurytoma celtigalla Bugbee, 1957. Kans. Ent. Soc., Jour. 30: 49. ♀, ♂.
- cleri** Ashmead. Que. and N. Y., s. to N. C., w. to Mont., N. Mex., Calif. Host: *Dendroctonus frontalis* Zimm., *D. monticolae* Hopk., *Ips confusus* (Lec.), *I. oregoni* (Eich.), *Pissodes strobi* (Peck). When originally described thought, incorrectly, to parasitize a clerid beetle.
Eurytoma cleri Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 323. ♀.
- Taxonomy: Bugbee, 1970. Ent. Soc. Amer., Ann. 63: 435.
- conica** Provancher. Que., Ont., s. to N. C., w. to B. C., Oreg., Calif. Host: *Cylindrocopturus longulus* (Lec.), *Dendroctonus brevicornis* Lec., *D. frontalis* Zimm., *Phloeosinus dentatus* Lec., *Pissodes strobi* (Peck).
Eurytoma conica Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., pp. 192, 438. ♀.
- Eurytoma phloeosini* Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 327. ♂.
Isosoma abnorme Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 219. ♀.
- Taxonomy: Bugbee, 1956. Ent. Soc. Amer., Ann. 49: 504 (syn.). — Burks, 1964 (1963). Canad. Ent. 95: 1259 (Provancher type).
- contractura** Bugbee. Ont. Host: *Melanagromyza schineri* (Giraud).
Eurytoma contractura Bugbee, 1967. U. S. Natl. Mus., Proc. 118: 471. ♀, ♂.
- crassa** Bugbee. Ohio, Ind., Ill., La., Tex., N. Mex. Host: *Aciurina notata* (Coq.), *Callachna gibba* (Loew).
Eurytoma crassa Bugbee, 1967. U. S. Natl. Mus., Proc. 118: 488. ♀, ♂.
- diastrophii** Walsh. Que., s. to N. C., w. to Colo., N. Mex. Ecology: Should occur wherever blackberry grows. Host: *Diastrophus cuscuteformis* O. S., *D. nebulosus* (O. S.), *D. niger* Bass.
Eurytoma diastrophii Walsh, 1870. Amer. Ent. and Bot. 2: 299. ♀, ♂.
- discordans** Bugbee. Que., Ont., Maine, Mass., Va., Mich., Ind., Wis., Alta. Host: *Diptolepis variabilis* (Bass.), *Periclistus pirata* (O. S.), *Synophromorpha sylvestris* (O. S.).
Eurytoma discordans Bugbee, 1951. Ent. Soc. Amer., Ann. 44: 218, 220. ♀, ♂.
- dorcaschetae** Ashmead. N. J., N. C., Kans., Sask. Host: *Dorcaschema alternatum* (Say).
Eurytoma dorcaschetae Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App. p. II.
- extremitatis** Bugbee. Va. Host: *Rhyacionia frustrana* (Comst.).
Eurytoma extremitatis Bugbee, 1968. Kans. Ent. Soc., Jour. 41: 404. ♀, ♂.
- flavicurensa** Bugbee. Oreg. Host: *Diptolepis polita* (Ashm.).
Eurytoma flavicurensa Bugbee, 1951. Ent. Soc. Amer., Ann. 44: 258. ♀.

- flavicus** Bugbee. S. C. Ecology: Reared from undetermined gall on *Nyssa sylvatica*.
Eurytoma flavicus Bugbee, 1967. U. S. Natl. Mus., Proc. 118: 469. ♀, ♂.
- flavifacies** Bugbee. Calif. Host: *Andricus chrysolepidicola* (Ashm.).
Eurytoma flavifacies Bugbee, 1969. Pan-Pacific Ent. 45: 62. ♀, ♂.
- flavovultus** Bugbee. Tex. Host: *Pachypsilla venusta* (O. S.).
Eurytoma flavovultus Bugbee, 1957. Kans. Ent. Soc., Jour. 30: 45. ♀, ♂.
- foligalla** Bugbee. Calif. Host: *Antron douglassii* (Ashm.), *A. quercusechinus* (O. S.), *Besbicus multipunctatus* (Beut.), *Callirhytis quercuspomiformis* (Bass.), *Disholcaspis eldoradensis* (Beut.).
Eurytoma foligalla Bugbee, 1969. Pan-Pacific Ent. 45: 60. ♀, ♂.
- fossae** Bugbee. Calif. Ecology: Bred from willow galls produced by species of *Euura*; may parasitize the gall-maker or inquilines and parasites.
Eurytoma fossae Bugbee, 1967. U. S. Natl. Mus., Proc. 118: 484. ♀, ♂.
- furva** Bugbee. Calif. Host: *Disholcaspis washingtonensis* (Gill.).
Eurytoma furva Bugbee, 1958. Ent. Soc. Amer., Ann. 51: 198. ♀, ♂.
- fusca** Bugbee. N. Y., Kans., Wash. Ecology: Reared from apple curculio material;
Tachypterellus quadrigibbus (Say) and other species of *Tachypterellus* may be hosts.
Eurytoma fusca Bugbee, 1967. U. S. Natl. Mus., Proc. 118: 502. ♀, ♂.
- gigantea** Walsh. N. B., Que., Ont., s. to Fla., w. to N. W. T., Mont., Kans., Colo. Host: *Eurosta solidaginis* (Fitch).
Eurytoma gigantea Walsh, 1870. Amer. Ent. and Bot. 2: 300. ♀.
Callimome Duckeri Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 194. Nom. nud.
Ornyrus elongatus Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 194. Nom. nud.
Ornyrus prolongatus Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 194. Nom. nud.
- Taxonomy: Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 194-198 (male).
- Biology: Hughes, 1934. Ent. News 45: 119-122. —Uhler, 1951. Cornell Univ. Agr. Expt. Sta., Mem. 300: 41. —Judd, 1953. Canad. Ent. 85: 295. —Miller, 1959. Tenn. State Acad. Sci., Jour. 34: 249.
- gossypii** Bugbee. S. C., Ark., La., Okla., Tex., Ariz.; Mexico. Host: *Anthonomus grandis* Boh.
Eurytoma gossypii Bugbee, 1967. U. S. Natl. Mus., Proc. 118: 493. ♀, ♂.
- hecale** Walker. N. Y., s. to Fla., w. to Ill., Kans. Host: *Acraspis erinacei* (Beut.), *A. pezomachoides* (O. S.), *A. quercushirta* (Bass.), *Amphibolips cooki* Gill., *A. quercuspongifica* (O. S.), *Andricus ignotus* (Bass.), *A. pattoni* (Bass.), *A. quercusflocci* (Walsh), *A. quercusfoliatus* (Ashm.), *Callirhytis lanata* (Gill.), *C. seminator* (Harr.), *Disholcaspis quercusglobulus* (Fitch), *D. quercusmamma* (Walsh), *D. spongiosa* (Karsch), *Dryocosmus imbricariae* (Ashm.), *Sphaeroterus melleum* (Ashm.).
Eurytoma hecale Walker, 1843. Soc. Ent. de France, Ann. (2) 1: 151. ♀.
Eurytoma auriceps Walsh, 1870. Amer. Ent. and Bot. 2: 299. ♀, ♂.
Eurytoma auriceps var. *seminatrix* Walsh, 1870. Amer. Ent. and Bot. 2: 299. ♀, ♂.
Eurytoma vagabunda Ashmead, 1881. Canad. Ent. 13: 134. ♀.
- Taxonomy: Bugbee, 1956. Ent. Soc. Amer., Ann. 49: 503 (syn.). —Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 162 (syn.; lectotype designated).
- Biology: Triggerson, 1914. Ent. Soc. Amer., Ann. 7: 9-11 (*auriceps*).
- illinoisensis** Girault. N. S., Que., Ont., Wis., Ill., Iowa, S. Dak., N. Mex. Host: *Harmolita* sp.
Eurytoma illinoisensis Girault, 1920. U. S. Natl. Mus., Proc. 58: 206. ♀.
- imminuta** Bugbee. Utah, Nev., Oreg. Host: *Diptolepis variabilis* (Bass.).
Eurytoma imminuta Bugbee, 1951. Ent. Soc. Amer., Ann. 44: 259. ♀, ♂.
- incerta incerta** Fullaway. Sask., Oreg., Calif. Ecology: Reared from *Diptolepis* galls modified by inquilines. Host: *Periclistus piceus* Fullaway, *P. californicus* Ashm.
Eurytoma incerta Fullaway, 1912. N. Y. Ent. Soc., Jour. 20: 277. ♀, ♂.
- Taxonomy: Bugbee, 1951. Ent. Soc. Amer., Ann. 44: 237 (reduced to subsp.).
- incerta varia** Bugbee. Calif. Ecology: Reared from gall of *Diptolepis tuberculatrix* var. *descansonis* K. and A.
Eurytoma incerta varia Bugbee, 1951. Ent. Soc. Amer., Ann. 44: 237. ♀.

- iniqua** Bugbee. Colo. Host: *Diptolepis neglecta* (Gill).
Eurytoma iniquus Bugbee, 1951. Ent. Soc. Amer., Ann. 44: 253. ♀, ♂.
- inornata** Bugbee. Md. Host: *Euphilis (Corynopus) coarctata modesta* (Roh.), *E. (C.) rufigaster* (Pack.), *Trypoxylon* sp.
Eurytoma inornata Bugbee, 1962. Kans. Ent. Soc., Jour. 35: 347. ♀, ♂.
- Biology: Krombein, 1964. Biol. Soc. Wash., Proc. 77: 103-104.
- juniperina** Marcovitch. N. H., Conn., Ont., N. Y., Del., Minn., N. Dak. Ecology: Phytophagous form, developing in seeds of juniper. Host: *Juniperus virginiana*, *J. scopulorum*.
Eurytoma juniperinus Marcovitch, 1915. Ent. Soc. Amer., Ann. 8: 166. ♀, ♂.
Eurytoma juniperinus var. *Crosbyi* Marcovitch, 1915. Ent. Soc. Amer., Ann. 8: 168. ♀, ♂. N. syn.
- lacunae** Bugbee. Md. Ecology: Reared from a cecidomyiid gall on *Baccharis halimifolia*.
Eurytoma lacunae Bugbee, 1967. U. S. Natl. Mus., Proc. 118: 476. ♀, ♂.
- levivultus** Bugbee. Ohio. Host: *Pachypsylla celtidisgemma* Riley.
Eurytoma levivultus Bugbee, 1957. Kans. Ent. Soc., Jour. 30: 48. ♀, ♂.
- levo** Bugbee. Va. Ecology: Reared from pine gall made by a xyelid. Host: *Xyela gallicaulis* Smith.
Eurytoma levo Bugbee, 1967. U. S. Natl. Mus., Proc. 118: 499. ♀, ♂.
- longavena** Bugbee. B. C. Host: *Diptolepis bicolor* (Harr.).
Eurytoma longavena Bugbee, 1951. Ent. Soc. Amer., Ann. 44: 249. ♀, ♂.
- lutae** Bugbee. Mich. Ecology: Reared from a composite naturalized from Europe, *Inula helenium*.
Eurytoma lutae Bugbee, 1967. U. S. Natl. Mus., Proc. 118: 462. ♀, ♂.
- lycti** Ashmead. N. J., Md., Va., W. Va., Kans. Host: *Lyctus striatus* Melsh.
Eurytoma lycti Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 325. ♀.
- Taxonomy: Bugbee, 1951. Kans. Ent. Soc., Jour. 24: 38 (generic placement).
- magdalidis** Ashmead. Que., Ont., N. Y. Va., N. C., W. Va., Kans., Colo., Calif. Host: *Anthrribus cornutus* Say, *Cylindrocopturus longulus* (Lec.), *Magdalis armicollis* (Say), *Oncideres cingulata* (Say).
Eurytoma magdalidis Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 326. ♀.
- mali** Bugbee. N. Y., Wis., Kans., Wash. Host: *Tachypterellus consors cerasi* List, *T. quadrigibbus magnus* List., *T. q. quadrigibbus* (Say).
Eurytoma mali Bugbee, 1967. U. S. Natl. Mus., Proc. 118: 512. ♀, ♂.
- mammae** Bugbee. Va., W. Va., Ind. Ecology: Rearings suggest that host may be the scolytid beetle, *Leperisinus aculeatus* (Say) or the pemphredonine wasp, *Stigmus* sp.
Eurytoma mammae Bugbee, 1967. U. S. Natl. Mus., Proc. 118: 451. ♀.
- minnesota** Girault. Minn. Ecology: Reared from quackgrass, *Agropyron repens*.
Eurytoma minnesota Girault, 1916. Canad. Ent. 48: 338. ♀, ♂.
- neomexicana** Girault. Kans., Sask., Colo., N. Mex., Nev. Ecology: Reared from grasses and from the seeds of *Aplopappus spinulosus*.
Eurytoma neomexicana Girault, 1920. U. S. Natl. Mus., Proc. 58: 205. ♀, ♂.
- Biology: Brandhorst, 1943. Kans. Acad. Sci., Trans. 46: 169 (phytophagous).
- nigricoxa** Provancher. Ont., Man., B. C. Host: *Periclistus* sp.
Eurytoma nigricoxa Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym. p. 192. ♀.
- Taxonomy: Burks, 1964 (1963). Canad. Ent. 95: 1259.
- obtusa** Bugbee. N. J. Possibly introduced from Europe along with its host in 1930. Host: *Bruchus brachialis* Fahr.
Eurytoma obtusa Bugbee, 1967. U. S. Natl. Mus., Proc. 118: 507. ♀, ♂.
- obtusilobae** Ashmead. Mass., s. to Fla., w. to Man., Tex. and Oreg. Host: *Diptolepis radicum* (O. S.).
Eurytoma obtusilobae Ashmead, 1885. Amer. Ent. Soc., Trans. 12: Proc. p. xii. ♀, ♂.

- obtusiventris** Gahan. Mass., Ont., N. Y., Va., Ohio, Ind., Mich., Miss., La., Kans., Okla., Colo., N. Mex.; Mexico. Ecology: This species seems ordinarily to be parthenogenetic. Host: *Eurosta solidaginis* (Fitch), *Neotephritis finalis* (Loew).
Eurytoma obtusiventris Gahan, 1934. Ent. News 45: 117. ♀.
- Biology: Hughes, 1934. Ent. News 45: 119-122. —Uhler, 1951. Cornell Univ. Agr. Expt. Sta., Mem. 300: 40. —Miller, 1959. Tenn. Acad. Sci., Jour. 34: 249.
- orchidearum** (Westwood). Que., Ont., Mass., N. Y., N. J., D. C., Fla., Ill., La., Tex., Calif.; Cosmopolitan in Tropical and Subtropical regions. Ecology: North American records from area north of Southern Florida and Southern California are from greenhouses and conservatories. Host: *Cattleya* spp. Also other orchids having pseudobulbs.
Isosoma Orchidearum Westwood, 1869. Gard. Chron. p. 1230. ♀, ♂.
Eurytoma phoenix Girault, 1917. Deser. Hym. Chalcidoid. Variorum cum Observ. V, p. 11. ♀.
- Taxonomy: Gahan, 1922. Ent. Soc. Wash., Proc. 24: 41 (generic placement). —Bugbee, 1956. Ent. Soc. Amer., Ann. 49: 504 (syn.).
- Biology: Felt, 1916. N. Y. State Mus., Bul. 180: 336. —Moore, 1916. N. J. Agr. Expt. Sta., Bul. 308: 3-12. —Timberlake, 1924. Hawaii. Ent. Soc., Proc. 5: 420. —Aczel, 1936. Roy. Hungarian Hort. Col., Bul. 2: 41-43. —Brandao, 1942. Sitios e Fazendas 7: 73. —Figueiredo, 1942. Biologico 8: 136-138. —Gomes, 1942. Rev. Agron., Porte Alegre 6: 568-569. —Swezey, 1945. Hawaii. Ent. Soc., Proc. 12: 359-360. —Brandao, 1945. Brasil Min. da Agr., Bol. 34: 67-68. —Lepage and Figueiredo, 1947. Circulo Paulista de Orquidofilos, Bol., p. 12. —Bess, 1953. Hawaii. Farm Sci. 1: 3-6 (immature stages). —Look, 1954. Hawaii. Ent. Soc., Proc. 15: 264, 271.
- pachyneuron** Girault. P. E. I., Que., s. to N. C., w. to B. C., Wash., Oreg., Calif. Ecology: This species begins its development as a parasite and completes its larval growth by feeding on plant tissues in grass stems. Host: *Harmolita* spp., *Mayetiola destructor* (Say); *Elymus* spp., *Triticum* spp.
Eurytoma pachyneuron Girault, 1916. Canad. Ent. 48: 337. ♀.
Eurytoma phoebus Girault, 1920. U. S. Natl. Mus., Proc. 58: 204. ♀.
Eurytoma pater Girault, 1920. U. S. Natl. Mus., Proc. 58: 207. ♀.
- Taxonomy: Bugbee, 1956. Ent. Soc. Amer., Ann. 49: 503 (syn.).
- Biology: Phillips, 1917. Jour. Econ. Ent. 10: 145 (*pater*). —Gahan, 1922. Ent. Soc. Wash., Proc. 24: 37 (*pater*). —Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 33-36 (*phoebus*). —Jones, 1932. Jour. Econ. Ent. 25: 412 (*pachyneuron*). —Hill and Pinckney, 1940. U. S. Dept. Agr., Tech. Bul. 715: 8 (*phoebus*, immature stages). —Chamberlin, 1941. U. S. Dept. Agr., Tech. Bul. 784: 40 (*phoebus*, larva). —Brandhorst, 1943. Kans. Acad. Sci., Trans. 46: 174 (*pater*). —Cannon, 1963. Canad. Ent. 95: 34 (*phoebus*).
- parva** Phillips. N. Y., D. C., Va., Pa., Ohio, Ind., Kans., Sask., Alta. Host: *Cephus cinctus* Nort., *Harmolita tritici* (Fitch).
Eurytoma bolteri var. *parva* Phillips, 1918. U. S. Dept. Agr., Farmers' Bul. 1006: 11, 14. ♀.
- Taxonomy: Phillips, 1927. Jour. Agr. Res. 34: 743 (change from var. to sp.).
- Biology: Phillips, 1918. U. S. Dept. Agr., Farmers' Bul. 1006: 11 (life hist.). —Phillips, 1927. Jour. Agr. Res. 34: 743-758 (host relationships). —Phillips and Poots, 1940. U. S. Dept. Agr., Farmers' Bul. 1006 (rev.): 10-11 (life hist.). —Chamberlin, 1941. U. S. Dept. Agr., Tech. Bul. 784: 32-35 (parasites).
- phloeotribi** Ashmead. Que., N. Y., N. J., D. C., Va., W. Va., N. C., Idaho, Oreg., Calif. Host: *Phlocosinus sequoiae* Hopk., *Phloeotribus dentifrons* (Blackm.), *P. frontalis* (Oliv.), *Pityophthorus liquidambarus* Blackm., *Pseudopityophthorus minutissimus* (Zimm.), *P. prunosus* (Eich.), *Scolytus abietis* Blackm., *S. muticus* Say, *Stephanoderes dissimilis* (Zimm.).
Eurytoma phloeotribi Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 326. ♀.
- Taxonomy: Bugbee, 1970. Ent. Soc. Amer., Ann. 63: 437.
- Biology: Beal and Massey, 1945. Duke Univ. School Forestry, Bul. 10: 71, 111, 122.

- picea** Bugbee. B. C., Wash. Host: *Pissodes sitchensis* Hopk.
Eurytoma picea Bugbee, 1967. U. S. Natl. Mus., Proc. 118: 510. ♀, ♂.
- pini** Bugbee. Que., s. to S. C., w. to Mo., Ark., Man., Nebr. Host: *Dioryctria zimmermani* (Grote), *Eucosma gloriola* Hein., *Rhyacionia buoliana* (Schiff.), *R. frustrana* (Comst.), *R. rigidana* (Fern.).
Eurytoma pini Bugbee, 1958. Kans. Ent. Soc., Jour. 31: 197. ♀, ♂.
- Biology: Watson and Arthur, 1959. Canad. Ent. 91: 481 (prob. secondary). — Miller, 1959. Jour. Econ. Ent. 52: 768. — Rennels, 1960. Ill. Univ. Agr. Expt. Sta., Bul. 660: 17. — Arthur, 1961. Canad. Ent. 93: 1-13 (immature stages; cleptoparasitic). — Harman and Kulman, 1962. Jour. Econ. Ent. 55: 1007. — Eikenbary and Fox, 1965. S. C. Agr. Expt. Sta., Tech. Bul. 1017: 6. — Kulman, 1965. Jour. Econ. Ent. 58: 864 (hyperparasitic). — Finlayson, 1967. Canad. Ent. 99: 1265 (immature stages).
- pissodis** Girault. N. S., Maine, s. to Va., w. to Wash., Oreg., Calif. Host: *Pissodes engelmanni* Hopk., *P. strobi* (Peck), *P. terminalis* Hopk.
Eurytoma pissodis Girault, 1917. Brooklyn Ent. Soc., Bul. 12: 88. ♀, ♂.
- Biology: Graham, 1918. Ent. Soc. Amer., Ann. 11: 175-180. — Graham, 1926. Cornell Univ. Agr. Expt. Sta., Bul. 449: 26-29. — Taylor, 1929. Ent. Amer. (n. s.) 9: 228, 10: 60. — Stark and Wood, 1964. Canad. Ent. 96: 1217. — Stevenson, 1967. Canad. Ent. 99: 15-18 (immature stages).
- profunda** Bugbee. Fla., Tex. Ecology: Has been reared from stems of ragweed and a *Solanum*, as well as from a cynipid gall, but its actual host is unknown; very unlikely to be phytophagous.
Decatoma maculipes Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 126. ♀. Preocc. in *Eurytoma* by Motschulsky, 1863.
Eurytoma profunda Bugbee, 1967. U. S. Natl. Mus., Proc. 118: 454. N. name.
- prunicola** Walsh. Ont., s. to S. C., w. to Ill., Kans., Tex. Host: *Amphibolips gainesi* Bass., *A. quercusjuglans* (O. S.), *Callirhytis quercusventricosa* (Bass.), *Disholcaspis quercusglobulus* (Fitch).
Eurytoma prunicola Walsh, 1870. Amer. Ent. and Bot. 2: 298. ♀, ♂.
Eurytoma prunicola var. *globulicola* Walsh, 1870. Amer. Ent. and Bot. 2: 299. ♀.
- Taxonomy: Bugbee, 1967. U. S. Natl. Mus., Proc. 118: 473 (syn.).
- querci** Fullaway. Calif. Host: *Andricus lasius* (Ashm.), *Paracraspis guadaloupensis* (Full.).
Eurytoma querci Fullaway, 1912. N. Y. Ent. Soc., Jour. 20: 278. ♀, ♂.
- querciglobuli querciglobuli** (Fitch). N. H. and Ont., s. to Ga., w. to Minn., Tex. Host: *Disholcaspis quercusglobulus* (Fitch), *D. quercusmamma* (Walsh).
Macroglenes Querci-globuli Fitch, 1859. N. Y. State Agr. Soc., Trans. 18: 812.
Eurytoma punctiventris Walsh, 1870. Amer. Ent. and Bot. 2: 299. ♀.
- Taxonomy: Bugbee, 1958. Ent. Soc. Amer., Ann. 51: 193-196.
- Biology: Judd, 1957. Ent. News 68: 195.
- querciglobuli rubra** Bugbee. Fla., Miss. Host: *Disholcaspis quercusvirens* (Ashm.), *D. spongiosa* (Karsch).
Eurytoma querciglobuli rubra Bugbee, 1958. Ent. Soc. Amer., Ann. 51: 196. ♀.
- querciglobuli utahensis** Bugbee. Utah. Host: *Disholcaspis colorado* (Gill.).
Eurytoma querciglobuli utahensis Bugbee, 1958. Ent. Soc. Amer., Ann. 51: 197. ♀.
- rhois** Crosby. Ont., Conn., N. Y., Pa., D. C., N. C., Fla., Ohio, Mich., Ind., Tenn., Mo., Ark., La., Kans. Ecology: Phytophagous in seeds of sumac. Host: *Rhus copallina*, *R. glabra*, *R. typhina*.
Eurytoma rhois Crosby, 1909. Canad. Ent. 41: 52. ♀, ♂.
- Biology: Crosby, 1909. Cornell Univ. Agr. Expt. Sta., Bul. 265: 385-388. — Gahan, 1922. Ent. Soc. Wash., Proc. 24: 42. — Bridwell, 1923. Wash. Acad. Sci., Jour. 13: 262. — Bugbee, 1939. Ent. Soc. Amer., Ann. 32: 418-427. — Bugbee, 1941. Kans. Acad. Sci., Trans. 44: 228-233. — Schread *et al.*, 1942. Conn. Agr. Expt. Sta., Bul. 492: 496. — Neunzig, 1964. Ent. Soc. Wash., Proc. 66: 87. — Wadhi *et al.*, 1967 (1966). Indian Jour. Ent. 28: 498 (introd. into India from Canada).

- rubribacca** Bugbee. Idaho. Ecology: Reared from gall on wild raspberry, *Rubus* sp.
Eurytoma rubribacca Bugbee, 1968. Kans. Ent. Soc., Jour. 41: 406. ♀, ♂.
- rubrigalla** Bugbee. Mich. Ecology: Parasitizes inquilines and parasites of a cynipid gall maker, *Diastraphus nebulosus* (O. S.), on bramble, *Rubus* sp. Host: *Ormyrus* sp., *Synophronomorpha sylvestris* (O. S.).
Eurytoma rubrigalla Bugbee, 1968. Kans. Ent. Soc., Jour. 41: 405. ♀, ♂.
- salicigalla** Bugbee. Nev., Calif. Host: *Euura exiguae* Smith, *E. lasiolepis* Smith.
Eurytoma salicigalla Bugbee, 1970. Ent. Soc. Amer., Ann. 63: 434. ♀, ♂.
- Biology: Smith, 1970. Ent. Soc. Amer., Ann. 63: 1781 (initially parasitic, completing development by feeding on plant tissue).
- salicisaquatica** Bugbee. Nev., Calif. Host: *Euura exiguae* Smith, *E. lasiolepis* Smith, *E. lemmoniae* Smith.
Eurytoma salicisaquatica Bugbee, 1970. Ent. Soc. Amer., Ann. 63: 433. ♀, ♂.
- Biology: Smith, 1970. Ent. Soc. Amer., Ann. 63: 1781 (initially parasitic, completing development by feeding on plant tissue).
- sciromatis** Bugbee. N. C., Ga., Fla., La. Ecology: Phytophagous in a fungus causing cankers on pine branches and trunks. Host: *Cronartium fusiforme*.
Eurytoma sciromatis Bugbee, 1962. Kans. Ent. Soc., Jour. 35: 346. ♀, ♂.
- Biology: Coulson and Franklin, 1970. Canad. Ent. 102: 353-357 (not parasitic on *Dioryctria*, but phytophagous).
- semicircula** Bugbee. Tex. Ecology: Reared from cerambycid larvae in fruits of *Sapindus drummondii*, the soapberry. Host: *Leptostylus vogti* Dillon.
Eurytoma semicircula Bugbee, 1967. U. S. Natl. Mus., Proc. 118: 453. ♀.
- seminis** Bugbee. Kans., Okla. Ecology: Phytophagous in sumac seeds. Host: *Rhus trilobata*.
Eurytoma seminis Bugbee, 1941. Kans. Ent. Soc., Jour. 14: 98. ♀, ♂.
- semivenae** Bugbee. N. Y., Ohio, Ark., Kans., Tex. Ecology: Reared from psyllid galls on hackberry. Host: *Pachypsylla celtidismamma* Riley, *P. celtidisvesicula* Riley.
Eurytoma semivenae Bugbee, 1957. Kans. Ent. Soc., Jour. 30: 47. ♀, ♂.
- Biology: Moser, 1965. N. Y. State Mus. and Sci. Serv., Bul. 402: 22 (feeds both on gall maker and gall cell wall).
- solenozopheriae** Ashmead. Que., Maine, Mass., Conn., N. Y., N. J., Pa., D. C. Ecology: Parasitizes a chalcid gall maker on blueberry. Host: *Hemadas nubilipennis* (Ashm.).
Eurytoma solenozopheriae Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 196. ♀, ♂.
- Biology: Driggers, 1927. N. Y. Ent. Soc., Jour. 35: 254-258 (parasite of chalcid gall maker, not of cynipid gall maker). — McAlister and Anderson, 1932. Jour. Econ. Ent. 25: 1166.
- sphaera** Bugbee. La. Host: *Disholcaspis quercusglobulus* (Fitch), *D. spongiosa* (Karsch).
Eurytoma sphaera Bugbee, 1967. U. S. Natl. Mus., Proc. 118: 458. ♀, ♂.
- spina** Bugbee. Sask., Oreg. Host: *Diplolepis tuberculatrix* (Ckll.).
Eurytoma spina Bugbee, 1951. Ent. Soc. Amer., Ann. 44: 250. ♀, ♂.
- spongiosa curvavena** Bugbee. Minn. Host: *Diplolepis spinosa* (Ashm.).
Eurytoma spongiosa curvavena Bugbee, 1951. Ent. Soc. Amer., Ann. 44: 257. ♀, ♂.
- spongiosa spongiosa** Bugbee. Ont. and Mass., s. to Va., w. to Sask., Utah. Ecology: Reared from spiny rose galls on wild roses. Host: *Diplolepis dichlocera* (Harris), *D. rosae* (L.), *D. tuberculatrix* (Ckll.).
Eurytoma spongiosa Bugbee, 1951. Ent. Soc. Amer., Ann. 44: 254. ♀, ♂.
- squamosa** Bugbee. Idaho, Wash., Calif. Ecology: Phytophagous in seeds of *Ceanothus*. Host: *Ceanothus cordulatus*, *C. divaricatus*, *C. integerrimus*, *C. sanguineus*, *C. thyriaflorus*, *C. celutinus*.
Eurytoma squamosa Bugbee, 1967. U. S. Natl. Mus., Proc. 118: 495. ♀, ♂.
- stigma** Ashmead. Nev., Oreg., Calif. Host: *Hoplitis producta gracilis* (Mich.), *Hylaeus* (*Paraprosopis*) *polifolii* (Ckll.), *Pemphredon giffardi* (Roh.), *Solierella similis* (Brid.), *Stigmus inordinatus* Fox, *Trypoxylon sculleni* Sandh.
Eurytoma stigma Ashmead, 1895. In Davidson, Psyche 7: 271. ♀, ♂.

Biology: Parker and Bohart, 1966. Pan.-Pacific Ent. 42: 94-96 (hosts).

studiosa Say. Que., s. to Fla., w. to B. C., Wash., Oreg., Calif. Ecology: Occurs wherever oaks grow. Host: *Acraspis erinacei* (Beut.), *A. gemula* (Bass.), *A. macrocarpae* Bass., *A. pezomachoides* (O. S.), *A. quercushirta* (Bass.), *A. villosa* Gill., *Andricus ignotus* (Bass.), *A. quercusflocci* (Walsh), *A. quercuspetiolicola* (Bass.), *Callirhytis clavula* (O. S.), *C. elongata* (Kinsey), *C. seminator* (Harr.), *Disholcaspis quercusglobulus* (Fitch), *D. quercussaccinipes* (Ashm.), *D. spongiosa* (Karsch), *D. washingtonensis* (Gill.).

Eurytoma studiosa Say, 1836. Boston Jour. Nat. Hist. 1: 272. ♀.

Eurytoma lanulæ Fitch, 1859. N. Y. State Agr. Soc., Trans. 18: 817.

Eurytoma succinipedis Ashmead, 1881. Amer. Ent. Soc., Trans. 9: Proc., p. xxxi. ♀, ♂.

Taxonomy: Bugbee, 1956. Ent. Soc. Amer., Ann. 49: 504 (syn.). — Bugbee, 1967. U. S. Natl. Mus., Proc. 118: 504 (syn.).

Biology: Walsh, 1870. Amer. Ent. and Bot. 2: 299. — Triggerson, 1914. Ent. Soc. Amer., Ann. 7: 9.

terrea Bugbee. Oreg. Host: *Diptolepis polita* (Ashm.).

Eurytoma terrea Bugbee, 1951. Ent. Soc. Amer., Ann. 44: 238. ♀, ♂.

tomici Ashmead. N. Y., Md., Va., Ga., Miss., La., Tex., Colo., Alta., Wash., Oreg., Calif. Host: *Cylindrocopturus cottonii* Buch., *C. furnissi* Buch., *C. longulus* (Lec.), *Dendroctonus brevicornis* Lec., *Phloeosinus* sp., *Pityogenes plagiatus* (Lec.).

Eurytoma tomici Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 325. ♂.

Taxonomy: Bugbee, 1970. Ent. Soc. Amer., Ann. 63: 436 (redescription).

Biology: Furniss, 1942. Jour. Econ. Ent. 35: 858. — Bushing and Bright, 1965. Canad. Ent. 97: 200 (hosts).

tumoris Bugbee. Calif. Ecology: Phytophagous in branches of pines. Host: *Pinus silvestris*.

Eurytoma tumoris Bugbee, 1962. Kans. Ent. Soc., Jour. 35: 345. ♀, ♂.

Biology: Stark and Koehler, 1964. Pan-Pacific Ent. 40: 41 (immature stages).

tylodermatis Ashmead. Ont., s. to S. C., w. to Wis., Colo., Ariz. Host: Parasitic on bruchids and curculionids. *Acanthoscelides horni* (Pic), *Amblycerus robiniae* (F.), *Baris* sp., *Chalcodermus aeneus* Boh., *Conotrachelus elegans* Boh., *Cylindrocopturus longulus* (Lec.), *Lixus musculus* Say, *L. scrobicollis* Boh., *Macrorhoptus sphaeralciae* Pierce, *Mimosestes sallaei* (Sharp), *Orthoris crotchii* Lec., *Smicraulax tuberculatus* Pierce, *Tachypterellus consors cerasi* List, *T. quadrigibbus* (Say), *Trichobaris terana* Lec., *T. trinotata* (Say), *Tyloderma foveolatum* Say.

Eurytoma tylodermatis Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 218. ♀, ♂.

Taxonomy: Burks, 1967. In Krombein and Burks, U. S. Dept. Agr., Agr. Monog. 2, Sup. 2, p. 274.

Biology: Pierce, 1908. U. S. Dept. Agr., Bur. Ent. Bul. 73: 25-48. — Pierce, 1908. Jour. Econ. Ent. 1: 119-121. — Cushman, 1911. Jour. Econ. Ent. 4: 496. — Pierce *et al.*, 1912. U. S. Dept. Agr., Bur. Ent. Bul. 100: 41-68. — Hunter and Pierce, 1912. U. S. Dept. Agr., Bur. Ent. Bul. 114: 141. — List, 1932. Colo. Agr. Expt. Sta., Bul. 385: 54-59. — Parker and Lamerson, 1934. Kans. Ent. Soc., Jour. 7: 90-92. — Hammer, 1936. N. Y. State Agr. Expt. Sta., Tech. Bul. 240: 44-45. — Yip, 1936. Jour. Econ. Ent. 29: 624-626. — Riteher, 1936. Jour. Econ. Ent. 29: 698-699. — Beacher, 1947. Ent. Soc. Amer., Ann. 40: 533. — Nickels *et al.*, 1950. U. S. Dept. Agr., Tech. Bul. 1011: 3, 20. — Miller, 1953. Ohio Jour. Sci. 53: 60. — Bugbee, 1967. U. S. Natl. Mus., Proc. 118: 492-493.

vernonia Bugbee. Pa., Miss., Kans., Okla. Ecology: Parasite of trypetid maggots in seeds of Ironweed, Vernonia, and Sunflower, *Helianthus*. Host: *Neaspilota alba* (Loew), *Neotephritis finalis* (Loew), *Tomoplagia obliqua* (Say).

Eurytoma vernonia Bugbee, 1967. U. S. Natl. Mus., Proc. 118: 481. ♀, ♂.

Biology: Schwitzgebel and Wilbur, 1943. Kans. Ent. Soc., Jour. 16: 7-11 (*Eurytoma* sp.).

UNPLACED SPECIES OF EURYTOMA ILLIGER

Eurytoma abnormicornis Walsh, 1870. Amer. Ent. and Bot. 2: 299. ♀. Type lost.

- Eurytoma albitarsis* Ashmead, 1902. In Chittenden, U. S. Dept. Agr., Div. Ent. Bul. 38: 88. Nom. nud.
- Eurytoma aulacis* Ashmead, 1892. In Brodie, Canad. Ent. 24: 12. Nom. nud.
- Eurytoma cretheis* Walker, 1843. Soc. Ent. de France, Ann. 2: 150. ♀. Type fragmentary.
- Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 162.
- Lamprostylus floridanus* Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 193. ♂. Species placed in *Eurytoma* by Peck, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 576. Species cannot be placed from unassociated male.
- Eurytoma hegeli* Girault, 1921. U. S. Natl. Mus., Proc. 58: 207. *Eurytoma hegeli* var. *maga* Girault described, but *Eurytoma hegeli* Girault not described.
- Isosoma nevadensis* Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 330. ♂. Species placed in *Eurytoma* by Peck, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 577. Species cannot be placed from unassociated male.
- Eurytoma orbiculata* Say, 1836. Boston Jour. Nat. Hist. 1: 272. ♂. Type lost.
- Macroglenes quercipisi* Fitch, 1859. N. Y. State Agr. Soc., Trans. 18: 818. Species placed in *Eurytoma* by Ashmead, 1900. In Smith, N. J. State Bd. Agr., Ann. Rpt. 27, Sup., p. 554. Fragmentary specimen in U. S. N. M. labeled type does not agree with orig. descr.

Family CHALCIDIDAE

By B. D. BURKS

In 1923 Gahan and Fagan (U. S. Natl. Mus., Bul. 124: 24, 31, 133) changed the application of the well-known names *Chalcis*, *Brachymeria*, *Smicra* and *Smiera*. These names had been used extensively in the literature for almost a century. The changes very well may have been erroneous, because of the fact that Gahan and Fagan had examined none of the types of the type-species involved. Their conclusions were based entirely on a study of the literature, principally volume 5 of Dalla Torre's *Catalogus Hymenopterorum*, published in 1898. That work was a bibliographic, not a taxonomic, one. However, these changes in the application of familiar names were accepted by all subsequent workers except for Schmitz, who published a large work on the Ethiopian Chalcididae in 1946. All other works in the world literature followed Gahan and Fagan. An enormous literature that used these names as redefined by Gahan and Fagan has been published in the last 50 years. It would be a mistake at this late date to try to reverse the changes made by Gahan and Fagan, irrespective of their soundness. It should be kept in mind, however, that the application of those names before and after 1923 is quite different.

Taxonomy: Schmitz, 1946. Exploration Parc Natl. Albert, Mission De Witte, fasc. 48: 3-191 (African fauna). — Boucek, 1951. Mus. Natl. Pragae, Acta Ent. 27 (Sup.): 1-108 (European fauna). — Erdos, 1955. Magyar. Allat. 12 (Hymenoptera 2, pt. 2): 7-11 (key to genera). — Boucek, 1956. Res. Council Israel, Bul. 5B: 228-250 (Near East fauna). — Nikolskaja, 1960. Fauna SSSR (n. s.) 76: 41-191 (Russian fauna). — Habu, 1962. Fauna Japonica, Chalcididae, Leucospididae, and Podagrionidae, pp. 2-164 (Japanese fauna).

Biology: Steffan, 1958. Tenth Internat. Cong. Ent., Proc. 1: 799-804 (world distrib.).

Morphology: Steffan, 1957. Paris Mus. Natl. d'Hist. Nat., Bul. (2) 19: 315-322 (abdominal petiole).

SUBFAMILY HALTICHELLINAE

The questions that have remained pending for many years concerning the application of the generic names *Haltichella* and *Hockeria* should be referred to the International Commission on Zoological Nomenclature for settlement. Usage of those names here follows the preponderant application of those names in current literature.

Revision: Steffan, 1951-1953. Feuille des Nat. (n. s.) 6: 1-7, 81-85; 8: 7-12, 33-36 (French fauna). — Steffan, 1951. Paris Mus. d'Hist. Nat., Mem. (n. s., A) 4: 51-86 (genera related to *Enchalcidia*). — Steffan, 1957. Soc. Ent. de France, Ann. 126: 139-158 (genera related to *Chirocera*). — Habu, 1960. Natl. Inst. Agr. Sci. Japan, Bul. (C) 11: 218-296 (Japanese fauna).

Genus HALTICHELLA Spinola

HalticHELLA Spinola, 1811. Paris Mus. d'Hist. Nat., Ann. 17: 148.

Type-species: *Chalcis pusilla* Fabricius. Desig. by Westwood, 1840.

Halticella Stephens, 1829. Nomencl. Brit. Ins., p. 36, Emend.

Microchalcis Kieffer, 1904. Berlin. Ent. Ztschr. 49: 255.

Type-species: *Microchalcis quadridens* Kieffer. Monotypic.

Taxonomy: Masi, 1936. Soc. Ent. d'Egypte, Bul. 20: 252-254 (identity of type-species).

—Kerrich and Menon, 1949. Ent. Monthly Mag. 85: 207-211 (identity of type-species).

onatas (Walker). S. C., Ga., Fla., Miss., La., Kans., Tex. Host: *Grapholitha molesta* (Busck).

Hockeria onatas Walker, 1843. Soc. Ent. de France, Ann. (2) 1: 146. ♀.

Halticella longicornis Ashmead, 1887. Amer. Ent. Soc. Trans. 14: 185. ♀.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 164 (synonymy; lectotype designated).

Biology: Nettles, 1934. Jour. Econ. Ent. 27: 815-816 (*longicornis*).

rhyacionia Gahan. Mass. and N.Y., s. to S.C., w. to Nebr., Colo., Tex. Host: *Rhyacionia*

bushnelli (Busck), *R. frustrana* (Comst.), *R. rigidana* (Fern.).

Halticella rhyacioniae Gahan, 1927. Jour. Agr. Res. 34: 545. ♀, ♂.

Biology: Underhill, 1934. Va. Agr. Expt. Sta., Bul. 349: 12. —Miller and Neiswander, 1959.

Ohio Agr. Expt. Sta., Res. Bul. 840: 18. —Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 91.

xanticles (Walker). Que., s. to Fla., w. to Sask., Nebr., Kans., Okla., Tex. Host: *Bucculatrix canadensiella* Chamb., *Coleophora laricella* (Hbn.), *Exoteleia pinifoliella* (Chamb.), *Grapholitha molesta* (Busck), *Solenobia walshella* Clem.; *Apanteles melanoscelus* (Ratz.).

Hockeria xanticles Walker, 1843. Soc. Ent. de France, Ann. (2) 1: 147. ♀.

Halticella americana Howard, 1885. U. S. Dept. Agr., Bur. Ent. Bul. 5: 9, 36. ♀.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 165 (synonymy; lectotype designated).

Biology: Muesebeck and Dohanian, 1927. U. S. Dept. Agr., Bul. 1487: 18 (hyperparasitism).

—Friend, 1927. Conn. (State) Agr. Expt. Sta., Bul. 288: 395 (primary parasite). —Allen, 1962. U. S. Dept. Agr., Tech. Bul. 1265: 108-109 (primary parasite).

Genus HOCKERIA Walker

Hockeria Walker, 1834. Ent. Mag. 2: 21, 34.

Type-species: *Chalcis bispinosa* Fabricius. Desig. by Kirby, 1883.

Stomatoceras Kirby, 1883. Linn. Soc. London, Jour., Zool. 17: 54, 62.

Type-species: *Halticella liberator* Walker. Orig. desig.

Centrochalcis Cameron, 1905. Ztschr. System. Hym. Dipt. 5: 230.

Type-species: *Centrochalcis octodentata* Cameron. Monotypic.

HypoChalcis Girault, 1915. Ent. News 26: 325.

Type-species: *Chalcis modestus* Masi. Orig. desig.

Taxonomy: Masi, 1936. Soc. Ent. d'Egypte, Bul. 20: 252-254 (identity of type-species).

—Kerrich and Menon, 1949. Ent. Monthly Mag. 85: 209 (identity of type-species). —Erdos, 1955. Magyar. Allat. (Hymenoptera 2, pt. 2): 8-9, 20 (Hungarian spp.).

americensis (Girault). N. J.

Stomatoceras unipunctatipennis americensis Girault, 1918. Ent. News 29: 127. ♀.

ericensis (Wallace). Del., s. to N. C., w. to Wash., Calif. Host: *Myrmeleon* sp., *M. immaculatus* Deg.

Stomatoceras rubra var. *ericensis* Wallace, 1942. Carnegie Mus., Ann. 29: 31. ♀, ♂.

Taxonomy: Steffan, 1959. Vie et Milieu 10: 304 (change from var. to sp.).

rubra (Ashmead). Va., Fla., Ark., Kans., Tex., Ariz., Calif.; Mexico. Host: *Harrisina brillians* B. and McD.

Stomatocera(!) *rubra* Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 332. ♀.

tenuicornis (Girault). Mont., Ariz., Calif.

Stomatoceras tenuicornis Girault, 1918. Ent. News 29: 127. ♀.

unipunctatipennis (Girault). N. Y., s. to Fla., w. to Wash., Oreg., Calif. Host: *Neodiprion* sp., *N. excita* Rohwer.

Stomatoceras unipunctatipennis Girault, 1918. Ent. News 29: 127. ♀.

Genus SCHWARZELLA Ashmead

Schwarzella Ashmead, 1904. Carnegie Mus., Mem. 1: 256.

Type-species: *Schwarzella arizonensis* Ashmead. Monotypic.

The female of this genus has not been identified.

arizonensis Ashmead. N. Mex., Ariz., Calif.

Schwarzella arizonensis Ashmead, 1904. Carnegie Mus., Mem. 1: 256, 388. ♂.

UNPLACED TAXON IN HALTICHELLINAE

Hockeria perpulcra Walsh, 1861. Prairie Farmer (n. s.) 8: 258.

SUBFAMILY DIRHININAE

Revision: Masi, 1947. Eos 33: 39-78 (world fauna to 1936).

Taxonomy: Burks, 1936. Natl. Acad. Sci., Proc. 22: 284-286 (Nearctic species). — Boucek, 1956. Res. Council Israel, Bul. 5B: 249-250 (Mediterranean fauna). — Habu, 1960. Natl. Inst. Agr. Sci. Japan, Bul. (C) 11: 309-310 (generic synonymy and subgenera).

Genus DIRHINUS Dalman

Dirhinus Dalman, 1818. Svenska Vetensk. Akad., Handl. 39: 75.

Type-species: *Dirhinus excavatus* Dalman. Monotypic.

Dirhinus Dalman, 1823. Analecta Ent., p. 29. Emend.

Eniaca Kirby, 1883. Linn. Soc. London, Jour., Zool. 17: 54, 57.

Type-species: *Chalcis cornigera* Jurine. Orig. desig.

Dirrhinoidea Girault, 1912. Arch. f. Naturgesch. 78A (9): 165.

Type-species: *Dirrhinoidea maculata* Girault. Orig. desig.

Parenaica Crawford, 1913. U. S. Natl. Mus., Proc. 45: 312.

Type-species: *Parenaica schwarzi* Crawford. Orig. desig.

Eniaca Girault, 1913. Wis. Nat. Hist. Soc., Bul. 11: 35.

Type-species: *Eniaca ruficornis* Girault. Orig. desig.

Revision: Burks, 1947. Ent. Soc. Wash., Proc. 49: 136-140.

Morphology: Greathead, 1959. Ent. Monthly Mag. 95: 105 (larvae).

perideus Burks, Ill., Tex.

Dirhinus perideus Burks, 1947. Ent. Soc. Wash., Proc. 49: 137. ♂.

schwarzi (Crawford). Tex., Ariz., Calif. Host: *Melitara doddalis* Dyar, *Olycella junctolineella* (Hulst), *Pseudoschinia elautalis* (Grote).

Parenaica schwarzi Crawford, 1913. U. S. Natl. Mus., Proc. 45: 312. ♀.

texanus (Ashmead). N. C., S. C., Ga., Ala., Ind., Tenn., Kans., Okla., Tex., Ariz.; Mexico. Host: *Blaesoxipha plinthopyga* (Wied.).

Eniaca texana Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 217. ♀.

Dirhinus paoli Burks, 1947. Ent. Soc. Wash., Proc. 49: 137. ♂.

Biology: Roberts, 1935. Jour. Agr. Res. 50: 490-491.

SUBFAMILY CHALCIDINAE

Revision: Burks, 1940. U. S. Natl. Mus., Proc. 88: 237-354.

Taxonomy: Burks, 1939. Arb. ueber Morph. u. Taxonom. Ent. 6: 276-277 (key to genera).

— Haupt, 1954. Deut. Ent. Ztschr. (n. s.) 1: 180-193 (Central European fauna). — Habu, 1960. Natl. Inst. Agr. Sci. Japan, Bul. (C) 11: 333-345 (Japanese fauna).

Genus METADONTIA Ashmead

Metadontia Ashmead, 1888. Ent. Amer. 4: 87. No species. —Ashmead, 1904, Carnegie Mus., Mem 1: 252. One species.

Type-species: *Smicra montana* Ashmead. Desig. by Ashmead, 1904.

Plagiosmicra Cameron, 1904. Invertebrata Pacifica 1: 56.

Type-species: *Plagiosmicra ashmeadi* Cameron. Monotypic.

amoena (Say). Md., s. to Fla., w. to Ill., Mo., Kans., Ariz., Calif.; Mexico, Cent. and S. Amer.

Host: *Strymon cecrops* (F.), *S. melinus* (Hbn.).

Chalcis amoena Say, 1836. Boston Jour. Nat. Hist. 1: 270.

Smicra montana Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 183. ♂.

Plagiosmicra ashmeadi Cameron, 1904. Invertebrata Pacifica 1: 56. ♀.

Biology: Samuelson, 1961. Pan-Pacific Ent. 37: 190.

Genus CHALCIS Fabricius

Chalcis Fabricius, 1789 (1787). Mantissa Insectorum, v. 1, p. 272.

Type-species: *Chalcis sispes* Fabricius. Desig. by Latreille, 1810.

Smiera Spinola, 1811. Paris Mus. d'Hist. Nat., Ann. 17: 147.

Type-species: *Chalcis sispes* Fabricius. Desig. by Ashmead, 1904.

Smicra Spinola, 1837. Mag. Zool., 7 Cl. IX, explan. pl. 180. Emend.

In the European literature, *Chalcis sispes* Fabricius is uniformly treated as a synonym of *Chalcis myrifex* (Sulzer). The species of *Chalcis* are parasitic on Stratiomyidae throughout the Holarctic region. The stratiomyid eggs are laid in masses on plants or other objects above the water line in aquatic environments such as cattail bogs. The *Chalcis* adults, despite their relatively large size, oviposit in these eggs. When the stratiomyid eggs hatch the larvae migrate into the water. The *Chalcis* larvae remain inside them until the stratiomyids are fully grown. When the stratiomyids are ready to pupate they migrate to mud banks or other similar sites, above the water line. The *Chalcis* parasites then quickly complete their development and their adults emerge through round holes they cut in the exuviae of the stratiomyids.

Revision: Burks, 1940. U. S. Natl. Mus., Proc. 88: 243-260.

Taxonomy: Gahan and Fagan, 1923. U. S. Natl. Mus., Bul. 124: 31 (*Chalcis* must be used in the sense of *Smicra* and *Smiera*). —Schmitz, 1946. Exploration Parc Natl. Albert, Mission De Witte, fasc. 48: 70-72 (*Smiera* should be used for this genus).

barbara (Cresson). N. H., Conn., Mass., N. J., Fla., Mich., Ill., Iowa, Mo., Ark., N. Dak., Kans., Tex., Wyo., Colo.; Mexico. Host: *Odontomyia* sp., *O. cineta* Olivier, *Stratiomys norma* Wied.

Smiera barbara Cresson, 1872. Amer. Ent. Soc., Trans. 4: 47. "♂" = ♀.

Smicra rufofemorata Cresson, 1872. Amer. Ent. Soc., Trans. 4: 39. ♂. Preocc. by Rosenhauer, 1856.

Biology: Hart, 1895. Ill. State Lab. Nat. Hist., Bul. 4: 250, 271.

canadensis (Cresson). N. B., Ont., N. Y., W. Va., Mich., Wis., Ill., La. Host: *Hedriodiscus vertebratus* (Say), *Odontomyia* sp.

Smiera canadensis Cresson, 1872. Amer. Ent. Soc., Trans. 4: 39. ♂.

Biology: Judd, 1953. Amer. Midland Nat. 49: 817-819.

divisa (Walker). Kans., Okla., Tex., N. Mex., Ariz., Oreg., Calif.; Mexico.

Smiera divisa Walker, 1861. Jour. Ent. 1: 178. ♀, ♂.

Morphology: Daly, 1963. Ent. Soc. Amer., Ann. 56: 303.

flebilis (Cresson). Maine, Mass., Conn., Ont., N. Y., N. J., Va., Ga., Fla., Mich., Ill., Minn.

Smicra flebilis Cresson, 1872. Amer. Ent. Soc., Trans. 4: 39. ♂.

lasia Burks. Ariz., Calif.

Chalcis lasia Burks, 1940. U. S. Natl. Mus., Proc. 88: 248. ♀, ♂.

megalomis Burks. Mich., Ill., Iowa, Wyo., Colo., Oreg. Host: *Stratiomys* sp.

Chalcis megalomis Burks, 1940. U. S. Natl. Mus., Proc. 88: 250. ♀.

microgaster Say. Ont., Pa., Md., Ga., Ohio, Mich., Wis., Ill., Minn., Kans., Okla., Tex.

Chalcis microgaster Say, 1824. In Keating, Narr. Long's 2nd Exped., App. p. 326.

neptis Burks. Nebr., Colo., N. Mex., Idaho, Utah, Ariz., Wash., Oreg., Calif.

Chalcis neptis Burks, 1940. U. S. Natl. Mus., Proc. 88: 251. ♀, ♂.

phoenicapoda Burks. Ga., Fla.

Smicra rufipes Kirby, 1883. Linn. Soc. London, Jour., Zool. 17: 70. Preocc. by Olivier, 1790.

Chalcis phoenicapoda Burks, 1940. U. S. Natl. Mus., Proc. 88: 257. N. name.

Taxonomy: Peck, 1963. Canad. Ent., Sup. 30: 869 (*rufipes* Kirby valid name for sp.).

Genus SPILOCHALCIS Thomson

Spilochalcis Thomson, 1876 (1875). Hym. Scand., v. 4, p. 15.

Type-species: *Chalcis xanthostigma* Dalman. Monotypic.

Diplodontia Ashmead, 1888. Ent. Amer. 4: 87.

Type-species: *Smicra carolina* Ashmead. Desig. by Ashmead, 1904.

Eustypiura Ashmead, 1904. Carnegie Mus., Mem. 1: 251, 253, 412.

Type-species: *Eustypiura bicolor* Ashmead. Orig. desig.

Enneasmicra Ashmead, 1904. Carnegie Mus., Mem. 1: 252, 253, 449.

Type-species: *Smicra exinaniensis* Walker. Orig. desig.

Octosmicra Ashmead, 1904. Carnegie Mus., Mem. 1: 252, 253, 450.

Type-species: *Octosmicra laticeps* Ashmead. Orig. desig.

Heptasmicra Ashmead, 1904. Carnegie Mus., Mem. 1: 252, 253, 451.

Type-species: *Smicra obliterans* Walker. Orig. desig.

Hexasmicra Ashmead, 1904. Carnegie Mus., Mem. 1: 252, 254, 454.

Type-species: *Smicra transversa* Walker. Orig. desig.

Pentasmicra Ashmead, 1904. Carnegie Mus., Mem. 1: 252, 254, 455.

Type-species: *Pentasmicra brasiliensis* Ashmead. Orig. desig.

Tetrasmicra Ashmead, 1904. Carnegie Mus., Mem. 1: 252, 254, 456.

Type-species: *Smicra concitata* Walker. Orig. desig.

Trismicra Ashmead, 1904. Carnegie Mus., Mem. 1: 252, 254, 456.

Type-species: *Smicra contracta* Walker. Monotypic.

Cameron in 1910 (Amer. Ent. Soc., Trans. 35: 422-425), under the heading *Spilochalcis* Thomson, made a mistake and spelled the generic name for two of his three new species *Spilosmicra*. All authors have accepted this as a *lapsus*. In 1944 Graham (Ent. Soc. Ont., Ann. Rpt. 74: 49) recorded the European species *Spilochalcis xanthostigma* (Dalman) from Ontario (name spelled *xanthostigmata* by error). In 1965 I was able to find and re-examine the specimen on which this record was based; it was *albifrons* (Walsh).

Revision: Burks, 1940. U. S. Natl. Mus., Proc. 88: 243, 263-343.

SPECIES GROUP TRANSITIVA

dorsata (Cresson). N. C., Ga., Fla., Ill., Mo., Kans., Tex.; Mexico.

Smicra dorsata Cresson, 1872. Amer. Ent. Soc., Trans. 4: 49. ♀.

Spilochalcis missouriensis Howard, 1885. U. S. Dept. Agr., Bur. Ent. Bul. 5: 6. ♀.

eubule (Cresson). Ga., Fla.; West Indies. Host: *Eurema nicippe* Cram., *Phoebis sennae* (L.).

Smicra Eubule Cresson, 1865. Ent. Soc. Phila., Proc. 4: 93.

exornata (Cresson). Tex., Ariz., Calif.; Mexico, Cent. Amer., West Indies. *Mimorista flavidissimalis* (Grote) listed questionably as a host.

Smicra exornata Cresson, 1872. Amer. Ent. Soc., Trans. 4: 50. ♂.

phoenica Burks. Tex., Ariz., Calif.; Mexico, Cent. Amer. Host: *Chlosyne lacinia crocale* (Edw.).

Spilochalcis phoenica Burks, 1940. U. S. Natl. Mus., Proc. 88: 278. ♀, ♂.

Biology: Drummond et al., 1970. Lepidopterists Soc., Jour. 24: 140.

transitiva (Walker). Ga., Fla.; West Indies.

Smicra transitiva Walker, 1862. Ent. Soc. London, Trans. (3) 1: 371. ♀.

Smicra pulchra Cresson, 1865. Ent. Soc. Phila., Proc. 4: 94.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent. Bul. 32 (4): 165.

SPECIES GROUP NIGRICORNIS

coxalis (Cresson). N. Y., N. J., Pa., Md., Va., N. C., S. C., Ga., Iowa, Mo., Ark., Tex.

Smicra coxalis Cresson, 1872. Amer. Ent. Soc., Trans. 4: 45. ♂.

Spilochalcis virens Howard, 1885. U. S. Dept. Agr., Bur. Ent. Bul. 5: 6. ♂.

flammeola (Cresson). Tex.

Smicra flammeola Cresson, 1872. Amer. Ent. Soc., Trans. 4: 48. ♀, ♂.

lasnierii (Guerin). Fla.; West Indies.

Chalcis Lasnierii Guérin, 1845. Iconogr. Regne Anim., Ins., v. 1, p. 412; v. 2, pl. 67. ♀.

Chalcis lanieri Guérin, 1857. In de la Sagra, Hist. Fis. Polit. y Nat. Cuba, v. 7, p. 753. Emend.

Taxonomy: Gahan, 1934. Soc. Cubana de Hist. Nat., Mem. 8: 131-132.

Morphology: Burks, 1938. Ent. Soc. Amer., Ann. 31: 157-161 (forewing venation).

nigricornis (Fabricius). N. H., s. to Fla., w. to N. Dak. and Tex. Host: *Adoneta spinuloides* (H.-S.), *Limacodes* sp., *Parasa indetermina* (Bdv.).

Chalcis nigricornis Fabricius, 1798. Sup. Ent. System. p. 243.

Chalcis bracata Sanborn, 1863 (1862). Mass. Bd. Agr., Rpt. 10: 172. ♀.

Smicra bracata coequalis Cresson, 1872. Amer. Ent. Soc., Trans. 4: 46. ♂.

Smicra carolina Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 183. ♂.

Diplodontia secunda Girault, 1917. Deser. Hym. Chalcidoid. Variorum cum Observ. V, p. 10. ♀.

Taxonomy: Girault, 1920. U. S. Natl. Mus., Proc. 58: 194. ♀.

nortonii (Cresson). Conn., s. to Ga., w. to Ill. and Tex. Host: *Limacodes* sp., *Phobetrion pithecium* (A. and S.), *Prolimacodes badia* (Hbn.).

Smicra Nortonii Cresson, 1872. Amer. Ent. Soc., Trans. 4: 45. ♂.

Biology: Schaffner, 1959. U. S. Dept. Agr., Misc., Pub. 767: 91.

SPECIES GROUP FEMORATA

delicata (Cresson). Mo., La., Tex.; West Indies.

Smicra delicata Cresson, 1872. Amer. Ent. Soc., Trans. 4: 54. ♀.

elachis Burks. Fla., La.; West Indies.

Spilochalcis elachis Burks, 1940. U. S. Natl. Mus., Proc. 88: 294. ♀.

enocki Ashmead. Ala., La., Tex.; Brazil. An adventive species, always taken at or near a southern port city.

Spilochalcis enocki Ashmead, 1904. Carnegie Mus., Mem. 1: 439. ♀.

erythrina (Walker). Ark., Tex.; Mexico.

Smicra erythrina Walker, 1861. Jour. Ent. 1: 179. "♀" = ♂.

Spilochalcis clora Burks, 1940. U. S. Natl. Mus., Proc. 88: 306. ♂. N. syn.

femorata (Fabricius). Ga., Fla., Tex.; Mexico, Cent. Amer., West Indies. Ecology: Perhaps the commonest species of *Spilochalcis* in the West Indies and Central America, particularly in cultivated areas.

Crabro femoratus Fabricius, 1775. Systema Ent., p. 375.

Smicra ignea Cresson, 1865. Ent. Soc. Phila., Proc. 4: 92.

Smicra mirabilis Cresson, 1872. Amer. Ent. Soc., Trans. 4: 53. ♂.

Biology: Gowdey, 1921. Jamaica Dept. Agr., Ent. Cir. 4: 4.

hirtifemora (Ashmead). D. C., Va., N. C., S. C., Ga., Fla., Ohio, Tenn., Ill., La., Tex.; Mexico, Cent. and S. Amer., West Indies. Ecology: Both a primary and secondary parasite. Host: *Mesogramma polita* (Say), *M. polygonastyla* (Metc.), *Platychirus* sp.; *Apanteles marginiventris* (Cress.).

Smicra hirtifemora Ashmead, 1885. Amer. Ent. Soc., Trans. 12: Proc. p. x. ♂.

Spilochalcis syrphidis Wolcott, 1923. Porto Rico Dept. Agr., Jour. 7: 57.

igneoides (Kirby). N. H., s. to Fla., w. to Mont. and Ariz.; Mexico, Cent. Amer. Host: *Acrobasis caryvorella* Rag., *A. indigenella* (Zell.), *A. juglandis* (LeB.), *Eurukuttarus confederata*

(Grote), *Gretchena deludana* (Clem.), *Heliothis zea* (Boddie), *Spodoptera frugiperda* (Smith).

Smicra igneoides Kirby, 1883. Linn. Soc. London, Jour., Zool. 17: 71.

Smicra vittata Ashmead, 1885. Amer. Ent. Soc., Trans. 12: Proc. p. x. ♀.

Spilochalcis mesillae Cockerell, 1897. Ann. Mag. Nat. Hist. (6) 19: 403. ♀.

Biology: Miller, 1963. Ohio Jour. Sci. 63: 70.

mariae (Riley). N. Y., s. to Fla., w. to Ill., Colo., Calif. Host: *Hyalophora cecropia* (L.), *H. promethea* (Drury), *Philosamia cynthia* (Drury), *Rothschildia* sp., *Telea polyphemus* (Cram.), *Thyridopteryx ephemeriformis* (Haw.).

Chalcis mariae Riley, 1870. Amer. Ent. 2: 101. ♂, ♀.

Chalcis mariae Riley, 1872. Mo. State Bd. Agr., Ann. Rpt. 7: 109, 123. Emend.

Biology: Schaffner and Griswold, 1934. U. S. Dept. Agr., Misc. Pub. 188: 26, 152. —Balduf, 1937. Ent. Soc. Wash., Proc. 39: 180.

phais Burks. S. C., Tex., Ariz.

Spilochalcis phais Burks, 1940. U. S. Natl. Mus., Proc. 88: 307. ♀, ♂.

SPECIES GROUP XANTHOSTIGMA

apaiis Burks. Tex.

Spilochalcis apaiis Burks, 1940. U. S. Natl. Mus., Proc. 88: 315. ♀.

arcana (Cresson). Mass., Del., Ala., N. Dak., Tex., Mont., Colo., Ariz.

Smicra arcana Cresson, 1872. Amer. Ent. Soc., Trans. 4: 44. ♂.

Smicra eucausta Cresson, 1872. Amer. Ent. Soc., Trans. 4: 46. "♂" = ♀.

bioculata (Cresson). Va., Fla., Ill., Iowa, Kans., Tex., Colo.

Smicra bioculata Cresson, 1872. Amer. Ent. Soc., Trans. 4: 43. ♂.

Smicra bioculata var. *faceta* Cresson, 1872. Amer. Ent. Soc., Trans. 4: 43. ♂.

juxta (Cresson). Md., Ill., Kans., Tex.; Mexico, Cent. and S. Amer., West Indies.

Smicra juxta Cresson, 1872. Amer. Ent. Soc., Trans. 4: 54. ♀.

Spilochalcis nigropleuralis Ashmead, 1904. Carnegie Mus., Mem. 1: 436. ♀, ♂.

Taxonomy: Gahan, 1948. Wash. Acad. Sci., Jour. 38: 244 (type of *nigropleuralis*).

lecta (Cresson). Tex., Calif.; Mexico.

Smicra lecta Cresson, 1872. Amer. Ent. Soc., Trans. 4: 44. ♀, ♂.

melana Burks. Maine, N. Y., Md., Va., Ill., Mo. Host: *Pachyschelus laevigatus* (Say).

Spilochalcis melana Burks, 1940. U. S. Natl. Mus., Proc. 88: 316. ♀, ♂.

odontotae Howard. N. J., D. C., N. C., Fla., Ariz.; Mexico. Host: *Xenochalepus dorsalis* (Thunb.).

Spilochalcis odontotae Howard, 1885. U. S. Dept. Agr., Bur. Ent. Bul. 5: 7, 32. ♂.

Biology: Chittenden, 1902. U. S. Dept. Agr., Div. Ent. Bul. 38: 82. —Krauss, 1952. Hawaii. Ent. Soc., Proc. 15: 124.

pallens (Cresson). S. C., Tex. Host: *Apanteles marginiventris* (Cress.), *Meteorus laphygmae* Vier., *Rogas laphygmae* Vier.

Smicra palens Cresson, 1865. Ent. Soc. Phila., Proc. 4: 96.

Smicra pallens Cresson, 1865. Ent. Soc. Phila., Proc. 4: 196. Emend.

Biology: Vickery, 1929. U. S. Dept. Agr., Tech. Bul. 138: 21, 32-35, 50-52, 58.

pallipes (Smith). Fla., Minn. Host: *Archips semifervans* (Walk.).

Chalcis flavipes Ashmead, 1885. Amer. Ent. Soc., Trans. 12: Proc. p. xi. ♂. Preocc. by Fabricius, 1793; Panzer, 1801.

Chalcis pallipes Smith, 1886. Ent. Amer. 2: 19. N. name.

Chalcis pallidipes Dalla Torre, 1898. Cat. Hym., v. 5, p. 391. Emend.

subobsoleta (Cresson). Ill., Iowa, N. Dak., S. Dak., Kans., Tex. Mont., Wyo., Colo., Oreg.

Smicra subobsoleta Cresson, 1872. Amer. Ent. Soc., Trans. 4: 42. ♂.

tanais Burks. Tex., Calif.; Mexico. Host: *Gnorimoschema* sp.

Spilochalcis tanais Burks, 1940. U. S. Natl. Mus., Proc. 88: 309. ♀, ♂.

xantha Burks. Tex., N. Mex., Ariz.

Spilochalcis xantha Burks, 1940. U. S. Natl. Mus., Proc. 88: 320. ♀.

SPECIES GROUP SIDE

Host records based on the rearing of a single male should be disregarded in this species group.

albifrons (Walsh). Que, Maine, s. to Fla., w. to B. C., Wash., Oreg., Calif.; Mexico. Host: *Exema dispar* Lacord., *Xenochalepus dorsalis* (Thunb.); *Ancylys comptana* (Froel.), *A. comptana fragariae* (W. and R.), *A. divisana* (Walk.), *Alsophila pometaria* (Har.), *Argyresthia aureoargentella* Brow., *A. laricella* Kearf., *A. thuella* (Pack.), *Aroalea cristifasciella* (Chamb.), *Bedellia somnulentella* (Zell.), *Bucculatrix variabilis* Braun, *Bomolocha deceptalis* (Walk.), *Choristoneura rosaceana* (Har.), *Coleophora fletcherella* Fern., *C. fuscescens* Zell., *C. laricella* (Hbn.), *C. malivorella* Riley, *C. pruniella* Clem., *Cremona cotoneastri* Busck, *Orgyia leucostigma* (A. and S.), *Spodoptera exigua* (Hbn.), *Plutella maculipennis* (Curtis), *Pseudaletia unipuncta* (Haw.); *Apanteles atalantae* (Pack.), *A. congregatus* (Say), *A. griffini* Vier., *A. lacteicolor* Vier., *A. militaris* (Walsh), *Bathyplectes exigua* (Grav.), *Gelis minimus* (Walsh).

Chalcis albifrons Walsh, 1861. Ill. State Agr. Soc., Trans. 4: 364, 369.

Spilochalcis torvina ancyloae Girault, 1920. U. S. Natl. Mus., Proc. 58: 192. ♀, ♂.

Biology: Daviault, 1942. La Foret Quebec. 4: 399. —Beacher, 1947. Ent. Soc. Amer., Ann. 40: 533-534. —Waddell, 1952. Ent. Soc. Brit. Columbia, Proc. 48: 97. —Harcourt, 1960. Canad. Ent. 92: 423. —Eidt and Sippell, 1961. Canad. Ent. 93: 17. —Puttler, 1961. Ent. Soc. Amer., Ann. 54: 29. —Eidt, 1962. Canad. Ent. 94: 34 (immature stages). —Poinar and Gyrisco, 1963. Jour. Econ. Ent. 56: 534 (primary parasite). —Kulman, 1965. Jour. Econ. Ent. 58: 864 (secondary parasite). —Puttler, 1966. Jour. Econ. Ent. 59: 483 (secondary parasite). —Cody et al., 1967. Mich. Ent. 1: 163.

delumbis (Cresson). Que., Ont., s. to Fla., w. to Wash., Oreg., Calif. Host: *Chlamisus plicatus* (F.), *Hypera rumicis* (L.), *Lema nigrovittata* (Guer.), *L. trilineata* (Oliv.).

Smicra delumbis Cresson, 1872. Amer. Ent. Soc., Trans. 4: 40. ♀, ♂.

Taxonomy: Smith, 1943. Kans. State Bd. Agr., Rpt. 62: 392 (description).

Biology: Chamberlin, 1933. Ent. Soc. Wash., Proc. 35: 106-107. —Weaver and Dorsey, 1965. Ent. Soc. Amer., Ann. 58: 934. —Puttler, 1966. Jour. Econ. Ent. 59: 475.

dema Burks. Pa., Va., N. C., Ind., Mo., Kans., N. Mex., Ariz., Calif.; Mexico. Host: *Fruentia nundinella* (Zell.).

Spilochalcis dema Burks, 1940. U. S. Natl. Mus., Proc. 88: 330. ♀, ♂.

flavopicta (Cresson). N. Y., s. to Fla., w. to Ill., Kans., N. Mex., Ariz., Calif.; Mexico, West Indies. Host: *Acrobasis caryivorella* Rag., *Anacampsis fragariella* Busck, *A. innocuella* (Zell.), *Ancylys comptana* (Froel.), *A. comptana fragariae* (W. and R.), *Celama sorghiella* (Riley), *Cryptothoelea nigrita* (B. and McD.), *Eurukuttarus confederata* (Grote), *Homocidus electellum* (Hulst), *Phalonia* sp., *Pieris protodice* (B. and L.), *Rhyacionia frustrana* (Comst.), *Sparganothis sulfureana* (Clem.); *Diadegma insulare* (Cress.), *Meteorus laphygmae* Vier.

Smicra flavopicta Cresson, 1865. Ent. Soc. Phila., Proc. 4: 99.

Smicra delira Cresson, 1872. Amer. Ent. Soc., Trans. 4: 41. ♂.

Smicra mendica Cresson, 1872. Amer. Ent. Soc., Trans. 4: 41. ♂.

Smicra decem-punctata Ashmead, 1881. Amer. Ent. Soc., Trans. 9: Proc. p. xxix. ♀.

Biology: Reinhard, 1938. Tex. Agr. Expt. Sta., Bul. 559: 31-32. —Underhill, 1943. Va. Agr. Expt. Sta., Bul. 349: 12. —Needham, 1948. Ecol. Monog. 18: 446.

leptis Burks. S. C., Ill., Ark., N. Dak., Nebr., Kans., Mont., Colo., N. Mex., Utah, Ariz., Idaho, Nev., Wash., Oreg., Calif. Host: *Ancylys comptana* (Froel.), *Archips argyrosipilus* (Walk.), *Cnephasia longana* (Haw.), *Rhyacionia frustrana* (Comst.), *Spilonota ocellana* (D. and S.), *Zelleria hainbachi* Busck.

Spilochalcis leptis Burks, 1940. U. S. Natl. Mus., Proc. 88: 340. ♀, ♂.

Biology: Eikenbary and Fox, 1965. S. C. Agr. Expt. Sta., Tech. Bul. 1017: 6.

sanguiniventris (Cresson). N. J., Va., N. C., Ga., Fla., Ark., Okla., Tex., Ariz., Calif. Host: *Exema conspersa* (Mann.), *Nuzonia pallidula* (Boh.); *Plutella maculipennis* (Curtis); *Meteorus* sp.

Smicra sanguiniventris Cresson, 1872. Amer. Ent. Soc., Trans. 4: 36, 43. ♀.

Smicra sanguineiventris Dalla Torre, 1898. Cat. Hym., v. 5, p. 381. Emend.

Biology: Rolston *et al.*, 1965. Kans. Ent. Soc., Jour. 38: 366 (pupal parasite).

side (Walker). Maine, s. to Fla., w. to Wash., Oreg., Calif., Mexico, West Indies. Ecology: May be either a primary or secondary parasite. Host: *Ceutorhynchus assimilis* (Payk.), *Hypera nigrirostris* (F.), *H. rumicis* (L.), *Rhynchaenus pallicornis* (Say); *Anagasta kuehniella* (Zell.), *Anarsia lineatella* Zell., *Ancylys comptana* (Froel.), *A. comptana fragariae* (W. and R.), *A. divisana* (Walk.), *Argyresthia thuella* Pack., *Argyrotaenia velutinana* (Walk.), *Bucculatrix thurberiella* Busck, *Choreutis silphiella* Grote, *Choristoneura rosaceana* (Har.), *Coleophora fletcherella* Fern., *C. fuscedinella* Zell., *C. laricella* (Hbn.), *C. maliorella* Riley, *C. pruniella* Clem., *Depressaria heractiana* (L.), *Epinotia nanana* (Treit.), *Exoteleia pinifoliella* (Chamb.), *Galleria mellonella* (L.), *Grapholitha molesta* (Busck), *Hulstia undulatella* (Clem.), *Spodoptera frugiperda* (A. and S.), *Plutella maculipennis* (Curtis), *Recurvaria piceaella* Kearf.; *Apanteles congregatus* (Say), *A. melanoscelus* Mues., *A. melanoscelus* (Ratz.), *A. militaris* (Walsh), *Campoletis argentifrons* (Cress.), *Diadegma insulare* (Cress.), *Meteorus laphygmae* Vier., *M. versicolor* (Wesm.). This sp. is often reared in the laboratory; progeny in laboratory cultures may be much larger and differently proportioned than were their parents from the wild.

Smicra side Walker, 1843. Soc. Ent. de France, Ann. (2) 1: 145. ♀.

Smicra torvina Cresson, 1872. Amer. Ent. Soc., Trans. 4: 40. ♀.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 165.

Biology: Vickery, 1929. U. S. Dept. Agr., Tech. Bul. 138: 21, 32-33, 52-53, 58 (*torvina*).—Doner, 1936. Ent. Soc. Amer., Ann. 29: 234 (*torvina*).—Arthur, 1958. Canad. Ent. 90: 590-595 (immature stages).—Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 91. —Allen, 1962. U. S. Dept. Agr., Tech. Bul. 1265: 111. —Roberts, 1966. Boyce Thomson Inst., Contrib. 23: 169.

Genus CERATOSMICRA Ashmead

Ceratasmicra Ashmead, 1904. Carnegie Mus., Mem. 1: 251, 253, 369.

Type-species: *Ceratasmicra petiolata* Ashmead. Monotypic.

Mischosmicra Ashmead, 1904. Carnegie Mus., Mem. 1: 251, 253, 381.

Type-species: *Mischosmicra kahlui* Ashmead. Monotypic.

Melanosmicra Ashmead, 1904. Carnegie Mus., Mem. 1: 251, 253, 380, 447.

Type-species: *Melanosmicra immaculata* Ashmead. Orig. desig.

Sayella Ashmead, 1904. Carnegie Mus., Mem. 1: 251, 253, 388.

Type-species: *Smicra debilis* Say. Orig. desig.

Eusayia Ashmead, 1904. Ent. Soc. Wash., Proc. 6: 126. N. name, unnecessarily proposed for *Sayella*, thought to be preocc. by *Sayella* Dall, 1885.

Revision: Burks, 1940. U. S. Natl. Mus., Proc. 88: 343-351. —Burks, 1968. Ent. Soc. Wash., Proc. 70: 170-174.

campoplegicis Burks. Calif. Host: *Apanteles koebele* Riley, Campoplegini (undet.).

Ceratasmicra campoplegicis Burks, 1968. Ent. Soc. Wash., Proc. 70: 172. ♀.

debilis (Say). R. I., s. to Fla., w. to Minn., Iowa, Kans., Tex., Ariz., Calif.; Mexico, West Indies, Cent. and S. Amer.

Chalcis debilis Say, 1836. Boston Jour. Nat. Hist. 1: 271.

Smicra longipetiolata Ashmead, 1885. Amer. Ent. Soc., Trans. 12: Proc. p. x. ♂.

Mischosmicra Kahlui Ashmead, 1904. Carnegie Mus., Mem. 1: 251. ♀.

immaculata (Cresson). Tex.; Mexico, Cent. and S. Amer. Host: *Apanteles* sp., *Campoletis sonorensis* (Cam.), *Meteorus* sp.

Smicra immaculata Cresson, 1865. Ent. Soc. Phila., Proc. 4: 97.

meteori Burks. Mass., s. to N. C., w. to Ill., La., Tex. and Wash.; Mexico. Host: *Apanteles delicatus* How., *A. hyphantriae* Riley, *A. melanoscelus* (Ratz.), *Casinarina limenitidis* (How.), *Meteorus hyphantriae* Riley.

Ceratasmicra meteori Burks, 1940. U. S. Natl. Mus., Proc. 88: 346. ♀, ♂.

paya Burks. Ga., Ill., Mo., Kans., Tex., Calif.

Ceratasmicra paya Burks, 1940. U. S. Natl. Mus., Proc. 88: 348. ♀, ♂.

provancheri Burks. Mass., Pa.

Ceratasmicra provancheri Burks, 1968. Ent. Soc. Wash., Proc. 70: 171. ♀.

SUBFAMILY BRACHYMERIINAE

Taxonomy: Steffan, 1950. Soc. Ent. de France, Bul. 55: 146-150 (tribal classification).

—Steffan, 1950. Paris Mus. d'Hist. Nat., Bul. (2) 22: 596-602 (tribal classification).

—Steffan, 1956. Soc. Ent. de France, Bul. 61: 238-242 (generic list with synonymy).

—Steffan, 1959. Mus. Natl. Pragae, Acta Ent. 33: 288 (key to tribes). —Habu, 1960. Natl. Inst. Agr. Sci. Japan, Bul. (C) 11: 140-141 (key to tribes).

Genus ACANTHOCHALCIS Cameron

Genus ACANTHOCHALCIS Subgenus ACANTHOCHALCIS Cameron

Acanthochalcis Cameron, 1884. Biol. Cent.-Amer., Hym., v. 1, p. 100.

Type-species: *Acanthochalcis nigricans* Cameron. Monotypic.

Taxonomy: Girault, 1920. U. S. Natl. Mus., Proc. 58: 193-194. —Steffan, 1959. Mus. Natl. Pragae, Acta Ent. 33: 307.

nigricans Cameron. Kans., Okla., Tex., N. Mex., Ariz., Calif.; Mexico.

Acanthochalcis nigricans Cameron, 1884. Biol. Cent.-Amer., Hym., v. 1, p. 100. ♀.

Genus ACANTHOCHALCIS Subgenus BELOCHALCIS Steffan

Acanthochalcis subg. *Belochalcis* Steffan, 1959. Mus. Natl. Pragae, Acta Ent. 33: 308.

Type-species: *Acanthochalcis unispinosa* Girault. Monotypic.

unispinosa Girault. Tex., Ariz., Calif. This species is probably the largest one in the Chalcidoidea.

Acanthochalcis unispinosa Girault, 1917. New Chalcid Flies, p. 5.

Genus PHASGONOPHORA Westwood

Phasgonophora Westwood, 1832. In Griffith, Cuvier's Animal Kingdom 15 (Insecta 2), p. 432, pl. 77, fig. 2.

Type-species: *Phasgonophora sulcata* Westwood. Monotypic.

Phasganophora Sichel, 1865. Soc. Ent. de France, Ann. (4) 5: 347. Emend.

sulcata Westwood. N. B., Maine, N. H., s. to Fla., w. to Oreg., Calif. Host: *Agrilus anxius* Gory, *A. bilineatus* (Weber), *Chrysobothris femorata* (Olivier).

Phasgonophora sulcata Westwood, 1832. In Griffith, Cuvier's Animal Kingdom 15 (Insecta 2), p. 432. ♀.

Smicra gigantea Ashmead, 1881. Canad. Ent. 13: 90. ♀.

Taxonomy: Burks, 1940. U. S. Natl. Mus., Proc. 88: 351 (*gigantea* Ashm.).

Biology: Blackman and Stage, 1924. N. Y. State Col. Forestry, Syracuse Univ., Tech. Pub. 17: 19, 22, 25. —Rhodes, 1924. In Blackman and Stage, N. Y. State Col. Forestry, Syracuse Univ., Tech. Pub. 17: 188. —Hoffman, 1940. Brooklyn Ent. Soc., Bul. 35: 63. —Nash *et al.*, 1951. Maine Forest Serv., Bul. 15: 40. —Barter, 1957. Canad. Ent. 89: 32.

Genus TRIGONURA Sichel

Phasganophora subg. *Trigonura* Sichel, 1865. Soc. Ent. de France, Ann. (4) 5: 347, 358, 376.

Type-species: *Phasganophora* (*Trigonura*) *crassicauda* Sichel. Monotypic.

Bactrochalcis Kieffer, 1912 (1911). Soc. Ent. de France, Ann. 80: 463.

Type-species: *Bactrochalcis reticulata* Kieffer. Monotypic.

Centrochalcis Cameron, 1913. Indian Forest Rec. 4: 92. Preocc. by Cameron, 1905.

Type-species: *Centrochalcis ruficaudis* Cameron. Monotypic.

Centrochalcidea Gahan and Fagan, 1923. U. S. Natl. Mus., Bul. 124: 28. N. name for *Centrochalcis* Cameron.

Revision: Burks, 1959. Ent. Soc. Amer., Ann. 52: 75-81.

algeri Burks. Tex., N. Mex., Ariz., Calif. Host: *Chrysobothris octocola* Lec., *C. piuta* Wick.

Trigonura algeri Burks, 1959. Ent. Soc. Amer., Ann. 52: 77. ♀, ♂.

californica Rohwer. Utah, Ariz., Oreg., Calif. Host: *Chrysobothris femorata* (Olivier), *C. mali* Horn.

Trigonura californica Rohwer, 1917. U. S. Natl. Mus., Proc. 53: 171. ♀, ♂.

elegans (Provancher). Que., Conn., Ont., N. Y., Pa., W. Va., Ill. Ark. Host: *Chrysobothris femorata* (Olivier), *C. sexsignata* Say, *Magdalis arnicollis* (Say), *M. barbata* (Say), *M. olyra* (Herbst).

Phasgonophora elegans Provancher, 1887. Addit. Corr. Faune Ent. Canada, Hym., p. 191. ♀.

Trigonura hicoloriae Rohwer, 1919. Canad. Ent. 51: 160. ♀, ♂.

Biology: Kaston, 1937. Conn. (State) Agr. Expt. Sta., Bul. 396: 357, 358. (*hicoloriae*).

insularis (Cresson). Fla.; West Indies.

Phasgonophora insularis Cresson, 1865. Ent. Soc. Phila., Proc. 4: 102. ♀, ♂.

pini Burks. Idaho, B. C., Wash., Oreg., Calif.

Trigonura pini Burks, 1959. Ent. Soc. Amer., Ann. 52: 80. ♀, ♂.

tarsata (Dalla Torre). N. B., Que., N. H., Vt., Mass., Ont., N. Y., Pa., Va., W. Va., N. C., Ohio.

Host: *Magdalis arnicollis* (Say), *M. barbata* (Say), *Pissodes strobi* (Peck).

Chalcis tarsalis Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 332. ♂. Preocc. by Motschulsky, 1863.

Chalcis tarsata Dalla Torre, 1898. Cat. Hym., v. 5, p. 393. N. name.

Biology: Hoffman, 1940. Brooklyn Ent. Soc., Bul. 35: 63.

ulmi Burks. Que., Ont., Vt., Conn., N. Y., N. J., Pa., N. C., Mich., Ill., Iowa, N. Dak. Host:

Magdalis arnicollis (Say), *Scolytus* sp., *S. quadripinosus* Say.

Trigonura ulmi Burks, 1959. Ent. Soc. Amer., Ann. 52: 80. ♀, ♂.

Genus BRACHYMERIA Westwood

Revision: Masi, 1929. Soc. Ent. Ital., Mem. 8: 117-120 (Ethiopian species). —Blanchard, 1935. Soc. Ent. Argentina, Rev. 7: 103-109 (Argentine species). —Burks, 1936. Ill. State Acad. Sci., Trans. 29: 251-254 (Illinois species). —Boucek, 1951. Mus. Natl. Pragae, Acta Ent. 27, Sup., 1: 17-29 (European species). —Erdos, 1955. Fauna Hung. 12 (2): 7-16 (Hungarian species). —Steffan, 1959. Cahiers des Nat. (n. s.) 15: 35-43 (French species). —Burks, 1960. Amer. Ent. Soc., Trans. 86: 225-273 (Nearctic species). —Habu, 1960. Natl. Inst. Agr. Sci. Japan, Bul. (C) 11: 142-212 (Japanese species). —Joseph *et al.*, 1973. Univ. Calicut, Zool. Monog. 1: 5-209 (Oriental species).

Taxonomy: Gahan and Fagan, 1923. U. S. Natl. Mus., Bul. 124: 24, 31 (*Brachymeria* should replace *Chalcis* of authors, not Fabricius). —Schmitz, 1946. Exploration Parc Natl. Albert, Mission De Witte, fasc.48: 15 (*Chalcis* correct name for this genus). —Ghesquiere, 1946. Rev. Zool. et Bot. Africaines 39: 372 (*Brachymeria* correct name for this genus).

Genus BRACHYMERIA Subgenus BRACHYMERIA Westwood

Brachymeria Westwood, 1829. In Stephens, Nomencl. Brit. Ins., v. 1, p. 36.

Type-species: *Chalcis minuta* Fabricius. Desig. by Westwood, 1840.

Tumidicora Girault, 1911. Zool. Jahrb., Abt. f. System. 31: 378.

Type-species: *Tumidicora nigra* Girault. Orig. desig.

Ceyxia Girault, 1911. Zool. Jahrb., Abt. f. System. 31: 382.

Type-species: *Ceyxia fumipennis* Girault. Orig. desig.

Brachepitelia Girault, 1913. Canad. Ent. 45: 106.

Type-species: *Brachepitelia rubripes* Girault. Orig. desig.

Pseudepitelia Girault, 1913. Canad. Ent. 45: 104.

Type-species: *Pseudepitelia rubrifemur* Girault. Orig. desig.

Tumidicoxella Girault, 1913. Roy. Soc. Soc. Austral., Trans. 37: 74.

Type-species: *Tumidicoxella nigricoxa* Girault. Orig. desig.

Tumidicoxoides Girault, 1913. Arch. f. Naturgesch. 79A (6): 86.

Type-species: *Tumidicoxoides kurandaensis* Girault. Monotypic.

Taxonomy: Habu, 1960. Natl. Inst. Agr. Sci. Japan, Bul. (C) 11: 144 (changed from genus to subgenus).

aeca Burks. N. S., Que., Maine, s. to Fla., w. to B. C., N. Mex. Host: *Chaetophlepsis* sp.

Probably parasitize other Tachinidae that parasitize Lepidoptera or Tenthredinidae.

Brachymeria (*Brachymeria*) **aeca** Burks, 1960. Amer. Ent. Soc., Trans. 86: 242. ♀, ♂.

alexinus (Walker). Ga.

Perilampus alexinus Walker, 1846. List. Hym. Brit. Mus., Chalcid., v. 1, p. 89. ♂.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 164 (transferred to *Brachymeria*).

belfragei (Crawford). Tex.; Mexico, Cent. Amer.

Chalcis belfragei Crawford, 1910 (1909). Ent. Soc. Wash., Proc. 11: 205. ♀.

coloradensis (Cresson). N. H., Ont., s. to Fla., w. to B. C., Calif.; Holarctic. Ecology: Oviposit on the wing in grasshoppers containing sarcophagid or tachinid parasites. Host:

Blaesoxipha hunteri (Hough), *B. kellyi* (Ald.), *Ceracia dentata* (Coq.).

Chalcis femorata Dalman, 1820. Svenska Vetensk. Akad., Handl. 41: 143. ♀. Preocc. by Panzer, 1801.

Chalcis coloradensis Cresson, 1872. Amer. Ent. Soc., Trans. 4: 60. ♂.

Chalcis Dalmanni (!) Thomson, 1875. Hym. Scand., v. 4, p. 17. ♂, ♀. N. name for *femorata* Dalman.

Chalcis tachinae Howard, 1885. U. S. Dept. Agr., Bur. Ent. Bul. 5: 8, 32, 36. ♀.

Biology: Burks, 1941. Ill. State Acad. Sci., Trans. 33: 208. —Smith, 1944. Canad. Ent. 76:

29-32. —Smith, 1957. Canad. Jour. Res. 36: 258. —Spencer, 1958. Tenth Internatl. Ent.

Cong., Proc. 4: 497. —Nikolskaja, 1960. Akad. Nauk SSSR, Zool. Inst., Trudy 27: 222.

—Steffan, 1962. Fragmenta Ent. 4: 23. —Smith, 1965. Canad. Jour. Zool. 43: 187.

—Huggans and Blickenstaff, 1966. Mo. Agr. Expt. Sta., Res. Bul. 903: 36.

comitator (Walker). N. Y., N. J., Fla., Tex.; Mexico, s. to Brazil. An adventive species, always brought in in bananas. Host: *Ceramidia* sp., *C. butleri* (Moesch.), *C. viridis* (Druce).

Chalcis comitator Walker, 1862. Ent. Soc. London, Trans. (3) 1: 350. ♂.

Biology: Harrison, 1963. Jour. Econ. Ent. 56: 284 (both primary and secondary parasite).

compsilurae (Crawford). Maine, Ont., s. to N. C., w. to Man., Mont., Colo., N. Mex., B. C., Oreg.

Host: *Blepharipa scutellata* (R.-D.), *Carcelia amplexa* (Coq.), *C. laxifrons* Vill., *Compsilura concinnata* (Meig.), *Euphorocera claripennis* (Macq.), *E. edwardsii* (Will.), *Exorista larvarum* (L.), *Leschenaultia fulvipes* (Bigot), *Lespesia aletia* (Riley), *L. frenchii* (Will.), *Parasetigena agilis* (R.-D.), *Pelatachina pellucida* Coq., *Townsendiellomyia nidicola* (Tns.).

Chalcis compsilurae Crawford, 1911. U. S. Natl. Mus. Proc. 41: 272. ♀, ♂.

Biology: Dowden, 1935. Jour. Agr. Res. 50: 495-523. —Salt, 1941. Cambridge Phil. Soc., Biol.

Rev. 16: 253-255. —Flanders, 1944. Jour. Econ. Ent. 37: 409-410. —Kulman and Hodson,

1961. Jour. Econ. Ent. 54: 221. —Dixon and Benjamin, 1963. Jour. Econ. Ent. 56: 267.

fonscolombei (Dufour). N. J., s. to Fla., w. to Ill., Mo., Kans., Colo., Ariz., Calif.; world-wide, in all faunal regions. Host: *Blaesoxipha impar* (Ald.), *B. plinthopyga* (Wied.), *Calliphora*

coloradensis Hough, *Cochliomyia macellaria* (F.), *Lucilia illustris* (Meig.), *Orchellia caesarion* (Meig.), *Phaenicia mexicana* (Macq.), *P. sericata* (Meig.), *Phormia regina* (Meig.), *Sarcophaga* sp., *S. haemorrhoidalis* (Fall.), *Synthesiomia nudiseta* (Wulp).

Chalcis podagrica Fonscolombe, 1832. Ann. des Sci. Nat. 26: 277. Preocc. by Fabricius, 1787.

Chalcis Fonscolombei Dufour, 1841. Soc. Ent. de France, Ann. 10: 12. N. name.

Taxonomy: Burks, 1936. Ill. State Acad. Sci., Trans. 29: 254 (lectotype). —Gahan, 1942. U. S. Natl. Mus., Proc. 92: 49 (redescription).

- Biology: Roberts, 1933. Ent. News 44: 158. — Roberts, 1933. U. S. Dept. Agr., Tech. Bul. 365: 1-21. — Roberts, 1933. Ecology 14: 311-312. — Jannone, 1934. Lab. Zool. Gen. e Agr. Portici, Bol. 28: 146. — Roberts, 1935. Jour. Agr. Res. 50: 489-490. — Nikolskaja, 1960. Akad. Nauk SSSR, Zool. Inst., Trudy 27: 222.
- hammari** (Crawford). Md., s. to Fla., w. to Ill., Mo., Kans., Calif. Host: *Acrobasis caryae* Grote, *A. juglandis* (LeB.), *Ancylys comptana fragariae* (W. and R.), *Archips argyrospilus* (Walk.), *Argyrotaenia citrana* (Fern.), *Filatima monotaeniella* (Bott.), *Grapholitha molesta* (Busck), *Laspeyresia caryana* (Fitch), *L. pomonella* (L.), *Platynota sultana* Wlsh., *Psorosina hammondi* (Riley).
- Chalcis hammari* Crawford, 1915. Insecutor Inscitiae Menstruus 3: 89. ♀, ♂.
- Biology: Nettles, 1934. Jour. Econ. Ent. 27: 815-816. — Nickels *et al.*, 1950. U. S. Dept. Agr., Tech. Bul. 1011: 2, 18. — Bennett, 1961. Tenn. Acad. Sci., Jour. 36: 353.
- incerta** (Cresson). Fla.; West Indies, British Guiana, Brazil. Ecology: Both primary and secondary parasite. Host: *Alabama argillacea* (Hbn.), *Ascia monuste* (L.), *Brassolis sophorae* (L.), *Calpodex ethlius* (Stoll), *Eantis thraso* Hbn., *Lynire albipennis* (H.-S.), *Megalopyge krugii* Dewitz, *Mesocondyla concordalis* Hbn., *M. gastralis* Guen., *Phoebis sennae* (L.), *Pieris monuste* (L.), *Sylepta* sp.; *Carcelia flavirostris* (Wulp).
- Chalcis incerta* Cresson, 1865. Ent. Soc. Phila., Proc. 4: 101.
- Taxonomy: Wolcott, 1936. Puerto Rico Univ., Jour. Agr. 20: 535 (description and fig.). — Dinther, 1960. Surinam. Landproefsta. (B) 76: 126 (description and fig.).
- Biology: Waterston, 1923. Bul. Ent. Res. 14: 104. — Cleare and Squire, 1934. Agr. Jour. Brit. Guiana 5: 190. — Fife, 1939. Puerto Rico Agr. Expt. Sta., Bul. 39: 6. — Needham, 1948. Ecol. Monog. 18: 446.
- intermedia** (Nees). Maine, N. H., Vt., Mass., R. I., Conn., N. Y., N. J., Pa., Del., Md.; Europe, N. Africa. Introduced first in 1905 from Europe, and repeatedly introduced until 1933; first recovered in Mass. in 1942. Recovered in large numbers since 1960. Host: *Porthetria dispar* (L.). Numerous other hosts in Lepidoptera and some in Diptera recorded in the literature.
- Chalcis intermedia* Nees, 1834. Hym. Ich. Aff. Monog., v. 2, p. 29. ♂.
- Biology: Howard and Fiske, 1911. U. S. Dept. Agr., Bur. Ent. Bul. 91: 240-309 (*flavipes*). — Masi, 1916. Mus. Civ. Stor. Nat. Genova, Ann. (3) 7: 78 (*flavipes*). — Fahringer, 1921. Ztschr. f. Wiss. Insektenbiol. 17: 43. — Mercet, 1923. Rev. Fitopat. 1: 17. — Burgess and Crossman, 1929. U. S. Dept. Agr., Tech. Bul. 86: 116-118. — Mercet, 1932. Par. Ins. Perjudiciales, pp. 66-68. — Dowden, 1935. Jour. Agr. Res. 50: 497-509. — Schedl, 1936. Ztschr. Angew. Ent. 22, Beiheft, pp. 169-170. — Boucek and Sedivy, 1954. Folia Zool. et Ent. 3: 183. — Karnozitzky, 1957. Bulgar. Akad. Nauk Zool. Inst., Trud. 4: 51, 97. — Martelli and Arru, 1958. Bol. Zool. Agr. e Bachicolt. (2) 1: 26. — Kolomiets, 1958. Ent. Obozr. 37: 608. — Romanyk, 1959. Acad. de Cien. Exact., Fis. y Nat., Madrid, Rev. 53: 402. — Burks, 1960. Ent. News 71: 62. — Romanyk and Ruperez, 1960. Entomophaga 5: 231. — Hazdistevic, 1961. Zastita Bilja 56-66: 107. — Stefanov and Keremdziev, 1961. Sofia Vissch. Lesotekh. Inst. Nauch., Trud. 9: 165. — Capek, 1963. Banska Stiavnica. Vyskum. Ustav Lesn. Hosp. Ved. Prace 4: 265. — Zelinskaya, 1964. Akad. Nauk Ukrain. RSR, Inst. Zool., Trudy 20: 199. — Leonard, 1966. Ent. News 77: 25. — Prokopy, 1968. Jour. Econ. Ent. 61: 351. — Leonard, 1971. Canad. Ent. 103: 654. — Doane, 1971. Ent. Soc. Amer., Ann. 64: 753.
- molestae** Burks. Md., s. to Fla., w. to Ind., Tenn., Miss. Host: *Anchylopera platanana* Clem., *Ancylys comptana fragariae* (W. and R.), *Arogalea cristifasciella* (Chamb.), *Grapholitha molesta* (Busck).
- Brachymeria* (*Brachymeria*) *molestae* Burks, 1960. Amer. Ent. Soc., Trans. 86: 245. ♀, ♂.
- Biology: Eikenberry and Fox, 1965. S. C. Agr. Expt. Sta., Tech. Bul. 1017: 6.
- ovata** (Say). Conn., N. Y., and Ont., s. to Fla., w. to Oreg. and Calif.; Mexico. Ecology: Oviposits in the pupae of over 100 species of Lepidoptera of the families Psychidae to Papilionidae, the limiting factor being size, pupae of 1.5 cm. or greater length, and exposure—it finds its hosts on the wing, not by crawling into crevices.
- Chalcis ovata* Say, 1824. In Keating, Narr. Long's 2nd Exped., App. p. 326.

- Leucospis integra* Haldeman, 1844. Acad. Nat. Sci. Phila., Proc. 2: 53. ♂.
Chalcis ovata var. *abiesae* Girault, 1917. Descr. Stellarum Nov., p. 19. ♀, ♂.
- Taxonomy: Cresson, 1872. Amer. Ent. Soc., Trans. 4: 35 (redescription of *ovata* Say, probably synonym of *integra* Hald.). — Rohwer, 1918. Ent. Soc. Wash., Proc. 20: 18 (var. *abiesae*). — Burks, 1960. Amer. Ent. Soc., Trans. 86: 259 (synonymy).
- Biology: Howard, 1897. U. S. Dept. Agr., Div. Ent., Tech. Ser. 5: 25-28. — Snodgrass, 1917. Ind. State Ent., Ann. Rpt. 9: 180, 188-189. — Burks, 1936. Ill. State Acad. Sci., Trans. 29: 253 (hibernation). — Balduf, 1937. Ent. Soc. Wash., Proc. 39: 180-181. — Donohoe and Kaloostian, 1937. Jour. Econ. Ent. 30: 967-968. — Genung, 1959. Fla. Ent. 42: 40. — Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 91 (life cycle). — Bennett, 1961. Tenn. Acad. Sci., Jour. 36: 353 (habits). — Allen, 1962. U. S. Dept. Agr., Tech. Bul. 1265: 110-111 (life hist.). — Arthur, 1962. Canad. Ent. 94: 1087. — Oatman and Jenkins, 1962. Mo. Univ., Col. Agr., Res. Bul. 789: 13. — Ciesla, 1964. Ent. Soc. Amer., Ann. 57: 595. — Roberts, 1966. Boyce Thompson Inst., Contrib. 23: 169.
- Morphology: Burks, 1936. Ill. State Acad. Sci., Trans. 29: 253 (male genitalia). — Snodgrass, 1941. Smithsn. Inst., Misc. Collect. 99: 36-37 (male genitalia).
- robusta** (Cresson). Fla.; West Indies. Host: *Celerio lineata* (F.), *Spodoptera frugiperda* (Smith), *Lymire edwardsi* Grote, *Megalopyge krugii* Dewitz, *M. opercularis* (A. and S.), *Mocis latipes* (Guen.), *Neonympha* sp., *Papilio cresphontes* Cram.
Chalcis robusta Cresson, 1865. Ent. Soc. Phila., Proc. 4: 101.
Chalcis robustella Wolcott, 1924 (1923). Puerto Rico Dept. Agr., Jour. 7: 56.
- Biology: Genung, 1959. Fla. Ent. 42: 40.
- russelli** Burks. Miss., Tex., N. Mex., Ariz.; Mexico. Host: *Chelymormpha cassidea* (F.), *Coptocyclus* (*Psaidonota*) *texana* (Schaeffer), *Nuzonia* sp.
Brachymeria (*Brachymeria*) *russelli* Burks, 1960. Amer. Ent. Soc., Trans. 86: 240. ♀, ♂.
- slossonae** (Crawford). Fla. Host: *Ephyriades brunnea floridensis* B. and C.
Chalcis slossonae Crawford, 1910 (1909). Ent. Soc. Wash., Proc. 11: 205. ♀, ♂.
- Biology: Tamburo and Butcher, 1955. Fla. Ent. 38: 68.
- tregularis** (Cresson). Tenn., Wis., Ill., Ark., Tex., w. to Wash., Oreg., Calif. Ecology: A secondary parasite of grasshoppers. Host: *Ceracina dentata* (Coq.), *Hemithrixion oestriiforme* B. and B.
Chalcis tregularis Cresson, 1872. Amer. Ent. Soc., Trans. 4: 60. ♀.
- Biology: Burks, 1940. Ill. State Acad. Sci., Trans. 33: 208. — St. Amand and Cloyd, 1954. Jour. Parasitol. 40: 83. — Smith, 1957. Canad. Jour. Zool. 36: 259. — Spencer, 1958. Tenth Internatl. Cong. Ent., Proc. 4: 501.
- truncatella** Burks. Sask., Nebr., Kans., Tex., Colo., N. Mex., Ariz., Calif.
Brachymeria (*Brachymeria*) *truncatella* Burks, 1960. Amer. Ent. Soc., Trans. 86: 234. ♀, ♂.
 Preocc. by *Brachymeria truncata* (Schmitz), 1946.
Brachymeria truncatella Burks, 1967. In Krombein and Burks, U. S. Dept. Agr., Agr. Monog. 2, Sup. 2: 279. N. name.
- weemsi** Burks. Ga., Fla.
Brachymeria (*Brachymeria*) *weemsi* Burks, 1960. Amer. Ent. Soc., Trans. 86: 236. ♀.

Genus BRACHYMERIA Subgenus GAHANULA Burks

- Brachymeria* subg. *Gahanula* Burks, 1960. Amer. Ent. Soc., Trans. 86: 261.
 Type-species: *Brachymeria discreta* Gahan. Orig. desig.
- discreta** Gahan. Tex., Ariz., Calif.; Mexico, Hawaii. Ecology: Reared from nest of *Polistes* infested with moth larvae.
Brachymeria discreta Gahan, 1942. U. S. Natl. Mus., Proc. 92: 43. ♀, ♂.
- discretoidea** Gahan. Tex., Ariz.; Cent. Amer. Ecology: Reared from nests of *Trigona* infested with moth larvae.
Brachymeria discretoidea Gahan, 1942. U. S. Natl. Mus., Proc. 92: 44. ♀, ♂.

Genus BRACHYMERIA Subgenus PSEUDOBACHYMERIA Burks

Brachymeria subg. *Pseudobrachymeria* Burks, 1960. Amer. Ent. Soc., Trans. 86: 263.

Type-species: *Pseudochalcis conica* Ashmead. Orig. desig.

This is the taxon that took the name *Pseudochalcis* in Ashmead's 1904 classification (Carnegie Mus., Mem. 1: 249-250, 407). The true genus *Pseudochalcis* Kirby was shown by Steffan in 1956 to be a synonym of *Stypiura* Kirby (Soc. Ent. de France, Bul. 61: 240).

columbiana (Howard). D. C., Va., N. C., Fla., La. Ecology: Said to have been reared from Coccidae, but more likely emerged from *Laetilia coccidivora* (Comst.), a moth that preys on coccids.

Chalcis columbiana Howard, 1885. U. S. Dept. Agr., Bur. Ent. Bul. 5: 8, 36. ♀.

Chalcis louisiana Girault, 1917. Descr. Stellarum Nov., p. 6. ♀.

conica (Ashmead). Tex.; Mexico. West Indies, S. and Cent. Amer.

Pseudochalcis conica Ashmead, 1904. Carnegie Mus., Mem. 1: 407. ♀.

flegiae Burks. Fla., Tex. Host: *Palpita flegia* (Cram.).

Brachymeria (*Pseudobrachymeria*) *flegiae* Burks, 1960. Amer. Ent. Soc., Trans. 86: 271. ♀, ♂.

laetiliae Burks. N. C., Okla., N. Mex., Ariz., Calif. Host: *Laetilia coccidivora* (Comst.), *L. zamacrella* Dyar.

Brachymeria (*Pseudobrachymeria*) *laetiliae* Burks, 1960. Amer. Ent. Soc., Trans. 86: 268. ♀, ♂.

pedalis (Cresson). Fla., Tex., Colo., N. Mex., Ariz., Calif.; Mexico. Ecology: Parasitizes moths living on cactus. Host: *Noctuella elautalis* (Grote), *Melitara prodenialis* Walk., *M.*

dentata Grote, *Olycella junctolineella* (Hulst), *Ozamia clarefacta* Dyar. The Argentine species *Brachymeria* (*Pseudobrachymeria*) *caetoblastidis* Blanchard may be a synonym of this species.

Chalcis pedalis Cresson, 1872. Amer. Ent. Soc., Trans. 4: 60. ♀.

psyche Burks. Fla. Host: *Oiketiscus abbotii* Grote.

Brachymeria (*Pseudobrachymeria*) *psyche* Burks, 1960. Amer. Ent. Soc., Trans. 86: 267. ♀.

Family LEUCOSPIDIDAE

By B. D. BURKS

All members of the Leucospididae are primary parasites of aculeate Hymenoptera, developing on the fully grown larvae or pupae. The adult female drills through the cell wall of the host with her lengthy ovipositor, and also through the cocoon inside the cell if there is one, and deposits her egg inside. This egg is suspended by a slender stalk. When the egg hatches, the active larva searches out its host, attaches to it, and feeds at various places on its body. Later instars are more quiescent. Pupation occurs inside the cell of the host, and the adult uses its mandibles to break an opening to the outside. The adults often are taken by sweeping flowers, because they feed on pollen. They tend to resemble their hosts in body form and color.

Revision: Weld, 1922. U. S. Natl. Mus., Proc. 61 (6): 1-43 (N. Amer. spp.; key to females).

—Boucek, 1959. Mus. Natl. Pragae, Acta Ent. 33: 435-444 (European spp.). —Nikolskaja, 1960. Fauna USSR, n. s., v. 7, n. 5, pp. 192-212 (Russian spp.). —Habu, 1962. Fauna Japonica, pp. 165-177 (Japanese spp.).

Taxonomy: Mani, 1937. Indian Mus., Rec. 39: 287-293 (spp. of India). —Mani, 1938. Cat.

Indian Ins. 23: 46-49, 146. —Steffan, 1948. Soc. Ent. de France, Bul. 53: 81-84. —Burks, 1961. Studia Ent. Rio de Janeiro 4: 540 (S. Amer. spp.).

Biology: Clausen, 1940 (reprint 1962). Entomophagous Ins., pp. 236-238.

Genus LEUCOSPIS Fabricius

Leucospis Fabricius, 1775. Syst. Ent., p. 361.

Type-species: *Leucospis dorsigera* Fabricius. Monotypic.

Coelogaster Schrank, 1780. Schrift. Gesell. Naturf. Freunde Berlin 1: 303 (no species).

Type-species: *Coelogaster passavianus* Schrank. Included by Schrank, 1782.

Leucospis Burmeister, 1835. Arch. f. Naturgesch. 1 (2): 47. Emend.

Leucopsis Turton, 1802. In Linnaeus Syst. Nat. 3: 503 (error, frequently repeated;

Leucopsis Berthold, 1827, Recognized as valid in Aves).

Leucopsis subg. *Metallopsis* Westwood, 1839. Ztschr. f. Ent. 1: 264.

Type-species: *Leucopsis (Metallopsis) cayennensis* Westwood. Monotypic.

Erochlaenus Shipp, 1894. Ent. Monthly Mag. 30: 245.

Type-species: *Leucopsis anthidioides* Westwood. Orig. desig.

Pareroclaenus Girault, 1915. Queensland Mus., Mem. 4: 355.

Type-species: *Pareroclaenus vespoides* Girault. Orig. desig.

Eroclaenoides Girault, 1915. Queensland Mus., Mem. 4: 356.

Type-species: *Eroclaenoides uncinatus* Girault. Orig. desig.

affinis affinis Say. Widespread in Canada and the U. S. except for S. Fla. and the extreme southwestern Sonoran zone. Host: *Anthidium emarginatum* (Say), *A. maculosum* Cress., *Ashmeadiella meliloti aridula* Ckll., *Dianthidium pudicum consimile* (Ashm.), *Hoplitis producta* (Cress.), *Megachile* sp., *M. brevis* Say, *M. gentilis* Cress., *M. inermis* Prov., *M. montivaga* Cress., *M. relativa* Cress., *Osmia atriventris* Cress., *O. kincaidii* Ckll., *O. punila* Cress., *O. simillima* Smith, *Stelis* sp., *S. sexmaculata* Ashm. There is an undescribed subspecies of *affinis* in the southwestern Sonoran region.

Leucopsis affinis Say, 1824. In Keating, Narr. Long's 2nd Exped., App. p. 327. ♀, ♂.

Leucopsis subnotata Westwood, 1834. Ent. Mag. 2: 215. ♀.

Leucopsis fraterna Say, 1836. Boston Jour. Nat. Hist. 1: 269. ♀, ♂.

Leucopsis basalis Westwood, 1839. Ztschr. f. Ent. 1: 264. ♂, ♀.

Leucopsis Canadensis Walker, 1860. Jour. Ent. 1: 17. ♂.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 166.

Leucopsis bicincta Viereck, 1906. Amer. Ent. Soc., Trans. 32: 227. ♂.

Biology: Graenicher, 1906. Wis. Nat. Hist. Soc., Bul. 4: 153-159. —Medler, 1958. Ent. News 69: 21-24. —Medler and Koerber, 1958. Ent. Soc. Amer., Ann. 51: 340-344. —Medler, 1958. Canad. Ent. 90: 326-327. —Medler, 1964. Canad. Ent. 96: 920. —Johansen and Eves, 1966. Wash. Agr. Expt. Sta., Cir. 469: 5. —Parker and Bohart, 1966. Pan-Pacific Ent. 42: 95-97. —Medler, 1967. Ent. Soc. Amer., Ann. 60: 342. —Krombein, 1967. Trap-nesting wasps and bees, pp. 434-436. —Medler and Lussenhop, 1968. Wis. Coll. Agr., Res. Bul. 274: 20-47.

Morphology: Snodgrass, 1910. U. S. Natl. Mus., Proc. 39: 65, figs. 35-39 (thorax). —Burks, 1938. Ent. Soc. Amer., Ann. 31: 158, fig. 5 (wing venation). —Snodgrass, 1941. Smithsn. Misc. Collect. 99: 36-37 (male genitalia). —Bradley, 1955. Soc. Roy. d'Ent. de Belg., Mem. 27: 134, fig. 6 (wing venation).

affinis floridana Cresson. Cent. and S. Fla. Host: *Chalicodoma (Chelostomoides)* sp., *C. (C.) georgica* Cress., *Megachile (Sayapis)* sp.

Leucopsis affinis var. *floridana* Cresson, 1872. Amer. Ent. Soc., Trans. 4: 33. ♀, ♂.

Taxonomy: Weld, 1922. U. S. Natl. Mus., Proc. 61 (6): 10, 26.

Biology: Krombein, 1967. Trap-nesting wasps and bees, pp. 436-437.

birkmani Brues. Fla., Tex., Ariz.; Mexico.

Leucopsis birkmani Brues, 1925. Psyche 32: 23. ♀.

robertsoni Crawford. Fla., Ala.

Leucopsis robertsoni Crawford, 1909. Ent. Soc. Wash., Proc. 11: 51. ♀, ♂.

slossonae Weld. Ga., Fla., Ala. Host: *Anthidiellum* sp.

Leucopsis slossonae Weld, 1922. U. S. Natl. Mus., Proc. 61 (6): 11. ♀, ♂.

texana Cresson. N. C., Ga., Tex.

Leucopsis texana Cresson, 1872. Amer. Ent. Soc., Trans. 4: 31, 191. ♂.

Family EUCHARITIDAE

By B. D. BURKS

All members of this family are parasitic on ants. They are, like most parasites of ants, highly modified in structure. Ashmead, 1904 (Carnegie Mus., Mem. 1: 267) characterizes them as being,

"the most singular looking and wonderfully shaped chalcids known, the structure of the thorax, and particularly of the scutellum, being most wonderfully and curiously modified and developed; this development, in connection with the brilliant colors of its members, makes the group the most striking and attractive of any in the superfamily." However, disregarding these adaptive differences, but considering the fundamental structure of the thorax, it is clear that the eucharitids are descended from the same ancestral stem that produced the present-day pteromalids.

Revision: Ruschka, 1924. Deut. Ent. Ztschr., 1924: 82-89. — Gahan, 1940. U. S. Natl. Mus., Proc. 88: 425-458.

Biology: Wheeler and Wheeler, 1937. Ent. Soc. Amer., Ann. 30: 163-175. — Clausen, 1940. Wash. Acad. Sci., Jour. 30: 504-516.

SUBFAMILY ORASEMINAE

Genus ORASEMA Cameron

Orasema Cameron, 1884. Biol. Cent.-Amer., Hym. 1, p. 104.

Type-species: *Orasema stramineipes* Cameron. Monotypic. Illustrations accompanying description of *stramineipes* mislabeled *flavipes*.

Semora Cameron, 1909. Amer. Ent. Soc., Trans. 35: 432. Preocc. by Peckham, 1892.

Type-species: *Semora xanthopus* Cameron. Orig. desig.

Semorella Ghesquiere, 1946. Rev. Zool. Bot. Africaines 39: 368. N. name.

Semorata Strand, 1947. Folia Zool. Hydrobiol. 11: 393. N. name.

Revision: Gahan, 1940. U. S. Natl. Mus., Proc. 88: 436-458.

Taxonomy: Kerrich, 1963. Bul. Ent. Res. 54: 366.

aureoviridis Gahan. Tex.

Orasema aureoviridis Gahan, 1940. U. S. Natl. Mus., Proc. 88: 448. ♀, ♂.

bakeri Gahan. Colo., Ariz.

Orasema bakeri Gahan, 1940. U. S. Natl. Mus., Proc. 88: 452. ♀, ♂.

beameri Gahan. Colo.

Orasema beameri Gahan, 1940. U. S. Natl. Mus., Proc. 88: 447. ♀, ♂.

cockerelli Gahan. Iowa, Kans., Colo., N. Mex., Ariz.

Orasema cockerelli Gahan, 1940. U. S. Natl. Mus., Proc. 88: 453. ♀, ♂.

coloradensis Wheeler. Va., Fla., Iowa, La., Kans., Tex., Colo., N. Mex. Host: *Pheidole bicarinata vinelandica* Forel, *Solenopsis molesta* (Say).

Orasema coloradensis Wheeler, 1907. Amer. Mus. Nat. Hist., Bul. 23: 12-14. ♀, ♂.

Biology: Clausen, 1940. Wash. Acad. Sci., Jour. 30: 504-507.

minuta Ashmead. Fla.

Orasema minuta Ashmead, 1888. Ent. Amer. 3: 188. ♂.

neomexicana Gahan. N. Mex.; Mexico.

Orasema neomexicana Gahan, 1940. U. S. Natl. Mus., Proc. 88: 450. ♀.

occidentalis Ashmead. Calif.

Orasema occidentalis Ashmead, 1892. Ent. Soc. Wash., Proc. 2: 355. ♀.

robertsoni Gahan. Fla. Host: *Pheidole dentata* Mayr.

Orasema robertsoni Gahan, 1940. U. S. Natl. Mus., Proc. 88: 451. ♀.

Biology: van Pelt, 1950. Ent. News 61: 161.

simulatrix Gahan. Ariz.

Orasema simulatrix Gahan, 1940. U. S. Natl. Mus., Proc. 88: 450. ♀.

smithi Howard. Va.

Orasema Smithi Howard, 1897. Linn. Soc. London, Jour., Zool. 26: 134. ♀.

texana Gahan. Tex.

Orasema texana Gahan, 1940. U. S. Natl. Mus., Proc. 88: 440. ♀.

tolteca Mann. Ariz.; Mexico. Host: *Pheidole* sp.

Orasema tolteca Mann, 1914. Psyche 21: 183-184. ♀, ♂.

violacea Ashmead. N. C., Fla.

Orasema violacea Ashmead, 1888. Ent. Amer. 3: 187. ♂.

viridis Ashmead. N. C., N. Mex., Ariz.; Mexico.

Orasema viridis Ashmead, 1895. Calif. Acad. Sci., Proc. (2) 5: 553.

Biology: Smith, 1912. U. S. Dept. Agr., Bur. Ent. Tech. Ser. 19: 57-59.

Morphology: Parker, 1924. Soc. Ent. de France, Ann. 93: 270 (larva).

wheeleri Wheeler. Tex., Colo. Host: *Pheidole ceres* Whlr., *P. sciophila* Whlr., *P. tepicana* Pergande.

Orasema wheeleri Wheeler, 1907. Amer. Mus. Nat. Hist., Bul. 23: 14. ♀.

SUBFAMILY EUCHARITINAE

Genus PSEDOCHALCURA Ashmead

Pseudochalcura Ashmead, 1904. Carnegie Mus., Mem. 1: 268, 269, 468.

Type-species: *Eucharis gibbosa* Provancher. Orig. desig.

arizonensis (Crawford). Ariz.

Chalcura arizonensis Crawford, 1914. Ent. Soc. Wash., Proc. 16: 29. ♀.

Biology: Pierce and Morrill, 1914. Ent. Soc. Wash., Proc. 16: 22. — Clausen, 1940. Wash. Acad. Sci., Jour. 30: 505-509.

californica (Ashmead). Oreg., Calif.

Chalcura californica Ashmead, 1892. Ent. Soc. Wash., Proc. 2: 356. ♂.

gibbosa (Provancher). Que., N. H., Mich. Host: *Camponotus novaeboracensis* (Fitch).

Eucharis gibbosa Provancher, 1881. Nat. Canad. 12: 292. ♀.

Taxonomy: Burks, 1964 (1963). Canad. Ent. 95: 1258.

Biology: Wheeler, 1907. Amer. Mus. Nat. Hist., Bul. 23: 16.

Genus STILBULA Spinola

Stilbula Spinola, 1811. Paris Mus. Hist. Nat., Ann. 17: 150.

Type-species: *Ichneumon cyniformis* Rossi. Monotypic.

floridana (Ashmead). Fla.

Lophyrocera floridana Ashmead, 1888. Ent. Amer. 3: 187. ♂.

Taxonomy: Gahan, 1940. U. S. Natl. Mus., Proc. 88: 435-436.

montana Ashmead. Colo.

Stilbula montana Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 24, 45. ♀.

septentrionalis (Brues). Ariz.

Schizaspidia septentrionalis Brues, 1907. Wis. Nat. Hist. Soc., Bul. 5: 104. ♀.

Genus LOPHYROCERA Cameron

Lophyrocera Cameron, 1884. Biol. Cent.-Amer., Hym. 1, pp. 101, 103.

Type-species: *Lophyrocera stramineipes* Cameron. Desig. by Ashmead, 1904.

apicalis Ashmead. Calif.

Lophyrocera apicalis Ashmead, 1892. Ent. Soc. Wash., Proc. 2: 357. ♀.

nigromaculata Cameron. Ariz.; Cent. Amer.

Lophyrocera nigromaculata Cameron, 1884. Biol. Cent.-Amer., Hym. 1, p. 104.

Genus KAPALA Cameron

Kapala Cameron, 1884. Biol. Cent.-Amer., Hym. 1, p. 102.

Type-species: *Eucharis furcata* Fabricius. Monotypic.

Capala Schulz, 1906. Spolia Hym., p. 150. Emend.

floridana (Ashmead). Fla.

Thoracantha floridana Ashmead, 1885. Ent. Amer. 1: 96. ♂.

Taxonomy: Ashmead, 1885. Amer. Ent. Soc., Trans. 12: Proc. p. xi.

furcata (Fabricius). Ga., Tex.; West Indies, Cent. and South Amer.

Eucharis furcata Fabricius, 1804. *Systema Piezatorum*, p. 158.

Taxonomy: Brues, 1907. *Wis. Nat. Hist. Soc.*, Bul. 5: 105.

Genus PSEUDOMETAGEA Ashmead

Pseudometagea Ashmead, 1899. *Ent. Soc. Wash.*, Proc. 4: 239, 241. No species — Ashmead, 1904, Carnegie Mus., Mem. 1: 267. One species.

Type-species: *Metagea schwarzi* Ashmead. Desig. by Ashmead, 1904.

Revision: Burks, 1961. *Ent. News* 72: 253-257.

bakeri Burks. Iowa, Wyo., Colo.

Pseudometagea bakeri Burks, 1961. *Ent. News* 72: 256. ♀, ♂.

schwarzi (Ashmead). Que. and Ont., s. to Md. and D. C., w. to Wis., Iowa, Nebr. Host: *Lasius neoniger* Emery.

Metagea schwarzi Ashmead, 1892. *Ent. Soc. Wash.*, Proc. 2: 356. ♂, ♀.

Pseudometagea hillmeadia Girault, 1916. *Brooklyn Ent. Soc.*, Bul. 11: 113. ♀.

Biology: Ayre, 1962. *Canad. Jour. Zool.* 40: 157-164.

Family EUPELMIDAE

By B. D. BURKS

In many classifications the eupelmids are placed in the family Encyrtidae. However, all the eupelmids agree in possessing an array of characters that indicate that they and the encyrtids diverged separately from the evolutionary stem of the chalcidoidea at a remote time in the development of the superfamily. Eupelmids may be recognized by having the margin of the prepectus projecting over the margin of the mesepisternum, in having the forecoxae and midcoxae widely separated, and in having the midcoxae so formed that they can be rotated either anteriorly or posteriorly. The encyrtids do not have those characters.

Morphology: Reid, 1941. *Roy. Ent. Soc. London, Trans.* 91: 433-434.

SUBFAMILY TANAOSTIGMATINAE

This group is primarily Neotropical and Australian, with only a very few Nearctic species. All the species of this subfamily, except one, are known to be gall makers. The one exception is *Tanaostigmodes tychii* Ashmead, which was supposed to be parasitic on a seed weevil, *Tychius*, when it was described. This rearing has not been repeated, and the record may be incorrect.

Genus TANAOSTIGMODES Ashmead

Tanaostigmodes Ashmead, 1896. *Ent. Soc. Wash.*, Proc. 4: 9, 18.

Type-species: *Tanaostigmodes howardii* Ashmead. Orig. desig.

Two of the species of *Tanaostigmodes*, *albiclavus* Girault and *howardii* Ashmead, often have cynipid inquiline in their galls.

Revision: Crawford, 1911. *U. S. Natl. Mus.*, Proc. 40: 442.

albiclavus Girault. Ariz. Ecology: Produce large stem galls on *Acacia greggii*, *Mimosa biuncifera*.

Tanaostigmodes(!) albiclavus Girault, 1917. *Descr. Stellarum Nov.*, p. 4. ♀.

howardii Ashmead. Ariz., Calif. Ecology: Produce small, spherical bud galls on *Acacia greggii*, *Mimosa biuncifera*, *Prosopis* sp.

Tanaostigmodes howardii Ashmead, 1896. *Ent. Soc. Wash.*, Proc. 4: 19. ♀.

slossonae Crawford. Fla. Ecology: Produce seed galls on *Galactia striata*, *G. volubilis*.

Tanaostigmodes slossonae Crawford, 1911. *U. S. Natl. Mus.*, Proc. 40: 442. ♀, ♂.

tychii Ashmead. Calif. Host: *Tychius semisquamosus* Lec.

Tanaostigmodes tychii Ashmead, 1896. *Ent. Soc. Wash.*, Proc. 4: 19. ♀.

SUBFAMILY CALOSOTINAE

Taxonomy: Boucek, 1958. Mus. Natl. Pragae, Acta Ent. 32: 354-355. —Boucek, 1964. Ent. Soc. Canada, Mem. 34: 60.

Genus CALOSOTA Curtis

Calosota Curtis, 1836. Brit. Ent. 13: 596.

Type-species: *Calosota vernalis* Curtis. Orig. desig.

Calosoter Walker, 1837. Ent. Mag. 4: 358.

Type-species: *Calosoter vernalis* Walker. Desig. by Westwood, 1840.

Taxonomy: Bolivar y Pieltain, 1929. Eos 5: 123. —Hedqvist, 1963. Studia Forest. Suecica 11: 139. —Graham, 1969. Roy. Ent. Soc. Lond., Proc. (B) 38: 89-91 (Identity of type-species).

longiventris (Ashmead). Idaho, Calif.

Calosoter longiventris Ashmead, 1896. Ent. Soc. Wash., Proc. 4: 12. ♀, ♂.

metallica (Gahan). Idaho, Utah, Wash., Oreg., Calif. Ecology: Either a primary or secondary parasite, feeding on other insects that develop in grass stems. Host: *Mayetiola destructor* (Say), *Harmolita grandis* (Riley), *H. tritici* (Fitch) as primary parasites;

Ditropinotus aureoviridis Crawford, *Eurytoma parva* Phillips as secondary parasites.

Calosoter metallicus Gahan, 1922. U. S. Natl. Mus., Proc. 61 (24): 16. ♂, ♀.

Biology: Knowlton and Janes, 1933. Utah Agr. Expt. Sta. Bul. 243: 12. —Gahan, 1934 (1933).

U. S. Dept. Agr., Misc. Pub. 174: 58-60. —Chamberlain, 1941. U. S. Dept. Agr., Tech. Bul.

784: 38-40. —Nikolskaja, 1952. Oprel. Fauna USSR 44: 483. —Phillips and Poos, 1953. U.

S. Dept. Agr., Farmers Bul. 1323, p. 5. —Nikolskaja, 1963. Keys Fauna USSR 44: 497 (Eng. transl.).

Genus EUSANDALUM Ratzeburg

Eusandalum Ratzeburg, 1852. Ichn. d. Forstins., v. 3, p. 199.

Type-species: *Eusandalum abbreviatum* Ratzeburg. Desig. by Ashmead, 1904.

Polymoria Foerster, 1856. Hym. Stud., v. 2, p. 31. No included species.

Type-species: *Polymoria coronata* Thomson. First included species, Thomson, 1875.

Ratzburgia Foerster, 1856. Hym. Stud., v. 2, pp. 31, 145.

Type-species: *Eusandalum abbreviatum* Ratzeburg. Desig. by Gahan and Fagan, 1923.

Meseusandalum Girault, 1915. Queensland Mus., Mem. 4: 34.

Type-species: *Meseusandalum cyaneiventris* Girault. Orig. desig.

Polymorioides Masi, 1941. Mus. Civ. Stor. Nat. Genova, Ann. 61: 154.

Type-species: *Polymorioides tessellatus* Masi. Orig. desig.

Revision: Girault, 1917. Jour. Ent. and Zool. 9: 8-10.

Taxonomy: Risbec, 1952. Inst. Sci. Madagascar, Mem. (E) 2: 98 (generic synonymy).

—Boucek, 1967. Acta Ent. Bohemoslov. 64: 261-266 (generic synonymy). —Boucek, 1970.

Soc. Ent. Ital., Mem. 49: 78-80 (corrected synonymy).

acmaeoderae Girault. Calif. Host: *Acmaeodera* sp. in *Ceanothus integrerrimus*.

Eusandalum acmaeoderae Girault, 1917 (March). Jour. Ent. and Zool. 9: 9.

Eusandalum acmaeoderae(!) Rohwer, 1917 (June). U. S. Natl. Mus., Proc. 53: 171. ♀.

alpinum Girault. Calif.

Eusandalum alpinum Girault, 1917. Jour. Ent. and Zool. 9: 8. ♀.

amphicerovorum (Ashmead). N. J., Kans. Host: *Amphicerus bicaudatus* (Say).

Ratzburgia(!) *amphicerovora* Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3, App. p. V. "♂" = ♀.

arizona Girault. Ariz.

Eusandalum arizona Girault, 1917. Jour. Ent. and Zool. 9: 9. ♀.

californicum Girault. Calif.

Eusandalum californicum Girault, 1917. Jour. Ent. and Zool. 9: 8. ♀.

coquillettii (Ashmead). Calif. Host: *Oeme gracilis* Lec.

Ratzburgia coquillettii Ashmead, 1896. Ent. Soc. Wash., Proc. 4: 11. ♀.

cyaneum (Ashmead). Ariz., Calif.

Ratzburgia cyanea Ashmead, 1896. Ent. Soc. Wash., Proc. 4: 11. ♀.

georgia Girault. D. C., Ga.

Eusandalum georgia Girault, 1917. Jour. Ent. and Zool. 9: 8. ♀.

hubbardii (Ashmead). N. J., D. C., Fla., Mont., Wash. Host: *Leptostylus biustus* Lec.

Ratzburgia hubbardii Ashmead, 1896. Ent. Soc. Wash., Proc. 4: 12. ♀.

Biology: De Leon, 1934. Canad. Ent. 66: 60.

hyalinipennis (Ashmead). Tex., Calif.

Ratzburgia hyalinipennis Ashmead, 1896. Ent. Soc. Wash., Proc. 4: 12. ♀.

obscurum Girault. Wash.

Eusandalum obscurum Girault, 1917. Jour. Ent. and Zool. 9: 8. ♀.

SUBFAMILY EUPELMINAE

Taxonomy: Ashmead, 1896. Ent. Soc. Wash., Proc. 4: 4-20. —Ruschka, 1921 (1920). Zool.-Bot.

Gesell. Wien., Verhandl. 70: 234-315 (European fauna). —Masi, 1943. Mus. Civ. Stor. Nat.,

Ann. 61: 153 (key to genera). —Ferriere, 1938. Soc. Ent. France, Ann. 107: 25-26.

—Ferriere, 1954. Schweiz. Ent. Gesell., Mitt. 27: 1-21 (brachypterous forms). —Hedqvist,

1963. Studia Forest. Suecica 11: 131-132 (bark-beetle parasites).

Genus METAPELMA Westwood

Metapelma Westwood, 1835. Zool. Soc. London, Proc. 3: 69.

Type-species: *Metapelma spectabilis* Westwood. Monotypic.

Halidea Foerster, 1856. Hym. Stud., v. 2, p. 31. No species. —Foerster, 1860. Naturh. Ver.

Rheinlande, Verhandl. 17: 113. Two species.

Type-species: *Halidea insignis* Foerster. Desig. by Gahan and Fagan, 1923.

Halidayella Dalla Torre, 1897. Wien. Ent. Ztg. 16: 85. N. name for *Halidea*, unnecessarily proposed.

Revision: Ferriere, 1938. Soc. Ent. France, Ann. 107: 25-43.

schwarzi (Ashmead). Conn., N. Y., N. J., s. to Fla., w. to Mo., Ark., Ariz., Oreg., Calif. Host:

Apteromechus ferratus (Say), *Magdalis arnicollis* (Say).

Halidea Schwarzi Ashmead, 1890. Ent. Soc. Wash., Proc. 1: 265. ♀.

spectabile Westwood. Conn., N. Y., N. J., s. to Fla., w. to Kans., Tex. Host: *Agrilus angelicus*

Horn, *Chrysobothris femorata* (Olivier), *Cylas elegantulus* (Summers), *Magdalis olynx*

(Hbst.), *M. pandura* (Say).

Metapelma spectabilis Westwood, 1835. Zool. Soc. London, Proc. 3: 69. ♀.

Biology: Blackman and Stage, 1924. N. Y. State Col. Forestry, Syracuse Univ., Tech. Pub. 17:

25. —Rhoads, 1924. In Blackman and Stage, N. Y. State Col. Forestry, Syracuse Univ.,

Tech. Pub. 17: 185. —Beal and Massey, 1945. Duke Univ. School Forest., Bul. 10: 69.

Genus EUPELMUS Dalman

Eupelmus Dalman, 1820. Svenska Vetensk. Akad., Handl. 41: 136, 180.

Type-species: *Eupelmus memnonius* Dalman. Desig. by Westwood, 1840.

Cerambycobius Ashmead, 1896. Ent. Soc. Wash., Proc. 4: 7, 10, 17.

Type-species: *Eupelmus cleri* Ashmead. Orig. desig.

Revision: Crawford, 1908. Ent. Soc. Wash., Proc. 9: 157-158 (*Cerambycobius*).

allynii (French). P. E. I., Ont., Man., common throughout U. S. Host: *Languria mozdari* Latr.;

Coleophora malivorella Riley, *Epiblema otiosana* (Clem.), *Tischeria malifoliella* Clem.;

Lasiotropa vernoniae Beut., *Mayetiola destructor* (Say), *Meromyza americana* Fitch, *M.*

saltatrix (L.); *Antistropheus pisum* (Walsh) galls, *Bracon cephi* (Gahan), *Brachophagus*

spp., *Cephus cinctus* Nort., *C. pygmaeus* (L.), *Ditropinotus aureoviridis* Cwfd.,

Eupteronotus subapterus (Riley), *Eurytoma parva* Phillips, *Habrocytus languriae*

Ashm., *Harnolita albomaculata* (Ashm.), *H. elymi* (French), *H. elymicola* P. and E., *H.*

elymivora P. and E., *H. elymophaga* P. and E., *H. grandis* (Riley), *H. holci* Phillips, *H.*

hordei (Harris), *H. linearis* (Walk.), *H. maculata* (How.), *H. tritici* (Fitch), *H. vaginicola* (Doane), *Homoporus chalcidiphagus* (W. and R.), *H. destructor* (Say), *H. febriculosus* (Grlt.), *Pediobius metallicus* (Nees), *Platygaster hiemalis* Pack., *P. zosine* Walk., *Tetrastichus charoba* (Walk.), *Trachelus tabidus* (F.).

Isosoma allynii French, 1881. *Prairie Farmer* 52: 418.

Taxonomy: Parker, 1924. Soc. Ent. France, Ann. 93: 266, 286. —Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 41-46.

Biology: Packard, 1916. Jour. Agr. Res. 6: 370-373. —Phillips and Poos, 1921. Jour. Agr. Res. 21: 405-426. —Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 41-46. —Hill, Pinckney and Udine, 1939. U. S. Dept. Agr., Tech. Bul. 689: 3-15. —Chamberlain, 1941. U. S. Dept. Agr., Tech. Bul. 784: 29, 39. —Wester, 1956. Ent. Soc. Wash., Proc. 58: 285-286. —Neunzig and Gyrisco, 1959. Jour. Econ. Ent. 52: 900-901. —Allen, 1962. U. S. Dept. Agr., Tech. Bul. 1265: 98-99. —Brandhorst, 1964. Ent. Soc. Amer., Ann. 57: 75-76. —Batiste, 1967. *Hilgardia* 38: 463. —Morrill and Kieckhefer, 1971. Jour. Econ. Ent. 64: 1129-1131.

Morphology: Hill and Pinckney, 1940. U. S. Dept. Agr., Tech. Bul. 715: 2-3, 7, 11-13.

amicus Girault. Mass., N. Y., s. to Ga., w. to Ark., Tex., N. Mex. Host: *Acanthoscelides alboscuteclatus* (Horn), *A. floridae* (Horn), *Anthonomus grandis* Boh., *Bruchus brachialis* Fahr., *B. pisorum* (L.), *Chalcodermus aeneus* Boh., *Desmoris fulvus* Lec., *Mimosestes amicus* (Horn), *Scolytus multistriatus* (Marsh.); *Acrobasis caryae* Grote, *A. caryovorella* Rag., *Coleophora malivorella* Riley, *Dioryctria disclusa* Hein., *Grapholitha molesta* (Busck), *Rhyacionia frustrana* (Comst.), *Ulophora grotei* Rag.; *Macrocentrus* sp.

Eupelmus cyaniceps var. *amicus* Girault, 1916. *Canad. Ent.* 48: 244. ♀.

Biology: Fenton and Dunnam, 1929. U. S. Dept. Agr., Tech. Bul. 112: 66. —Beacher, 1947. Ent. Soc. Amer., Ann. 40: 532-544. —Brunson, 1948. Jour. Econ. Ent. 41: 119. —Nickels *et al.*, 1950. U. S. Dept. Agr., Tech. Bul. 1011: 3, 20. —Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 87. —Allen, 1962. U. S. Dept. Agr., Tech. Bul. 1265: 97-98.

ashmeadi Melander and Brues. Mass.

Eupelmus ashmeadi Melander and Brues, 1903. *Biol. Bul.* 5: 21. ♀.

auratus Ashmead. Fla., La. Host: *Disholcaspis quercusvirens* (Ashm.), *Callirhytis quercusrugosa* (Ashm.) galls.

Eupelmus auratus Ashmead, 1886. *Amer. Ent. Soc., Trans.* 12: 128. ♀.

bardus Girault. Calif.

Eupelmus bardus Girault, 1917. *Descr. Hym. Chalcidoid. Variorum cum Observ.* V, p. 3. ♀.

biguttus Girault. Md.

Eupelmus 2-guttus Girault, 1917. *Ent. News* 28: 256 ♀. (*biguttus* on p. 494).

Eupelmus duoguttus Peck, 1963. *Canad. Ent., Sup.* 30, p. 485. Emend.

brevicauda (Crawford). Tex., Ariz. Host: *Acanthoscelides submuticus* (Sharp).

Cerambycobius brevicauda Crawford, 1908 (1907). *Ent. Soc., Wash., Proc.* 9: 158. ♀.

bruchivorus (Crawford). Va., N. C., Tex. Host: *Acanthoscelides horni* (Pic), *Mimosestes sallaei* (Sharp).

Cerambycobius bruchivorus Crawford, 1908 (1907). *Ent. Soc. Wash., Proc.* 9: 158. ♀.

charitopoides Girault. W. Va., La.

Eupelmus charitopoides Girault, 1916. *Canad. Ent.* 48: 244. ♀.

cleri Ashmead. Va., N. C. Host: *Thanasimus trifasciatus* (Say), undet. clerid in white pine.

Eupelmus cleri Ashmead, 1894. *Amer. Ent. Soc., Trans.* 21: 339. ♀, ♂.

coccidis Girault. Tex. Host: *Coccus hesperidum* L.

Eupelmus coccidis Girault, 1916. *Ent. News* 27: 223. ♀.

conigerae Ashmead. N. J., Fla. Host: *Callirhytis quercusventricosa* (Bass.) gall.

Eupelmus conigerae Ashmead, 1885. *Amer. Ent. Soc., Trans.* 12: Proc. p. xv. ♀.

cushmani (Crawford). La., Tex.; Hawaii, Cent. and So. Amer. Host: *Acanthoscelides ochraceicolor* (Pic), *Anthonomus grandis* Boh., *Araecerus fasciculatus* (Deg.), *Cylindrocopturus adpersus* (Lec.), *C. longulus* (Lec.), *Lixus scrobicollis* Boh., *Mimosestes sallaei* (Sharp), *Trichobaris texana* Lec.

Cerambycobius cushmani Crawford 1908 (1907). *Ent. Soc. Wash., Proc.* 9: 158. ♀.

Cerambycobius townsendi Crawford, 1912. U. S. Natl. Mus., Proc. 43: 166. ♀, ♂.

Taxonomy: Gahan, 1951. Canad. Ent. 83: 172.

Biology: Pierce, 1910. Jour. Econ. Ent. 3: 455. —Pierce, Cushman and Hood, 1912. U. S. Dept. Agr., Bur. Ent. Bul. 100: 51-62. —Pierce and Cushman, 1915. Ent. Soc. Wash., Proc. 17: 165. —Hambleton, 1937. Arch. Inst. Biol. Sao Paulo 8: 96-97. —Pemberton, 1954. Hawaii. Ent. Soc., Proc. 15: 287. —Hinckley, 1959. Hawaii. Ent. Soc., Proc. 17: 267. —Hinckley, 1961. Ecology 42: 528-529.

Morphology: Snodgrass, 1910. U. S. Natl. Mus., Proc. 39: 65.

cyaneiceps Ashmead. Ont., s. to Fla., w. to Calif. Host: *Acanthoscelides horni* (Pic), *A. obtectus* (Say), *A. ochraceicolor* (Pic), *A. submuticus* (Sharp), *Amblycerus robiniae* (F.), *Anthonomus albopilosus* Dietz, *A. grandis* Boh., *Apion rostrum* Say, *Clindrocopturus adspersus* Lec., *C. longulus* Lec., *Gibbobruchus minus* (Say), *Lixus musculus* Say, *L. scrobicollis* Boh., *Mimosestes sallaei* (Sharp), *Smicraulax tuberculatus* Pierce, *Trichobaris compacta* Casey, *T. texana* Lec., *Tychius sordidus* Lec.; *Bucculatrix fuscicola* Braun, *Epiblema strenuana* (Walk.), *Grapholitha molesta* (Busck), *Heliodines ionis* Clarke, *Laspeyresia pomonella* (L.), *Rhyacionia buoliana* (Schiff.), *R. frustrana* (Comst.); *Bracon* sp., *Glypta* sp., *Hyposoter fugitivus* (Say).
Eupelmus cyaneiceps Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 129. ♀.

Taxonomy: Finlayson, 1962. Canad. Ent. 94: 277-279 (immature stages).

Biology: Pierce, 1908. U. S. Dept. Agr., Bur. Ent. Bul. 73: 29-48. —Pierce, Cushman and Hood, 1912. U. S. Dept. Agr., Bur. Ent. Bul. 100: 31-68. —Pierce and Cushman, 1915. Ent. Soc., Wash., Proc. 17: 165-167. —Tucker, 1922. Kans. Acad. Sci., Trans. 30: 144. —Breland, 1948. Ent. News 59: 234. —Wester, 1956. Ent. Soc. Wash., Proc. 58: 286. —Allen, 1962. U. S. Dept. Agr., Tech. Bul. 1265: 96-97. —Brandhorst, 1962. Ent. Soc. Amer., Ann. 55: 477. —Harman and Kulman, 1962. Jour. Econ. Ent. 55: 1007. —Kulman, 1965. Jour. Econ. Ent. 58: 68.

Morphology: Parker, 1924. Soc. Ent. France, Ann. 93: 266.

cynipidis Ashmead. Fla., La. Host: *Callirhytis quercusbatatoides* (Ashm.) gall.
Eupelmus cynipidis Ashmead, 1882. Canad. Ent. 14: 36. ♀.

dryophantae Ashmead. Fla. Host: *Dryocosmus quercuslaurifoliae* (Ashm.) gall.

Eupelmus dryophantae Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 130. ♀, ♂.

ficigeriae (Ashmead). Fla. Host: *Andricus femoratus* Ashm., *Disholcaspis quercusvirens* (Ashm.).

Megastigma (!) *ficigeriae* Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 185. ♂.

flavovariegatus Ashmead. Kans. Ecology: Emerged from an undet. cynipid gall.

Eupelmus flavovariegatus Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App. p. IV. ♀, ♂.

floridanus Howard. Fla.

Eupelmus Floridanus Howard, 1880. Canad. Ent. 12: 209. ♂.

fonteia Walker. Fla.

Eupelmus fonteia Walker, 1847. Ann. and Mag. Nat. Hist. (1) 20: 19. ♀.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32: 149 (lectotype designated).

inyoensis Girault. Utah, Calif. Host: *Saissetia oleae* (Bern.); *Asphondylia adenostoma* Felt; *Aphyus lounsburyi* How., *Pimplopterus* sp.

Eupelmus inyoensis Girault, 1916. Ent. News 27: 223. ♀, ♂.

Taxonomy: Smith and Compere, 1928. Calif. Univ. Pubs., Ent. 4: 295-297.

Biology: Compere, 1925. Calif. Univ. Pubs., Ent. 3: 296. —Flanders, 1940. Ent. Soc. Amer., Ann. 33: 252. —Tilden, 1951. Microentomology 16: 164, 173. —Flanders, 1953 (1952). Ent. Soc. Amer., Ann. 45: 544, 547. —Doutt, 1961. Ent. Soc. Amer., Ann. 54: 51.

juglandis Ashmead. N. Y., Va., N. C., Kans. Host: *Scolytus rugulosus* (Ratz.).

Eupelmus juglandis Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 340. ♀.

lamachus Walker. Fla.

Eupelmus Lamachus Walker, 1847. Ann. and Mag. Nat. Hist. (1) 20: 20. ♀.

- Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32: 150.
- limneriae** Howard. Conn., s. to Fla. Host: *Grapholitha molesta* (Busck), *Homaledra sabalella* (Chamb.); *Campoplex validus* (Cress.), *Ceratostmiera* sp., *Macrocentrus ancylicivorus* Roh.
- Eupelmus limneriae* Howard, 1897. U. S. Dept. Agr., Div. Ent., Tech. Ser. 5: 39, 56. ♀, ♂.
- Biology: Allen, 1962. U. S. Dept. Agr., Tech. Bul. 1265: 93-95.
- macrocarpae** Ashmead. Ill., Kans. Host: *Acraspis erinacei* (Beut.), *A. pezomachoides* (O. S.), *Disholcaspis quercusmamma* (Walsh) galls.
- Eupelmus macrocarpae* Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App. p. IV. ♀.
- Biology: Balduf, 1926. Canad. Ent. 58: 160-163.
- marylandicus** Girault. Md.
- Eupelmus marylandicus* Girault, 1916. Canad. Ent. 48: 242. ♀.
- momphae** Gahan. Conn., Ga., Ala., Tex. Host: *Mompha brevivittella* (Clem.), *Phalonia cephalanthana* Hein.
- Eupelmus momphae* Gahan, 1910. Canad. Ent. 42: 205. ♀.
- neococcidis** Peck. Md., La., Tex., Ariz. Host: *Stagmomantis carolina* (Johan.), *S. limbata* (Hahn), *Tenodera angustipennis* Sauss.
- Eupelmus brevicanda* Gahan, 1910. Canad. Ent. 42: 205. ♀. Preocc. by Crawford, 1908.
- Eupelmus coccidis* Girault, 1917. Descr. Stellarum Nov., p. 6. N. name. Preocc. by Girault, 1916.
- Eupelmus neococcidis* Peck, 1951. U. S. Dept. Agr., Agr. Monog. 2: 510. N. name.
- Biology: Breland, 1941. Ent. Soc. Amer., Ann. 34: 108. —Gurney, 1959. Ent. Soc. Wash., Proc. 61: 23.
- neomexicanus** Girault. N. Mex.
- Eupelmus neomexicanus* Girault, 1906. Ent. Soc. Amer., Ann. 9: 307. ♀.
- pini** Taylor. N. H., Mass., Conn., N. Y. Host: *Pissodes strobi* (Peck).
- Eupelmus pini* Taylor, 1927. Brooklyn Ent. Soc., Bul. 22: 205. ♀.
- Biology: Taylor, 1929. Ent. Amer. 10: 12-16, 66.
- popa** Girault. Va., s. to Fla., w. to Mo., Okla., Tex.; Hawaii, West Indies, Cent. and So. Amer., Orient, Africa, Australia. Host: *Contarinia sorghicola* (Coq.).
- Eupelmus popa* Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. V, p. 4. ♀.
- Taxonomy: Gahan, 1922. U. S. Natl. Mus., Proc. 61 (24): 14.
- Biology: Woodruff, 1929. Jour. Econ. Ent. 22: 160-167. —Walter, 1941. U. S. Dept. Agr., Tech. Bul. 778: 18-20. —Passlow, 1958. Queensland Jour. Agr. Sci. 15: 35. —Harris, 1961. Bul. Ent. Res. 52: 134. —Piore and Viggiani, 1965. Lab. Ent. Agr., Bol. 23: 23.
- quercus** Ashmead. Fla. Host: *Disholcaspis quercusvirens* (Ashm.) gall.
- Eupelmus quercus* Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 130. ♀.
- rosae** Ashmead. Fla., La., Kans. Host: *Diptolepis* spp. galls on rose.
- Eupelmus rosae* Ashmead, 1882. Canad. Ent. 14: 36. ♀.
- rubicola** (Ashmead). Fla. Known only from a single male reared from an undet. dipterous larva from the stem of *Rubus*; originally described in the Scelionidae, but the type specimen is *Eupelmus*.
- Xenomermis rubicola* Ashmead, 1887. Ent. Amer. 3: 100. ♂.
- Taxonomy: Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 185 (sp. incorrectly trans. from Scelionidae to Pteromalidae).
- speciosus** Girault. D. C., Tex. Host: *Andricus quercuslaniger* (Ashm.) gall.
- Eupelmus speciosus* Girault, 1916. Canad. Ent. 48: 243. ♀.
- sphaericephalus** Ashmead. Fla.
- Eupelmus sphaericephalus* Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 129. ♀.
- spongipartus** Foerster. N. B., Conn., Ont., N. Y., Pa., Md., Ohio, Wis.; Europe. Introduced from Europe. Host: *Grapholitha molesta* (Busck); *Apanteles melanoscelus* (Ratz.), *Diprion*

similis (Htg.), *Glypta rufiscutellaris* Cress., *Macrocentrus ancylicivorus* Roh., *Meteorus versicolor* (Wesm.).

Eupelmus spongipartus Foerster, 1860. Naturh. Ver. Rheinlande, Verh. 17: 123. ♀, ♂.

Taxonomy: Finlayson, 1962. Canad. Ent. 94: 277-279 (immature stages).

Biology: Muesebeck and Dohanian, 1927. U. S. Dept. Agr., Bul. 1487: 12, 21-23. — Proper, 1934. Jour. Agr. Res. 48: 366. — Brunson, 1948. Jour. Econ. Ent. 41: 119. — Brunson and Allen, 1948. Jour. Econ. Ent. 41: 447. — Reeks and Smith, 1956. Canad. Ent. 88: 572. — Allen, 1962. U. S. Dept. Agr., Tech. Bul. 1265: 95-96.

utahensis Girault. Wyo., Utah. Host: *Metatephritis fenestrata* Foote.

Eupelmus cyaniceps var. *utahensis* Girault, 1916. Canad. Ent. 48: 244. ♀.

Biology: Fronk *et al.*, 1964. Ent. Soc. Amer., Ann. 57: 575.

Genus ARACHNOPHAGA Ashmead

Arachnophaga Ashmead, 1896. Ent. Soc. Wash., Proc. 4: 9, 10, 18.

Type-species: *Eupelmus piceus* Riley. Orig. desig.

Brasemopsis Brethes, 1913. Buenos Aires Mus. Nac. de Hist. Nat., An. 24: 106.

Type-species: *Brasemopsis halsidotae* Brethes. Monotypic.

The name *Arachnophaga* is somewhat unfortunate for this genus. Half the North American species are not parasitic on spiders, but develop at the expense of Lepidoptera or their hymenopterous primary parasites. One species also parasitizes the primary parasites of *Chrysopa*.

Revision: Gahan, 1943. U. S. Natl. Mus., Proc. 94: 339-363.

Taxonomy: De Santis, 1960. Rev. Fac. Agron. La Plata 36: 110 (generic synonymy).

abstrusa Gahan. Tex. Host: *Cyrtarachne* sp. egg sacs.

Arachnophaga abstrusa Gahan, 1943. U. S. Natl. Mus., Proc. 94: 362. ♀, ♂.

aldrichi Gahan. Mass., Pa., N. J., Md., Tenn., Miss., Tex. Host: Undet. spider egg sacs.

Arachnophaga aldrichi Gahan, 1943. U. S. Natl. Mus., Proc. 94: 360. ♀.

aureicorpus (Girault). S. C., Tex.

Anastatus aureicorpus Girault, 1916. Ent. Soc. Amer., Ann. 9: 299. ♀.

costalis Gahan. N. J., Del., Md. Host: *Eurukuttarus confederata* (Grote), *Grapholitha molesta* (Busck), *Zamopsycha commentella* Dyar; *Macrocentrus* sp.

Arachnophaga costalis Gahan, 1943. U. S. Natl. Mus., Proc. 94: 346. ♀.

Biology: Allen, 1962. U. S. Dept. Agr., Tech. Bul. 1265: 100.

ferruginea Gahan. Va., Fla. Host: *Epeira pegnia* Walck., *Gasteracanthus cancriformis* (L.) egg sacs.

Arachnophaga ferruginea Gahan, 1943. U. S. Natl. Mus., Proc. 94: 361. ♀.

frontalis Gahan. Conn., N. J., Va., S. C., Tex., Utah, Ariz. Host: *Anarsia lineatella* Zell.,

Grapholitha molesta (Busck), *Gypsonoma* sp., *Thyridopteryx meadi* Edw.; *Macrocentrus ancylicivorus* Roh., *Neodiprion pinusrigidae* (Nort.).

Arachnophaga frontalis Gahan, 1943. U. S. Natl. Mus., Proc. 94: 357. ♀, ♂.

Biology: Allen, 1962. U. S. Dept. Agr., Tech. Bul. 1265: 99-100.

longiceps (Brues). Tex. Host: *Papilio* sp.

Anastatus longiceps Brues, 1907. Wis. Natl. Hist. Soc., Bul. 5: 108. ♀.

Biology: Allen, 1962. U. S. Dept. Agr., Tech. Bul. 1265: 100.

nocua Gahan. Tex. Host: *Apanteles* sp. Secondary parasite of *Estigmene acraea* (Drury).

Arachnophaga nocua Gahan, 1943. U. S. Natl. Mus., Proc. 94: 348. ♀, ♂.

picea (Riley). N. J., Ill., Ariz., Calif. Host: *Argiope argentata* (F.), *Diguetia canities* (McCook), *Epeira gibberosa* (Hentz), *Mastophora cornigera* (Hentz), *Phidippus opifex* McCook, *Theridion globosa* (Hentz) egg sacs. Secondary parasite, primary parasite unknown, of *Chrysopa californica* Coq.

Eupelmus piceus Riley, 1892. In Howard, Ent. Soc. Wash., Proc. 2: 296. ♀, ♂.

Taxonomy: Clancy, 1946. Calif. Univ. Pubs., Ent. 7: 459-460.

Biology: Weese, 1925. Ill. Biol. Monog. 9 (4): 19, 46-52. — Weese, 1930. Okla. Acad. Sci., Proc. 10: 18-19. — Clancy, 1946. Calif. Univ. Pubs., Ent. 7: 459-460. — Cazier and Mortenson, 1962. So. Calif. Acad. Sci., Bul. 61: 74.

scutata Gahan. Ill. Host: Undet. spider egg sacs.

Arachnophaga scutata Gahan, 1943. U. S. Natl. Mus., Proc. 94: 353. ♀, ♂.

Genus EUPELMELLA Masi

Macroneura Walker, 1837. Ent. Mag. 4: 353. Preocc. by *Macronevra* Macquart, 1834.

Type-species: *Macroneura maculipes* Walker. Monotypic.

Macronevra Blanchard, 1840. Hist. Nat. Anim. Articles, v. 3, p. 273. Emend.

Eupelmella Masi, 1919. Mus. Civ. Stor. Nat. Genova, Ann. 48: 306.

Type-species: *Eupelmus degeeri* Dalman. Orig. desig.

Taxonomy: Ferriere, 1954. Schweiz. Ent. Gesell., Mitt. 27: 4. — Hedqvist, 1963. Studia Forest. Suecica 11, p. 132.

dryorhizoxeni (Ashmead). Mass., N. Y., Pa., Md., D. C., Va., Fla., Ala., Ill., Mo., Nebr., Kans.

Host: *Rhabdophaga salicistritichoides* (Walsh); *Belonocnema treatae* Mayr, *Diplolepis dichlocera* (Harris), *D. ignota* (O. S.) galls. This species, having been reliably recorded as reared from a variety of galls, probably does not parasitize the gall makers, but more likely attacks some inquilines or parasites of the gall makers.

Eupelmus dryorhizoxeni Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 129. ♀, ♂.

Eupelmus rhizophelus Brues, 1903. Biol. Bul. 4: 186, 189.

Taxonomy: Burks, 1967. In Krombein and Burks, U. S. Dept. Agr., Agr. Monog. 2, Sup. 2, p. 246 (synonymy).

Biology: Melander and Brues, 1903. Biol. Bul. 5: 21.

epicaste (Walker). Fla., Kans., Tex. Host: *Meteorus* sp., *M. laphygmae* Vier.

Eupelmus Epicaste Walker, 1847. Ann. and Mag. Nat. Hist. (1) 20: 20. ♀.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32: 149 (synonymy).

Eupelminus meteori Gahan, 1913. U. S. Natl. Mus., Proc. 46: 437. ♀.

Biology: Luginbill, 1928. U. S. Dept. Agr., Tech. Bul. 34: 74-75. — Vickery, 1929. U. S. Dept. Agr., Tech. Bul. 138: 21, 32, 55, 58.

melanderi (Brues). Wash. Host: *Diplolepis* sp. galls on rose.

Eupelmus melanderi Brues, 1907. Wis. Nat. Hist. Soc., Bul. 5: 54. ♀.

vesicularis (Retzius). Que., N. B. and Maine, s. to N. C., w. to B. C., s. to Calif.; Europe, N.

Africa, Middle East, Asia Minor. Ecology: This is one of the most polyphagous chalcidoids, having for hosts Orthoptera, Hemiptera, Coleoptera, Lepidoptera, Diptera, and Hymenoptera. The list of names of its hosts reported in the world literature is extremely lengthy, and the list of these hosts that are reliably known for only North America is tiresomely long. *E. vesicularis* is usually a primary parasite, but it may also be secondary. Introduced probably from Europe in straw, and first reported in Pennsylvania in 1915. Host: *Anthonomus signatus* Say, *Bruchus brachialis* Fahr., *Ceutorhynchus assimilis* (Payk.), *Cylindrocopturus furnissi* Buch., *Gyrinus* sp., *Hypera postica* (Gyll.), *H. rumicis* (L.), *Tachypterellus consors cerasi* List; *Argyresthia thuella* (Pack.), *Archippus packardianus* (Fern.), *Coleophora laricella* (Hbn.), *C. pruniella* Clem., *C. salmiani* Hein., *Eurukuttarus confederata* (Grote), *Grapholitha molesta* (Busck), *Malacosoma dissτρια* Hbn., *M. pluviale* (Dyar), *Porthetria dispar* (L.), *Rhyacionia buoliana* (Schiff.), *Stilpnotia salicis* (L.); *Hylemya* sp., *Mayetiola destructor* (Say); *Agathis calcarata* (Cress.), *Apanteles melanoscelus* (Ratz.), *A. laricellae* Mason, *Aulacidea podagrae* (Bass.), *A. tumida* (Bass.) galls, *Bathyplectes curculionis* (Thomson), *Bracon cephi* (Gahan), *Bruchophagus* sp., *Cephus cinctus* Nort., *C. pygmaeus* (L.), *Dahlbominus fuscipennis* (Zett.), *Diplolepis* sp. galls, *Ditropinotus aureoviridis* Cwfd., *Eupelmus allynii* (French), *Eurytoma parva* Phillips, *Harmolita albomaculata* (Ashm.), *H. elyni* (French), *H. festucae* P. and E., *H. grandis* (Riley), *H. hordei* (Harr.), *H. linearis* (Walker), *H. longula* (Dalm.), *H. maculata* (How.), *H. tritici*

- (Fitch), *H. vaginicola* (Doane), *Janus integer* (Nort.), *Neodiprion abietis* (Harr.), *N. pratti banksianae* Roh., *N. leconti* (Fitch), *N. sertifer* (Geof.), *Platygaster zosine* Walker. *Ichneumon vesicularis* Retzius, 1783. *Genera et Species Insectorum*, p. 70.
Eupelmus degeeri Dalman, 1820. Svenska Vetensk. Akad., Handl. 41: 379. ♀.
Eupelmus gerri Nees, 1834. Hym. Ichn. Aff. Monog., v. 2, p. 76. Emend.
Theocolax canadensis Provancher, 1883. Nat. Canad. 14: 34. ♀.
Eupelmus albitarsis Costa, 1883. Accad. Sci. Fis. e Mat. Napoli, Atti 2: 101. ♀.
Euryscapus saltator Lindeman, 1887. Soc. Imp. Nat. Moscou, Bul. (2) 1: 190. ♀.
Eupelminus coleopterophagus Girault, 1916. Ent. Soc. Amer., Ann. 9: 306. ♀.
- Taxonomy: Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 52-58. — Hill and Pinckney, 1940. U. S. Dept. Agr., Tech. Bul. 715: 6-7, 11-13. — Finlayson, 1960. Canad. Ent. 92: 37-44 (immature stages). — Hedqvist, 1963. Studia Forest. Suecica 11, p. 133. — Finlayson, 1963. Canad. Ent. 95: 499 (immature stages). — Burks, 1964 (1963). Canad. Ent. 95: 1262.

- Biology: McConnell, 1918. Jour. Econ. Ent. 11: 168. — Muesebeck and Dohanian, 1927. U. S. Dept. Agr., Bul. 1487: 12, 23-24. — Phillips and Poos, 1927. Jour. Agr. Res. 34: 473-482.
 — Doner, 1936. Ent. Soc. Amer., Ann. 29: 226-236. — Morris, 1938. Parasitology 30: 20-32.
 — Hill, Pinckney and Udine, 1939. U. S. Dept. Agr., Tech. Bul. 689: 4-14. — Chamberlain, 1941. U. S. Dept. Agr., Tech. Bul. 784: 25, 29, 38-39. — Nelson, 1953. Canad. Ent. 85: 249.
 — Neunzig and Gyrisco, 1959. Jour. Econ. Ent. 52: 901. — Rivosecchi, 1960. Parassitologia 2: 289. — Chararas, 1962. Encyclopedie Ent., v. 38, p. 459. — Gijswijt, 1962. Ent. Ber. 22: 250.
 — Allen, 1962. U. S. Dept. Agr., Tech. Bul. 1265: 100-101. — Angalet and Andres, 1965. Jour. Econ. Ent. 58: 1167. — Balduf, 1966. Ent. Soc. Amer., Ann. 59: 1048. — Williams, 1969. Ent. Monthly Mag. 105: 124.

Genus MEROSTENUS Walker

Merostenus Walker, 1837. Ent. Mag. 4: 354.

Type-species: *Merostenus phedyma* Walker. Monotypic.

Urocryptus Westwood, 1840. Introd. Mod. Class. Ins., Synopsis p. 72. Preocc. by Temminck, 1838.

Type-species: *Eupelmus excavatus* Dalman. Orig. desig.

Eupelminus Dalla Torre, 1897. Wien. Ent. Ztg. 16: 85. N. name for *Urocryptus*.

excavatus Dalman. Utah?; Europe. Introduced, but not known to be established. Host: *Hypera postica* (Gyll.).

Eupelmus excavatus Dalman, 1820. Svenska Vetensk. Akad., Handl. 41: 382. ♀.

Merostenus phedyma Walker, 1837. Ent. Mag. 4: 355. ♂.

- Biology: Chamberlin, 1924. U. S. Dept. Agr., Cir. 301: 2-4. — Essig and Michelbacher, 1933. Calif. Agr. Expt. Sta., Bul. 567: 61, 69.

Genus ANASTATUS Motschulsky

Anastatus Motschulsky, 1860 (1859). Etudes Ent. 8: 116.

Type-species: *Anastatus mantoidae* Motschulsky. Monotypic.

Antigaster Walsh and Riley, 1869. Amer. Ent. 1: 156.

Type-species: *Antigaster mirabilis* Walsh and Riley. Monotypic.

Solindenia Cameron, 1883. Roy. Ent. Soc. London, Trans. 1883: 189.

Type-species: *Solindenia picticornis* Cameron. Monotypic.

Paraguaya Girault, 1911. Zool. Jahrb., Abt. f. System. 31: 385.

Type-species: *Paraguaya pulchripennis* Girault. Monotypic.

Ooderelloides Girault, 1913. Roy. Soc. So. Austral., Trans. 37: 6, 9, 10.

Type-species: *Ooderelloides nigripurpurea* Girault. Orig. desig.

Pseudooderella Brethes, 1922. Soc. Cient. Argentina, An. 93: 127.

Type-species: *Pseudooderella catamarcensis* Brethes. Monotypic.

Revision: Burks, 1967. Amer. Ent. Soc., Trans. 93: 423-431.

Taxonomy: De Santis, 1960. Rev. Fac. Agron. La Plata (3) 36: 111 (generic synonymy).

disparis Ruschka. Maine, s. to N. J.; Europe, Korea, Japan. Introduced from Russia and Japan; the first recoveries in 1910. Host: *Porthetria dispar* (L.); *Apanteles melanoscelus* (Ratz.). Development as a secondary parasite may occur only in laboratory or insectary cultures. N. Amer. literature before 1929 used the name *bifasciatus*.

Anastatus bifasciatus var. *disparis* Ruschka, 1920. Zool.-Bot. Gesell. Wien., Verh. 70: 265. ♂, ♀.

Taxonomy: Pieltain, 1934. Eos 10: 286-290. —Tachikawa, 1965. In Yasumatsu *et al.*, Icon. Ins. Jap., v. 3, p. 281 (*disparis* syn. of *japonicus* (Ashmead)). —Hirose *et al.*, 1968. Kyushu Univ. Faculty Agr., Jour. 14: 450, footnote.

Biology: Fiske, 1910. Parasites of Gipsy and Brown-Tail Moths Introduced into Mass. pp. 16-51. —Howard and Fiske, 1911. U. S. Dept. Agr., Bur. Ent. Bul. 91: 75, 168-176. —Muesebeck and Dohanian, 1927. U. S. Dept. Agr., Bul. 1487: 24. —Burgess and Crossman, 1929. U. S. Dept. Agr., Tech. Bul. 86: 23-31. —Felker, 1940. N. H. Dept. Agr., Bien. Rpt. 14: 122. —Brown and Sheals, 1944. Jour. Forestry 42: 400. —Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139: 76. —Karnozitzky, 1957. Bulg. Akad. Nauk. Zool. Inst., Trud. 4: 37, 97. —Templado, 1957. Inst. Biol. Apl. Pubs. Barcelona 25: 126. —Vasic and Salatic, 1959. Zast. Bilja 52-53: 45. —Stefanov and Keremedziev, 1961. Viss. Lesot. Inst. Sofia, Nauch., Trud. 9: 162. —Tadic, 1961. Zast. Bilja 13: 63-64. —Salatic, 1963. Zast. Bilja 14: 693-699. —Bjegovic, 1963. Zast. Bilja 14: 544. —Bjegovic, 1964. Zast. Bilja 15: 369. —Dissescu and Ceianu, 1967. Rev. Padurilor 82: 470. —Kochetova, 1968. Zool. Zhur. 47: 1572.

drassi (Riley). Mo. Host material preserved with original type specimen appears to be cocoon of a dryinid.

Eupelmus drassi Riley, 1892. In Howard, Ent. Soc. Wash., Proc. 2: 297. ♀.

floridanus Roth and Willis. Fla. Host: *Eurycotis floridana* (Walker).

Anastatus floridanus Roth and Willis, 1954. Amer. Ent. Soc., Trans. 80: 31. ♀, ♂.

Biology: Roth and Willis, 1954. Amer. Ent. Soc., Trans. 80: 33-39. —Roth and Willis, 1960. Smithsn. Inst., Misc. Coll. 141: 245-246.

furmissi Burks. Oreg. Host: *Coloradia pandora* Blake, *Pseudohazis* sp.

Anastatus furmissi Burks, 1967. Amer. Ent. Soc., Trans. 93: 426. ♀.

gemmarii (Ashmead). Fla. Originally said to have been reared from galls of *Callirhytis quercusgemmaria* (Ashm.), but in the subsequent nearly 90 years it has not been reared again from this rather common gall. The host record may be incorrect.

Eupelmus gemmarii Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 129. ♀.

hirtus (Ashmead). N. Y., s. to Fla. Host: *Thyanta custator* (F.).

Eupelmus hirtus Ashmead, 1885. Amer. Ent. Soc., Trans. 12: Proc. p. xiv. ♀, ♂.

mantis (Ashmead). Fla., Ga., Ill., Miss., Ark., Okla., Tex. Host: *Stagnomantis carolina* (Johan.).

Eupelmus mantis Ashmead, 1885. Amer. Ent. Soc., Trans. 12: Proc. p. xv. ♀, ♂.

microcentri Gahan. Pa., D. C., Ill., Kans., Tex., N. Mex., Ariz. Host: *Microcentrum* sp.

Anastatus microcentri Gahan, 1922. U. S. Natl. Mus., Proc. 61 (24): 12. ♀, ♂.

mirabilis (Walsh and Riley). N. J., s. to Fla., w. to Kans., Tex.; Mexico. Host: *Amblycoryphe oblongifolia* (Deg.), *Microcentrum retinerve* (Burm.), *M. rhombifolium* (Sauss.);

Acrosternum hilare (Say), *Brochymena* sp.

Antigaster mirabilis Walsh and Riley, 1869. Amer. Ent. 1: 156. ♀.

Taxonomy: Riley, 1874. Mo. State Bd. Agr., Ann. Rpt. 9: 162-165.

Biology: Howard, 1880. Canad. Ent. 12: 209-210. —Howard, 1881. U. S. Dept. Agr., Ann. Rpt. for 1880, pp. 250-251. —Griffiths, 1952. Fla. Ent. 35: 137-138.

pearsalli Ashmead. Mass., N. Y., N. J., Pa., Va., N. C., Ohio, Wis., Ark. Host: *Acrosternum hilare* (Say), *Archimerus alternatus* (Say), *Banasa dimidiata* (Say); *Paonias astylus* (Drury), *Telea polyphemus* (Cramer); *Apanteles melanoscelus* (Ratz.).

Anastatus pearsalli Ashmead, 1898. Ent. News 9: 24. ♀.

Biology: Muesebeck and Dohanian, 1927. U. S. Dept. Agr., Bul. 1487: 24-25.

reduvii (Howard). Md., s. to Fla., w. to Kans., Tex.; West Indies, Cent. and North. South Amer.
Host: *Microcentrum* sp.; *Acrosternum hilare* (Say), *Anasa tristis* (Deg.), *Arilus cristatus* (L.), *Tetyra bipunctata* (H.-S.); *Anisota senatoria* (S. and A.), *Estigmene acrea* (Drury), *Telea polyphemus* (Cramer).
Eupelmus reduvii Howard, 1880. Canad. Ent. 12: 207. ♂, ♀.

Revision: Waterston, 1923. Bul. Ent. Res. 14: 104-108.

Biology: Underhill, 1934. Va. Agr. Expt. Sta., Bul. 294: 17-18. —Cleare and Squire, 1934. Agr. Jour. Brit. Guiana 5: 189. —Breland, 1941. Ent. Soc. Amer., Ann. 34: 110.

ruficollis (Cameron). Calif. Host: *Microcentrum rhombifolium* (Sauss.), *Scudderella furcata* Brunner. In much California literature this sp. is treated under the name *mirabilis*.
Brasema ruficollis Cameron, 1905. Invertebrata Pacifica 1: 125. ♀.
Anastatus ruficollis Crawford, 1913. U. S. Natl. Mus., Proc. 46: 347.

Taxonomy: Essig, 1926. Insects of West. No. Amer., p. 843.

Biology: Issac, 1905. Calif. State Comn. Hort., Bien. Rpt. 1: 102 (*mirabilis*). —Essig, 1913. Calif. State Comn. Hort., Monthly Bul. 2: 22, 274 (*mirabilis*).

semiflavidus Gahan. Kans., Tex., N. Mex., Ariz., Calif. Host: *Hemileuca nevadensis* Stretch, *H. oliviae* Ckll.
Anastatus semiflavidus Gahan, 1914. U. S. Natl. Mus., Proc. 48: 160. ♀, ♂.

Biology: Caffrey, 1921. Jour. Agr. Res. 21: 373-384. —Wildermuth and Frankenfeld, 1933. Jour. Econ. Ent. 26: 794-798. —Frankenfeld and Barnes, 1933. Jour. Econ. Ent. 26: 799-805. —Barnes and Frankenfeld, 1935. Jour. Econ. Ent. 28: 917-924. —Barnes, 1944. Jour. Econ. Ent. 37: 544-545. —Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139: 50.

tenuipes Bolivar and Pieltain. Md., s. to Fla., w. to Ill., Kans., Tex., Ariz.; Cosmopolitan.
Ecology: Well established in buildings infested with brownbanded roaches, and competing successfully with *Comperia merceti* (Comp.), an encyrtid parasite of the same roach. An adventive species, often intercepted at ports of entry, following its host into North America; first established in Arizona in 1939, widespread in Gulf Coast by 1940.
Host: *Supella supellectilium* (Serv.).
Anastatus tenuipes Bolivar y Pieltain, 1925. Soc. Roy. Ent. Egypte, Bul. 9: 43. ♀.
Anastatus blattidarum Ferriere, 1930. Bul. Ent. Res. 21: 33. ♀.
Solindenia blattiphagus Mani, 1936. Indian Mus., Rec. 38: 131. ♂, ♀.

Taxonomy: Roth and Willis, 1960. Smithsn. Inst., Misc. Coll. 141: 246. —Burks, 1967. Amer. Ent. Soc., Trans. 93: 430.

Biology: Pruthi and Mani, 1940. India Imp. Council Agr. Res., Misc. Bul. 30: 12. —Flock, 1941. Brooklyn Ent. Soc., Bul. 36: 1-4. —Tinkham, 1948. Amer. Midland Nat. 40: 557. —Weber, 1951. Hawaii. Ent. Soc., Proc. 14: 223. —Roth and Willis, 1960. Smithsn. Inst. Misc. Coll. 141: 246-247.

zeli (Ashmead). Fla. Host: *Zelus longipes* (L.).
Eupelmus zeli Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 130. ♀.

Taxonomy: Burks, 1967. Amer. Ent. Soc., Trans. 93: 431.

Genus PHLEBOPENES Perty

Phlebopenes Perty, 1833. Delect. Anim. Articuli. Brasil., fasc. 3, p. 132.

Type-species: *Phlebopenes splendidus* Perty. Monotypic.

Prionopelma Westwood, 1835. Zool. Soc. London, Proc. 3: 51.

Type-species: *Prionopelma viridis* Westwood. Monotypic.

Revision: Roman, 1920. Arkiv for Zool. 12: 24-30.

Taxonomy: Burks, 1964. Ent. News 75: 1-2. —De Santis, 1967. Comision Invest. Cient. Prov. Buenos Aires, Notas 4(8): 3 (Argentine sp.).

hettricki Burks. Md., Ga., Fla.
Phlebopenes hettricki Burks, 1964. Ent. News 75: 2-5. ♀.

Genus ZAISCHNOPSIS Ashmead

Ischnopsis Ashmead, 1896. Ent. Soc. Wash., Proc. 4: 16. Preocc. by Walsingham, 1881.

Type-species: *Ischnopsis ophthalmica* Ashmead. Orig. desig.

Zaischnopsis Ashmead, 1904. Ent. Soc. Wash., Proc. 6: 126. N. name.

schwarzii (Ashmead). Fla.

Charitopus schwarzii Ashmead, 1896. Ent. Soc. Wash., Proc. 4: 11. ♀.

Taxonomy: Gahan, 1951. Canad. Ent. 83: 172.

Genus ENCYRTASPIS Ashmead

Encyrtaspis Ashmead, 1904. Carnegie Mus., Mem. 1: 290, 492.

Type-species: *Encyrtaspis brasiliensis* Ashmead. Monotypic.

Revision: Gahan, 1943. U. S. Natl. Mus., Proc. 94: 363-369.

californica (Ashmead). N. Mex., Calif. Host: *Anarsia lineatella* Zell, *Evetria* sp.

Tineobius californicus Ashmead, 1896. Ent. Soc. Wash., Proc. 4: 15. ♀.

laticeps (Brues). Tex.

Anastatus laticeps Brues, 1907. Wis. Nat. Hist. Soc., Bul. 5: 107. ♀.

semirufa Gahan. N. Y., s. to Fla., w. to La., Tex., Ariz. Host: *Grapholitha molesta* (Busck),

Laetilia coccidivora (Comst.); *Macrocentrus ancyliivorus* Roh.

Encyrtaspis semirufus Gahan, 1927. U. S. Natl. Mus., Proc. 71 (4): 10. ♀, ♂.

Biology: Haeussler, 1930. Jour. Agr. Res. 41: 366. —Allen, 1962. U. S. Dept. Agr., Tech. Bul. 1265: 101-102.

Genus LECANIOBIUS Ashmead

Lecaniobius Ashmead, 1896. Ent. Soc. Wash., Proc. 4: 8, 17.

Type-species: *Lecaniobius cockerellii* Ashmead. Orig. desig.

Zalophothrix Crawford, 1908. Ent. Soc. Wash., Proc. 9: 156.

Type-species: *Zalophothrix mirum* Crawford. Orig. desig.

Revision: Compere, 1939. Calif. Univ. Pubs., Ent. 7: 79-83.

Taxonomy: Crawford, 1911. U. S. Natl. Mus., Proc. 41: 275. —Gahan, 1924. U. S. Natl. Mus., Proc. 65 (4): 3-4. —Gahan, 1943. U. S. Natl. Mus., Proc. 94: 339.

capitatus Gahan. Tex.; Mexico, Cent. Amer., S. Amer. Host: *Ceroplastes* sp., *Saissetia hemispherica* (Targ.-Toz.), *S. nigra* (Niet.), *S. oleae* (Oliv.).

Lecaniobius capitatus Gahan, 1924. U. S. Natl. Mus., Proc. 65 (4): 4-6. ♀.

cockerellii Ashmead. Fla.; West Indies, Cent. and S. Amer. Host: *Saissetia nigra* (Niet.), *S. oleae* (Oliv.); *Scutellista cyanea* Mots.

Lecaniobius cockerellii Ashmead, 1896. Ent. Soc. Wash., Proc. 4: 17. ♀.

Zalophothrix mirum Crawford, 1908. Ent. Soc. Wash., Proc. 9: 157. ♀.

Taxonomy: Smith and Compere, 1928. Calif. Univ. Pubs., Ent. 4: 242, 297-301.

utilis Compere. Calif.; S. Amer. Introduced from Argentina into Calif., first recovered in 1935.

Later introduced from Calif. into Peru and Brazil. Host: *Saissetia oleae* (Oliv.).

Lecaniobius utilis Compere, 1939 (Sept.). Calif. Univ. Pubs., Ent. 7: 79. ♀, ♂.

Biology: Wille, 1937. Lima, Peru, Estac. Expt. Agr. de la Molina, Mem. 9: 121 (manuscript name). —Wille, 1937. Lima, Peru, Estac. Expt. Agr. de la Molina, Informe 42: 4-11 (manuscript name). —Wille, 1938. Lima, Peru, Estac. Expt. Agr. de la Molina, Mem. 10:

194-196 (manuscript name). —Wille, 1939 (Jan.). Lima, Peru, Estac. Expt. Agr. de la

Molina, Mem. 11: 218-219 (manuscript name). —Compere, 1939 (Sept.). Calif. Univ. Pubs.,

Ent. 7: 79-83 (life history). —Flanders, 1942. Jour. Econ. Ent. 35: 687. —Flanders, 1944.

Jour. Econ. Ent. 37: 409. —Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139: 108.

Family ENCYRTIDAE

By GORDON GORDH

The higher classification of the Encyrtidae used in this catalog differs drastically from that proposed in the 1951 edition. Some explanation is necessary. Burks has considered the Signiphoridae and Aphelinidae as subfamilies of the Encyrtidae. In the 1951 catalog the aphelinids were considered a subfamily of the Eulophidae and the signiphorids were treated as a distinct family (Thysanidae). The aphelinids and signiphorids appear more nearly related to the Encyrtidae than to other families of chalcidoids. In placing the aphelinids under the Encyrtidae, the subfamilies of aphelinids (*sensu* Ferriere, 1965, Faune de l'Europe Bassin Medit., 1: 1-206) have been relegated to tribal status.

Recently Trjapitzin (1973, Ent. Rev. 52 (1): 118-125; Ent. Rev. 52 (2): 287-295) has treated the higher classification of the Encyrtidae (*sensu stricto*) and provided a radical reorganization at the tribal and subfamilial levels. His classification has been adopted in the present treatment of the Encyrtidae. In so doing, however, the placement of several genera remains undecided. These will be treated in a separate publication.

In this section the term "cosmopolitan" means the species is found throughout North America.

I thank D. Miller and M. Stoetzel (Systematic Entomology Laboratory, IIBIII, U. S. Dept. Agr., Beltsville, Maryland) for providing correct names for homopterous hosts. D. P. Annecke (Plant Protect. Res. Inst., Pretoria, South Africa) gave his advice on the placement of several species earlier referred to *Aphycus*.

The hosts cited in this section are only those reported for North America.

SUBFAMILY APHELININAE

Taxonomy: Ferriere, 1965. Faune de l'Europe Bassin Medit. 1: 1-206.—Nikol'skaya and Jashnosh, 1966. Akad. Nauk SSSR 91: 1-294.—Nikol'skaya and Jashnosh, 1968. Akad. Nauk SSSR 52: 3-42.

TRIBE APHELININI

Genus APHELINUS Dalman

Aphelinus Dalman, 1820. Svenska Vetensk. Akad., Handl. 21: 181.

Type-species: *Entedon abdominalis* Dalman. Monotypic.

Agonioneurus Westwood, 1833. Mag. Nat. Hist. 6: 122.

Type-species: *Agonioneurus basalis* Westwood. Monotypic.

Myina Nees, 1834. Hym. Ichn. Aff. Monog., v. 2, p. 189.

Type-species: *Myina abdominalis* Nees. Designated by Gahan and Fagan, 1923.

Eriophilus Haldeman, 1851. Pa. Farm Jour. 1: 130.

Type-species: *Eriophilus mali* Haldeman. Monotypic.

Anozus Foerster, 1856. Hym. Stud., v. 2, p. 84.

Type-species: *Anozus siphonophorae* Ashmead. By subsequent monotypy.

Misina Rondani, 1870. Arch. Zool., Anat. e Fisiol. (2) 2: 11. Erroneous subsequent spelling.

This genus is cosmopolitan and consists of approximately 45 described species which are primary internal parasites of aphids. Some species are useful in biological control of aphid pests.

Taxonomy: Mercet, 1912. Trab. Mus. Cien. Nat. 10 (1): 1-306. —Kurdjumov, 1913. Rev. Russe d'Ent. 13 (2): 266-270. —Girault, 1913. Queensland Mus., Mem. 2: 183-184. —Girault, 1915. Queensland Mus., Mem. 4: 45-47. —Timberlake, 1924. Hawaii. Ent. Soc., Proc. 5 (3): 405-411. —Gahan, 1924. U. S. Natl. Mus., Proc. 65 (4): 7-12. —De Santis, 1946. La Plata Mus. Rev., Zool. (n. s.) 5: 1-21. —Jashnosh, 1963. Ent. Rev. 42 (1): 178-185. —Agarwal, 1964. Indian Acad. Sci., Proc. (B) 60 (5): 331-332. —Yoshimoto, 1965. Pacific Insects 7 (4): 690, 694-695. —Hayat, 1972. Entomophaga 17 (1): 49-58. —Graham, 1976. Syst. Ent. 1 (2): 123-146.

asychis Walker. Okla., Tex., Calif. Imported into the United States from Iran for the biological control of the greenbug, *Schizaphis graminum*, in the midwest. In California the parasite attacks *R. maidis* along the Pacific coast. Host: *Schizaphis graminus* (Rond.), *Rhopalosiphum maidis* (Fitch). The synonymy listed here is essentially that of Ferriere

- (1965), with the exception of his consideration of *semiflavus* as a junior synonym of Walker's *asychis*.
- Myina abdominalis* Nees, 1834. Hym. Ich. Aff. Monog. v. 2, p. 190. [misidentification]. ♂, ♀.
- Aphelinus Asychis* Walker, 1839. Monog. Chalcid., v. 1, p. 2. ♀.
- Aphelinus Euthria* Walker, 1839. Monog. Chalcid., v. 1, p. 3. ♀.
- Myina affinis* Foerster, 1841 [1840]. Beitr. Monog. Pteromalinen, p. 44. ♀.
- Aphelinus brevicar* Thomson, 1876 (1875). Hym. Scand., v. 4, p. 185.
- Aphelinus dubia* Kurdjumov, 1913. Rev. Russe d'Ent. 13 (2): 268.
- Aphelinus brachyptera* Kurdjumov, 1913. Rev. Russe d'Ent. 13 (2): 268.
- Aphelinus brevipennis* Girault, 1917. Descr. Stellarum Nov., p. 18.
- Taxonomy:** Ferriere, 1965. Faune de l'Europe Bassin Medit. 1: 75. —Graham, 1976. Syst. Zool. 1 (2): 124, 127, 128-129.
- Biology:** Jackson and Eikenbary, 1971. Ent. Soc. Amer., Ann. 64 (1): 81-85. —Rainey *et al.*, 1971. Ent. Soc. Amer., Ann. 64 (1): 169-176. —Huffaker, 1971. Biol. Control, pp. 72-73. —van den Bosch and Messenger, 1973. Biol. Control, pp. 77, 139. —Michel, 1967. C. R. Acad. Sci., Paris 264: 936-939. —Michel, 1969. Entomophaga 14 (4): 439-446. —Monadjemi, 1972. Soc. Ent. de France, Ann. (n. s.) 8 (2): 441-449. —Michel, 1973. Entomophaga 18 (4): 349-382. —Griffin, 1931. Ann. Mag. Nat. Hist. (10) 7: 498 [Date of Publication of "Beitrag zur Monographie der Pteromalinen Nees [Hymenoptera]]".
- aureus** Gahan. Calif. Host: *Chaitophorus salicicola* (Essig).
- Aphelinus aureus* Gahan, 1924. U. S. Natl. Mus., Proc. 65 (4): 9. ♂, ♀.
- automatus** Girault. Va., Ill. Host: *Hysteroneura setariae* (Thos.).
- Aphelinus automatus* Girault, 1911. Entomologist 44: 178. ♀.
- chaonia** Walker. Calif. Adventive. Host: *Aphis spiraeicola* Patch, *Toxoptera aurantii* (Fonse.).
- Aphelinus Chaonia* Walker, 1839. Monog. Chalcid. v. 1, p. 4. ♂, ♀.
- Myina flavicornis* Foerster, 1841 [1840]. Beitr. Monog. Pteromalinen, p. 45. ♀.
- Aphelinus transversus* Thomson, 1876 (1875). Hym. Scand., v. 4, p. 185. ♀.
- flaviventris** Kurdjumov. Fla. Adventive.
- Aphelinus flaviventris* Kurdjumov, 1913. Rev. Russe d'Ent. 13 (2): 268. Described as *flaviventris* Foerster.
- Taxonomy:** Graham, 1976. Syst. Ent. 1 (2): 130.
- howardii** Dalla Torre. Calif.
- Aphelinus flaviceps* Howard, 1895. U. S. Dept. Agr., Div. Ent., Tech. Bul. 1: 25. ♂. Preoccupied.
- Aphelinus Howardii* Dalla Torre, 1898. Cat. Hym., v. 5, p. 221. N. name.
- jucundus** Gahan. Que., w. to Ont., s. to Wis., Oreg., s. to Calif. Host: *Acyrtosiphon cornelli* (Patch), *A. pseudodirhodum* (Patch), *Cryptomyzus ribis* (L.), *Macrosiphum euphorbiae* (Thos.).
- Aphelinus jucundus* Gahan, 1924. U. S. Natl. Mus., Proc. 65 (4): 8-9. ♀.
- Biology:** Griswold, 1927. Jour. Econ. Ent. 20 (1): 93. —Griswold, 1929. Ent. Soc. Amer., Ann. 22 (3): 438-457.
- lapisigni** Howard. Idaho w. to Oreg. Host: *Nearctaphis bakeri* (Cowen).
- Aphelinus lapisigni* Howard, 1917. Biol. Soc. Wash., Proc. 30 (18): 77-78. ♀.
- Biology:** Smith, 1923. Idaho Agr. Exp. Sta., Res. Bul. 3: 55-57.
- mali** (Haldeman). Cosmopolitan. Host: *Aphis monardae* Oestl., *A. pomi* DeGeer, *Brevicoryne brassicae* (L.), *Colopha eragrostidis* Midd., *Coleophora malivorella* Riley, *Eriosoma crataegi* (Oestl.), *E. lanigerum* (Haus.), *Lepidosaphes ulmi* (L.), *Macrosiphum floridae* (Ashm.), *M. rosae* (L.), *Prociphilus fraxinifolii* (Riley), *Myzus lythri* (Schränk), *Schizaphis graminum* (Rond.), *Tetraneura graminis* Monell. Records of non-homopterous hosts must be verified.
- Eriophilus mali* Haldeman, 1851. Pa. Farm Jour. 1: 130-131. ♂, ♀.
- Blastothrix rosae* Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 130. ♀.
- Aphelinus varicornis* Girault, 1909. Psyche 16 (2): 29-31. ♀.

- Taxonomy: Howard, 1895. U. S. Dept. Agr., Div. Ent., Tech. Ser. 1: 24-25. — De Santis, 1948. La Plata Mus. Rev. Zool. (n. s.) 5: 103. — Ferriere, 1965. Faune l'Eur. Bassin Medit. 1: 66-69. — Graham, 1976. Syst. Ent. 1 (2): 124, 127.
- Biology: Lundie, 1924. N. Y. (Cornell) Agr. Exp. Sta., Mem. 79: 1-27. — Telenga, 1936. Trudy VIZR, Ser. 1 (1): 7-75. — Gibson, 1939. VII Internat. Kong. Ent., Verhandl. 3: 1454. — Yothers, 1953. U. S. Dept. Agr., Agr. Res. Admin., Bur. Ent. Pl. Quar. E 861, 61 pp. — Evenhuis, 1958. Tijdsch. Plant. Wagen., pp. 3-103. — Lung, Wang, and Tang, 1960. Acta Ent. Sinica 10 (1): 6. — Evenhuis, 1962. Entomophaga 7 (3): 215-220. — Boldyreva, 1970. Ent. Rev. 49 (4): 457-459. — Huffaker, 1971. Biol. Control, pp. 83, 410. — van den Bosch and Messenger, 1973. Biol. Control, pp. 29, 30, 79. See Peck, 1963. Can. Ent. Sup. pp. 263-267 for an extensive bibliography.
- marlatti** (Ashmead). Ont., Kans. Host: *Aphis* sp. on *Cineraria*.
Baeocharis Marlatti Ashmead, 1888. Kans. Agr. Exp. Sta., Bul. 3: (appendix) p. V. ♂, ♀.
Aphelinus subapterus Girault, 1916. Ent. News 27 (9): 405. ♂.
- Taxonomy: Gahan, 1924. U. S. Natl. Mus., Proc. 65 (4): 12.
- Biology: McLeod, 1938. Ent. Soc. Ontario, Ann. Rept. 68: 45-48.
- nigritus** Howard. S. C. w. to Tex., n. to Minn.; Calif. Ecology: In northern localities found in greenhouses. Host: *Hysteronura setariae* (Thos.), *Schizaphis graminus* (Rond.), *Pseudococcus* sp. on *Artemisia*. Pseudococcid host should be verified.
Aphelinus nigritus Howard, 1908. Ent. News 19 (8): 366-367. ♀.
- Biology: Webster and Phillips, 1912. U. S. Dept. Agr., Bur. Ent., Bul. 110: 123. — Wood, 1958. Jour. Econ. Ent. 51 (4): 553. — Jackson *et al.*, 1970. Jour. Econ. Ent. 63 (3): 733-736. — Archer *et al.*, 1974. Ent. Soc. Amer., Ann. 67 (1): 11-14.
- perpallidus** Gahan. Ont., N. Y., Iowa, Oreg., Calif. Host: *Chromaphis juglandicola* (Kltb.), *Monellia costalis* (Fitch), *Monellia* sp. on hickory, *M.* sp. on pecans, *Myzocallis fumipennella* (Fitch).
Aphelinus perpallidus Gahan, 1924. U. S. Natl. Mus., Proc. 65 (4): 10. ♂, ♀.
- sanborniae** Gahan. Pa., Ohio, Ont. w. to N. Dak. Host: *Kakimia houghtonensis* (Troop), *Sanbornia juniperi* Perg.
Aphelinus sanborniae Gahan, 1924. U. S. Natl. Mus., Proc. 65 (4): 7-8. ♂, ♀.
- semiflavus** Howard. Cosmopolitan. Host: *Acyrtosiphon cornelli* (Patch), *A. pisum* (Harris), *Chaitophorus viminalis* Monell, *Hyadaphis erysimi* (Kltb.), *Macrosiphum avenae* (F.), *Macrosiphoniella sanborni* (Gill.), *Myzus persicae* (Sulz.), *Myzus* sp. on *Aquilegia*, *Rhopalomyzus poae* (Gill.), *Schizaphis graminus* (Rond.), *Therioaphis maculata* (Buck.).
Aphelinus semiflavus Howard, 1908. Ent. News 19 (8): 366, 367. ♂, ♀.
Aphelinus brevipennis Girault, 1917. Descr. Stellarum Nov., p. 18.
- Taxonomy: Janssen, 1961. Beitr. z. Ent. 11 (5-6): 671-678.
- Biology: Hartley, 1922. Ohio Jour. Sci. 22 (8): 209-236. — van den Bosch, 1957. Jour. Econ. Ent. 50 (3): 353. — van den Bosch, 1959. Jour. Econ. Ent. 52 (1): 136-141. — Schlinger and Hall, 1959. Jour. Econ. Ent. 52 (1): 154. — Barnes, 1960. Jour. Econ. Ent. 53 (6): 1094. — Schaeffers and Allen, 1962. Hilgardia 32: 426. — Force and Messenger, 1964. Ent. Soc. Amer., Ann. 57 (4): 405-413. — Wilbert, 1964. Beitr. z. Ent. 14 (1-2): 159-219. — Wilbert, 1965. Zeitschr. Morph. Oekol. Tiere 55: 804-834. — Specht, 1969. Ent. Soc. Amer., Ann. 62 (5): 1207. — Manglitz and Schalk, 1970. Jour. Kans. Ent. Soc. 43 (3): 309-314.
- siphonophorae** (Ashmead). Fla. Host: *Macrosiphum* sp.
Anozus siphonophorae Ashmead, 1888. Canad. Ent. 20 (6): 104. ♀.
- toxopteraphidis** Kurdjumov. Calif. Released, possibly established.
Aphelinus toxopteraphidis Kurdjumov, 1913. Rev. Russe d'Ent. 13 (2): 269. ♂, ♀.
- Taxonomy: Graham, 1976. Syst. Ent. 1 (2): 124.
- varipes** (Foerster). Okla., Tex. Host: *Schizaphis graminum* (Rond.).
Myina varipes Foerster, 1840 (1841). Beitr. Monogr. Pteromalinen, p. 45. ♀.
- Taxonomy: Griffin, 1931. Ann. and Mag. Nat. Hist. (10) 7: 498 (nomenclature). — Graham, 1976. Syst. Ent. 1 (2): 125, 127, 133.

Biology: Jackson *et al.*, 1970. Jour. Econ. Ent. 63 (3): 733-736. —Archer *et al.*, 1974. Ent. Soc. Amer., Ann. 67 (1): 11-14.

Genus APHYTIS Howard

Aphytis Howard, 1900. Canad. Ent. 32 (6): 168.

Type-species: *Aphytis chilensis* Howard. Monotypic.

Prospaphelinus DeGregorio, 1914. Agr. Siciliana, Ann. 3 (4): 406.

Type-species: *Prospaphelinus silvestrii* DeGregorio. Monotypic.

About 90 species of *Aphytis* are known. They are primary external parasites of armored scale insects and some species are important biological control agents of various diaspidine pests.

Taxonomy: Mercet, 1932. Eos 8 (4): 353-365. —De Santis, 1948. La Plata Rev. Mus. Zool. (n. s.) 5: 113-138. —Compere, 1955. Calif. Univ., Pubs. Ent. 10 (4): 271-320. —Quednau, 1964.

So. Africa Ent. Soc., Jour. 27 (1): 86-116. —DeBach, 1969. Israel Jour. Ent. 4 (1): 11-28.

—Jashnosh, 1972. Ent. Rev. 51 (2): 146-152. —Jashnosh, 1973. Ent. Rev. 52 (4): 478-485.

—Rosen and DeBach, 1974. Bul. SROP, pp. 21-38. —Graham, 1976. Syst. Ent. 1 (2):

133-134. —DeBach and Rosen, 1976. Ent. Soc. Amer., Ann. 69 (3): 541-545.

Biology: DeBach, 1974. Biol. Control by Nat. Enem., 323 pp. —Rosen and DeBach, 1976. Mushi 46 (1): 1-17.

abnormis (Howard). N. J. s. to D. C. Host: *Lepidosaphes ulmi* (L.), *Lepidosaphes* sp. on *Salix caprea*.

Aphelinus abnormis Howard, 1881. U. S. Dept. Agr., Ann. Rept. for 1880, pp. 353, 355. ♀.

Taxonomy: DeBach and Azim, 1962. Mushi 36 (1): 1.

chilensis Howard. Cosmopolitan. Host: *Aspidiotus nerii* Bouche, *Aspidiotus* sp. on *Pinus radiata*, *Chionaspis pinifoliae* (Fitch), *Furchadiaspis zamiae* (Morg.), *Hemiberlesia rapax* (Comst.). It seems that what previous writers have called *chilensis* will turn out to be a complex of morphologically similar forms.

Aphytis chilensis Howard, 1900. Canad. Ent. 32 (6): 168. ♀.

Aphelinus longiclavae Mercet, 1911. Assoc. Espan. Prog. Cien., Cong. Valencia, p. 128. ♂, ♀.

Trichogrammatoidea signiphoroides Brethes, 1913. Buenos Aires Mus. Nac. de Hist. Nat., An. 24: 99-100. ♀.

Aphelinus capitatus Rust, 1915. Ent. News 26 (2): 73-74. ♀.

Taxonomy: Brethes, 1916. Buenos Aires Mus. Nac. de Hist. Nat., An. 27: 429. —Mercet, 1921.

Real Soc. Hist. Nat., Bol. 50: 299-300. —Timberlake, 1924. Hawaii. Ent. Soc., Proc. 5 (3):

411-412. —Gahan, 1924. U. S. Natl. Mus., Proc. 65 (4): 11. —Compere, 1955. Calif. Univ.,

Pubs. Ent. 10 (4): 283-285. —Quednau, 1964. So. Africa Ent. Soc., Jour. 27 (1): 94-96.

chrysomphali (Mercet). N. Y. s. to Fla., w. to Calif. Host: *Acutaspis umbonifera* (Newstead),

Aonidiella aurantii (Mask.), *A. citrina* (Coq.), *Chrysomphalus dictyospermi* (Morg.).

Aphelinus chrysomphali Mercet, 1912. Soc. Espan. Hist. Nat., Bol. 12: 135-140. ♀.

Prospaphelinus silvestrii DeGregorio, 1914. Agr. Siciliana, Ann. 3 (4): 406. Questionable synonym.

Aphelinus quaylei Rust, 1915. Ent. News 26 (2): 75-76. ♀. Questionable synonym.

Taxonomy: De Santis, 1948. La Plata Mus. Rev. Zool. (n. s.) 5: 122-126. —Compere, 1955.

Calif. Univ., Pubs. Ent. 10 (4): 314-316. —Quednau, 1964. So. Africa Ent. Soc., Jour. 27 (1):

113-114. —DeBach and Rosen, 1976. Ent. Soc. Amer., Ann. 69 (3): 541-545.

Biology: Quayle, 1932. Calif. Agr. Exp. Sta., Bul. 542: 31-33. —Woglum *et al.*, 1947. Jour.

Econ. Ent. 40 (6): 818-820. —DeBach, 1954. Lab. Zool. Gen. e Agr. Portici, Bol. 33: 134-151.

—Smith, 1957. Canad. Ent. 89 (5): 219-230. —Muma, 1959. Jour. Econ. Ent. 52 (4): 577-586.

—DeBach and Sisojevic, 1960. Ecology 41: 153. —DeBach and Sundby, 1963. Hilgardia 34

(5): 105-166. —Quednau, 1964. So. Africa Agr. Sci., Jour. 7: 335-345. —Huffaker, 1971. Biol.

Control, pp. 74, 170-171, 180-182, 185, 186, 464. —Abdelrahman, 1974. Aust. Nat. (Austral.)

Jour. Zool. 22 (2): 203-229.

citrinus Compere. Calif. Host: *Aonidiella citrina* (Coq.).

Aphytis citrinus Compere, 1955. Calif. Univ., Pubs. Ent. 10 (4): 309, 312-313. ♀.

- Taxonomy: DeBach, 1959. Ent. Soc. Amer., Ann. 52 (4): 360-361.
- coheni** DeBach. Calif. Host: *Aonidiella aurantii* (Mask.), *A. citrina* (Coq.), *Chrysomphalus dictyospermi* (Morg.).
- Aphytis coheni* DeBach, 1960. Ent. Soc. Amer., Ann. 58 (6): 704, 705. ♂, ♀.
- Taxonomy: Rao and DeBach, 1969. Hilgardia 39 (19): 515-567.
- Biology: Fleschner, 1963. Pan-Pacific Ent. 39 (2): 114-116. — Huffaker, 1971. Biol. Control, pp. 171, 464. — Sternlicht, 1973. Entomophaga 18 (4): 339-342.
- comperei** DeBach and Rosen. Tex. Host: *Aonidiella aurantii* (Mask.).
- Aphytis comperei* DeBach and Rosen, 1976. Ent. Soc. Amer., Ann. 69 (3): 543. ♀.
- dealbatus** Compere. Calif. Host: *Lepidosaphes ulmi* (L.).
- Aphytis dealbatus* Compere, 1955. Calif. Univ., Pubs. Ent. 10 (4): 278, 286-287. ♀.
- diaspidis** (Howard). N. Y. s. to Va., La., Calif. Host: *Abgrallaspis oryococcus* (Wogl.), *Acutaspis agavis* (Towns. and Ckll.), *Aonidiella aurantii* (Mask.), *Chionaspis furfura* (Fitch), *C. pinifoliae* (Fitch), *Hemiberlesia rapax* (Comst.), *Parlatoria pergandii* Comst., *Quadraspidiotus perniciosus* (Comst.). It appears quite likely that other species of *Aphytis* have been misidentified as *diaspidis*.
- Aphelinus diaspidis* Howard, 1881. U. S. Dept. Agr., Ann. Rept. for 1880, p. 355. ♂, ♀.
- Taxonomy: De Santis, 1948. La Plata Mus. Rev. Zool. (n. s.) 5: 133-135. — Compere, 1955. Calif. Univ., Pubs. Ent. 10 (4): 289-294. — Quednau, 1964. So. Africa Ent. Soc., Jour. 27 (1): 98-99.
- Biology: Quayle, 1910. Jour. Econ. Ent. 3 (5): 398-401. — Alam, 1956. Nat. Acad. Sci. India, Proc., Allahabad 26 (B): 69-74.
- fisheri** DeBach. Calif. Introduced, establishment questionable. Host: *Aonidiella aurantii* (Mask.), *Aspidiotus nerii* Bouche.
- Aphytis fisheri* DeBach, 1959. Ent. Soc. Amer., Ann. 52 (4): 359, 362. ♂, ♀.
- Taxonomy: Quednau, 1964. So. Africa Ent. Soc., Jour. 27 (1): 114.
- Biology: DeBach and Landi, 1959. Calif. Agr. 13: 9. — van den Bosch and Messenger, 1973. Biol. Control, p. 77. — Huffaker, 1971. Biol. Control, pp. 75, 184.
- hispanicus** (Mercet). Fla. w. to Calif. Host: *Parlatoria pergandii* Comst., *Aonidiella aurantii* (Mask.).
- Aphelinus maculicornis* var. *hispanicus* Mercet, 1912. Mus. Cien. Nat. Madrid Trab., ser. Zool. 10: 82. ♀.
- Taxonomy: Mercet, 1930. Rev. Biol. y. Forest. Limnologia, (Ser. B) 2 (2): 51, 53-54 (misidentification of *hispanicus* as *A. maculicornis* (Masi)). — Compere, 1955. Calif. Univ., Pubs. Ent. 10 (4): 289, 294. — DeBach, 1959. Ent. Soc. Amer., Ann. 52 (4): 359-360. — Quednau, 1964. So. Africa Ent. Soc., Jour. 27 (1): 92 (key), 99, 100. — Muma and Selheim, 1966. Fla. State Hort. Soc., Proc. 79: 87-89.
- holoxanthus** DeBach. Fla. w. to Calif. Introduced and successfully established. Host: *Aonidiella aurantii* (Mask.) (in lab.), *Aspidiotus nerii* Bouche, *Chrysomphalus aonidum* (L.).
- Aphytis holoxanthus* DeBach, 1960. Ent. Soc. Amer., Ann. 53 (6): 704-705. ♂, ♀.
- Taxonomy: Quednau, 1964. So. Africa Ent. Soc., Jour. 27 (1): 93 (key), 115. — Muma and Selheim, 1966. Fla. State Hort. Soc., Proc. 79: 87 (key), 90. — Rao and DeBach, 1969. Hilgardia 39 (19): 515-567.
- Biology: Huffaker, 1971. Biol. Control, pp. 170-172, 460-461. — DeBach, 1974. Biol. Control by Nat. Enem., pp. 175-177, 202-203, 291.
- immaculatus** Compere. Calif. Introduced, establishment questionable. Host: *Aonidiella aurantii* (Mask.), *Lepidosaphes beckii* (Newm.).
- Aphytis immaculatus* Compere, 1955. Calif. Univ., Pubs. Ent. 10 (4): 279, 281, 283, 307-308. ♂, ♀.
- Biology: Clausen, 1956. Pan-Pacific Ent. 32 (3): 126-127.

lepidosaphes Compere. Fla., Tex., Calif. Host: *Lepidosaphes beckii* (Newm.).

Aphytis lepidosaphes Compere, 1955. Calif. Univ., Pubs. Ent. 10 (4): 279, 307. ♂, ♀.

Taxonomy: Quednau, 1964. So. Africa Ent. Soc., Jour. 27 (1): 93 (key), 107.

Biology: DeBach, 1959. Ent. Soc. Amer., Ann. 52 (4): 354-362. — Dean, 1961. Ent. Soc. Amer., Ann. 54 (6): 918-920. — DeBach and Landi, 1961. Hilgardia 31 (14): 459-497. — DeBach and Argyriou, 1967. Entomophaga 12 (4): 325-342. — Huffaker, 1971. Biol. Control, pp. 130-131, 171, 462.

lingnanensis Compere. Fla., Tex., Calif. Host: *Aonidiella aurantii* (Mask.), *A. citrina* (Coq.) (in lab.), *Aspidiotus nerii* Bouche, *Diaspis echinocacti* (Bouche) (in lab.).

Aphytis lingnanensis Compere, 1955. Calif. Univ., Pubs. Ent. 10 (4): 279, 303-305. ♂, ♀.

Taxonomy: DeBach, 1959. Ent. Soc. Amer., Ann. 52 (4): 356, 357, 359 (key), 360. — Quednau, 1964. So. Africa Ent. Soc., Jour. 27 (1): 93 (key), 107. — Rao and DeBach, 1969. Hilgardia 39 (19): 515-567.

Biology: van den Bosch and Messenger, 1973. Biol. Control, pp. 77. — DeBach *et al.*, 1956. Ent. Soc. Amer., Ann. 49 (3): 235-239 (as *Aphytis* "A"). — DeBach and White, 1960. Calif. Agr. Exp. Sta., Bul. 770, 58 pp. — DeBach and Sisojevic, 1960. Ecology 41 (1): 153-160. — Gordh and DeBach, 1976. Canad. Ent. 108 (6): 583-589. — Huffaker, 1971. Biol. Control, pp. 74-75, 85, 89, 170-171, 180-186.

maculicornis (Masi). Calif. Host: *Parlatoria oleae* (Colvée).

Aphelinus maculicornis Masi, 1911. Lab. Zool. Gen. e Agr. Portici, Bol. 5 (4): 158-159. ♀.

Taxonomy: Douth, 1954. Jour. Econ. Ent. 47 (1): 39-40. — Hafez and Douth, 1954. Canad. Ent. 86 (2): 90-96. — Sugonyayev, 1962. Akad. Nauk SSSR Izv., ser. Biol. 5: 755. — Ahmad and Ghani, 1971. Bul. Ent. Res. 61 (1): 69-74. — Khasimuddin and DeBach, 1976. Entomophaga 21 (1): 81-92.

Biology: Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139: 6, 33, 82. — Huffaker *et al.*, 1962. Hilgardia 32 (13): 541-636. — Huffaker and Kennett, 1966. Hilgardia 37 (9): 283-335. — Huffaker, 1971. Biol. Control, pp. 30-31, 42, 48, 73, 118, 129, 172-179. — Khasimuddin and DeBach, 1975. Ent. Soc. Amer., Ann. 68 (5): 893-896.

melanostictus Compere. Calif. Host: *Quadraspidiotus juglansregiae* (Comst.).

Aphytis melanostictus Compere, 1955. Calif. Univ., Pubs. Ent. 10 (4): 278, 287. ♂, ♀.

melinus DeBach. Calif. Host: *Aonidiella aurantii* (Mask.), *A. citrina* (Coq.) (in lab.), *Diaspis echinocacti* (Bouche) (in lab.), *Hemiberlesia lataniae* (Sign.).

Aphytis melinus DeBach, 1959. Ent. Soc. Amer., Ann. 52 (4): 359, 361-362. ♂, ♀.

Taxonomy: Quednau, 1964. So. Africa Ent. Soc., Jour. 27 (1): 93 (key), 114-115. — Quednau, 1965. So. Africa Agr. Sci., Jour. 8: 43-56. — Rao and DeBach, 1969. Hilgardia 39 (19): 515-567.

Biology: DeBach and Landi, 1959. Calif. Agr. 13: 9. — DeBach and Sundby, 1963. Hilgardia 34 (5): 105-166. — Quednau, 1964. So. Africa Agr. Sci., Jour. 7: 335-340. — Huffaker, 1971. Biol. Control, pp. 75, 89, 120, 180, 184-186, 188, 190, 464. — Sternlicht, 1973. Entomophaga 18 (4): 339-342. — McLaren and Buchanan, 1973. Austral. Jour. Zool. 21 (1): 111-117. — Abdelrahman, 1974. Austral. Jour. Zool. 22 (2): 203-247.

mytilaspidis (LeBaron). Cosmopolitan. Host: *Aspidiotus nerii* Bouche, *Aulacaspis rosae* (Bouche), *Carulaspis juniperi* (Bouche), *Chionaspis furfura* (Fitch), *C. salicisnigrae* (Walsh), *C. heterophyllae* Cooley, *C. pinifoliae* (Fitch), *Dynaspidiotus britannicus* (Newst.), *Lepidosaphes ulmi* (L.), *Lepidosaphes* sp. on *Ptelea trifoliata*, *Parlatoria blanchardi* (Targ.-Tozz.), *Pinnaspis aspidistrae* (Sign.), *Quadraspidiotus juglansregiae* (Comst.), *Q. ostraeiformis* (Curt.), *Q. perniciosus* (Comst.). *Aphytis mytilaspidis* is noteworthy in that it has an arrhenotokous and a thelytokous form. Moreover, Rossler and DeBach (1973) have shown that thelytokous females are capable of utilizing sperm of males from an arrhenotokous population.

Aphelinus mytilaspidis LeBaron, 1870. Amer. Ent. and Bot. 2: 360. ♀.

Taxonomy: Compere, 1955. Calif. Univ., Pubs. Ent. 10 (4): 309-310. — DeBach and Azim, 1962. Mushi 36 (1): 1-8. — Rossler and DeBach, 1972. Entomophaga 17 (4): 391-423. — Rossler

and DeBach, 1972. *Entomophaga* 17 (4): 425-435. — Khasimuddin and DeBach, 1976. *Entomophaga* 21 (1): 113-122.

Biology: Imms, 1916. *Quart. Jour. Micros. Sci.* 61: 218-272. — Griswold, 1925. N. Y. (Cornell) Agr. Expt. Sta., Mem. 93: 44-47. — Essig, 1931. *Hist. of Ent.*, p. 339. — Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, p. 31. — Flanders, 1957. *Jour. Econ. Ent.* 50 (2): 171-172. — Flanders, 1960. *Jour. Econ. Ent.* 53 (5): 757-758. — Tadic, 1961. *Arh. za Poljopriv. Nauke* 14: 188. — Chumakova, 1961. *Ent. Rev.* 40 (2): 170-179. — Sorokina, 1971. *Ent. Rev.* 50 (3): 312, 315, 316. — Rossler and DeBach, 1973. *Hilgardia* 42 (5): 149-176. — Khasimuddin and DeBach, 1975. *Ent. Soc. Amer.*, Ann. 68 (5): 893-896.

proelia (Walker). Cosmopolitan. Host: *Aonidiella aurantii* (Mask.), *Aspidiotus destructor* Sign., *A. nerii* Bouche, *Aulacaspis rosae* (Bouche), *Chrysomphalus aonidum* (L.), *C. dictyospermi* (Morg.), *Diaspidiotus uvae* (Comst.), *Diaspis bromeliae* (Kern.), *D. echinocacti* (Bouche), *Hemiberlesia rapax* (Comst.), *Lepidosaphes beckii* (Newm.), *L. gloveri* (Pack.), *L. ulmi* (L.), *Pinnaspis strachani* (Cooley), *Pseudonidia duplex* (Ckll.), *Pseudaulacaspis pentagona* (Targ.-Tozz.), *Quadraspidotus juglansregiae* (Comst.), *Unaspis euonymi* (Comst.). *Aphytis proelia* probably has been misidentified often and in fact morphological entities previously assigned to *proelia* constitute a sibling species complex.

Aphelinus Proelia Walker, 1839. *Monog. Chalcid. v. 1*, pp. 9-10. ♀.

Aphelinus fuscipennis Howard, 1881. U. S. Dept. Agr., Ann. Rpt. for 1880, p. 356. ♀.

Taxonomy: De Santis, 1948. *La Plata Mus. Rev. Zool. (n. s.)* 5: 133-138. — Compere, 1955. *Calif. Univ. Pubs. Ent.* 10 (4): 278, 287. — DeBach, 1959. *Ent. Soc. Amer.*, Ann. 52 (4): 358. — Chumakova, 1960. *Leningr. Vsesoi. Inst. Zash. Rast.*, Trudy 15: 57. — Chumakova, 1961. *Leningr. Vsesoi. Inst. Zash. Rast.*, Trudy 15: 316.

Biology: Smith, 1897. N. J. Agr. Expt. Sta., Ann. Rpt. 17: 483-519. — Quayle, 1911. *Calif. Agr. Expt. Sta.*, Bul. 214: 463-466. — Essig, 1931. *Hist. of Ent.*, pp. 339-341. — Chumakova, 1961. *Ent. Rev.* 40 (2): 171-179. — Goryunova, 1964. *Trudy VIZR* 22 (1): 40-55. — Sumaroka, 1967. *Ent. Rev.* 46 (2): 179-185. — Sorokina, 1971. *Ent. Rev.* 50 (3): 311-312.

Genus CENTRODORA Foerster

Centrodora Foerster, 1878. *Naturh. Ver. Rheinlande, Verh.* 35: 66.

Type-species: *Centrodora amoena* Foerster. Monotypic.

Paraphelinus Perkins, 1906. *Hawaii. Sugar Planters' Assoc. Expt. Sta.*, Div. Ent., Bul. 1 (8): 264.

Type-species: *Paraphelinus ziphidi* Perkins. Monotypic.

Proaphelinoides Girault, 1917. *Descr. Stellarum Nov.*, p. 4.

Type-species: *Proaphelinoides elongatiformis* Girault. Orig. desig.

Microeupelmus Otten, 1941. *Arb. Morph. Taxon. Ent.* 8 (4): 259.

Type-species: *Microeupelmus acridiphagus* Otten. Orig. desig.

Pechlaneria Soyka, 1948. *Ent. Nachr.* 2 (7): 46.

Type-species: *Pechlaneria alpina* Soyka. Orig. desig.

Centrodora is a cosmopolitan genus containing approximately 30 species. The species of *Centrodora* attack Orthoptera and Homoptera eggs, but at least one species is purported to parasitize Diptera and other Hymenoptera. A host-parasite catalog of *Centrodora* has been prepared by Hayat, 1974.

Taxonomy: Mercet, 1918. *Soc. Espan. Hist. Nat.*, Bol. 18: 103-109. — Mercet, 1930. *Eos* 6 (4): 287-295. — Annecke, 1965. *So. Africa Agr. Sci.*, Jour. 8: 1133-1138. — Valentine, 1966. *New Zealand Jour. Sci.* 9: 331-335. — Hayat, 1973. *Entomophaga* 18 (1): 41-46. — Hayat, 1974. *Polski Pismo Ent.* 44 (2): 287-298 (host-parasite catalog). — Graham, 1976. *Syst. Ent.* 1 (2): 135-136.

speciosissima (Girault). N. Y. s. to Va., w. to Ky., Ill. Host: *Conocephalus fuscus* (F.),

Conocephalus sp., *Phytophaga destructor* (Say), *Harmolita tritici* (Fitch), *Platygaster zosine* Walk.

Agonioneurus locustarum Giraud, 1863. *Zool.-Bot. Gesell. Wien, Verhandl.* 13: 1278-1279.

♂, ♀. Questionable synonym.

Paraphelinus speciosissimus Girault, 1911. N. Y. Ent. Soc., Jour. 19 (3): 181-182. ♀.

Taxonomy: Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 124-128. —Erdos, 1958. Folia Ent. Hungarica 6: 165-184. —Nikol'skaya and Yashnosh, 1966. Opred. Fauny SSSR 91, pp. 156-161.

Biology: McConnell, 1916. Ent. Soc. Amer., Ann. 9 (1): 97-102. —Hill and Smith, 1928. Jour. Agr. Res. 36 (2): 153-155.

Morphology: Hill and Pinckney, 1940. U. S. Dept. Agr., Tech. Bul. 715: 5, 11-13.

Genus MARIETTA Motschulsky

Marietta Motschulsky, 1863. Soc. Nat. Imp. Moscou, Bul. 36 (2): 51.

Type-species: *Marietta leopardina* Motschulsky. Monotypic.

Perissopterus Howard, 1895. U. S. Dept. Agr., Div. Ent., Tech. Ser. 1: 20.

Type-species: *Aphelinus pulchellus* Howard. Orig. desig.

Pseudaphelinus Brethes, 1918. Soc. Rural Argentina, An. 53: 157.

Type-species: *Pseudaphelinus caridei* Brethes. Monotypic.

Paraphytis Compere, 1925. Amer. Ent. Soc., Trans. 51 (871): 129-130.

Type-species: *Paraphytis vittata* Compere. Orig. desig.

This cosmopolitan genus contains approximately 35 species. Most, if not all, are external hyperparasites associated with scale insects.

Taxonomy: Compere, 1936. Calif. Univ., Pubs. Ent. 6 (12): 277-322. —Nikol'skaya and Jashnosh, 1966. Opred. Fauny SSSR 91: 162-166. —Annecke and Insley, 1972. So. Africa Ent. Soc., Jour. 35 (1): 1-15.

carnesi (Howard). Del. s. to Va., Calif. Host: *Comperiella bifasciata* How. on *Lepidosaphes beckii* (Newm.) and *Quadraspidiotus perniciosus* (Comst.), *Plagiomerus diaspidis* Crawford on *Diaspis echinocacti* (Bouche).

Perissopterus carnesi Howard, 1910. Ent. News 21 (4): 162-163. ♀.

Biology: Azim, 1961. Mushi 35 (14): 107.

graminicola Timberlake. Md. s. to Fla., w. to Tex. Host: *Anagyrus antoninae* Timb. on unknown host.

Marietta graminicola Timberlake, 1925. Hawaii. Ent. Soc., Proc. 6 (1): 180-184. ♂, ♀.

Biology: Dean and Schuster, 1958. Jour. Econ. Ent. 51 (3): 364.

javensis (Howard). Calif.? Adventive, establishment questionable. Host: *Coccophagus lycimnia* (Wlkr.), *Microterys flavus* (Howard).

Perissopterus javensis Howard, 1907. U. S. Dept. Agr., Bur. Ent., Tech. Ser. 12 (4): 87, 88. ♂, ♀.

Biology: Timberlake, 1913. Jour. Econ. Ent. 6 (3): 300.

mexicana (Howard). N. Y. s. to Va., Calif. Host: *Metaphycus lounsburyi* How., *Signiphora merceti* Malen. Also on undetermined parasites of *Coccus hesperidum* L., *Lecanium nigrofasciatum* Perg., *Lepidosaphes ulmi* (L.), *Quadraspidiotus perniciosus* (Comst.).

Perissopterus mexicanus Howard, 1895. U. S. Dept. Agr., Div. Ent., Tech. Ser. 1: 21-23. ♂, ♀.

Biology: Smith, 1933. Ent. Soc. Amer., Ann. 26 (3): 525. —Essig, 1931. Hist. of Ent., pp. 348, 349, 354. —Flanders, 1940. Ent. Soc. Amer., Ann. 33 (2): 252. —Cox, 1942. Jour. Econ. Ent. 35 (5): 700-701. —DeBach et al. 1958. Jour. Econ. Ent. 51 (1): 115.

pulchella (Howard). Cosmopolitan. Ecology: Attacking undetermined parasites on *Chionaspis americana* Johns., *C. pinifoliae* (Fitch), *Lecanodiaspis* sp. on cottonwood and willow, *Pseudaulacaspis pentagona* (Targ.-Tozz.), *Quadraspidiotus forbesi* (Johns.), *Q. juglansregiae* (Comst.), *Q. perniciosus* (Comst.).

Aphelinus pulchellus Howard, 1881. U. S. Dept. Agr., Ann. Rpt. for 1880, p. 356. ♀.

Biology: Felt, 1916. N. Y. State Mus. Bul. 180: 84. —Peterson, 1962. Canad. Ent. 94 (4): 740. —Willoughby and Kosztarab, 1974. Va. Polytech. Inst. St. Univ., Res. Div. Bul. 92: 24.

Genus MARLATTIELLA Howard

Marlattella Howard, 1907. U. S. Dept. Agr., Bur. Ent., Tech. Ser. 12: 73.

Type-species: *Marlattella prima* Howard. Orig. desig.

This genus is presently monotypic and widespread. The type-species attacks pear white scale.

Taxonomy: Rosen and DeBach, 1970. Mushi 43 (3): 39-44.

prima Howard. Md. Host: *Lopholeucaspis japonica* (Ckll.).

Marlattella prima Howard, 1907. U. S. Dept. Agr., Bur. Ent., Tech. Ser. 12: 73.

Taxonomy: Tachikawa, 1962. Shikoku Ent. Soc., Trans. 7 (3): 74-79. —Nikol'skaya and Jashnosh, 1966. Opređ. Fauny SSSR 91: 150.

Biology: Compere, 1936. Calif. Univ., Pubs. Ent. 6 (12): 279-281.

Genus MESIDIA Foerster

Mesidia Foerster, 1856. Hym. Stud., v. 2, p. 30. No species included.

Type-species: *Mesidia pumila* Mayr. Subsequent monotypy.

This small Holarctic genus is composed of primary internal aphid parasites.

Foerster (1856) described *Mesidia* in a key but did not include any species. Subsequently, Mayr (1904) described *M. pumila* which was the first and only included species. Mercet (1928) indicated and Nowicki (1929) suggested that *pumila* was a junior synonym of *Myina annulipes* Walker. Graham (1961) was unable to find the type-specimen of *annulipes*, but on the basis of three collections of specimens agreeing with Walker's original description, Nowicki's examination of the type of *pumila*, and Mercet's illustration of the male antenna of the specimen thought to be *annulipes*, Graham concluded the two were synonymous.

Taxonomy: Mercet, 1928. Soc. Espan. Hist. Nat., Bol. 28: 507-512. —Nowicki, 1929. Neue Beitr. Syst. Insektenk. 4 (13-14): 160. —Graham, 1961. Ent. Monthly Mag. 97 (1164-1166): 140-142. —Ferriere, 1962. Schweiz. Ent. Gesell., Mitt. 35 (1-2): 139-143. —Ferriere, 1965. Faune l'Europe Bassin Medit. 1: 52-56. —Nikol'skaya and Jashnosh, 1966. Opređ. Fauny SSSR 91: 153-156. —Graham, 1976. Syst. Ent. 1 (2): 143.

gillettei Howard. Ill., Colo. Host: *Brachycolus tritici* Gill.

Mesidia gillettei Howard, 1914. Ent. Soc. Wash., Proc. 16 (2): 80. ♀.

Taxonomy: Dozier, 1933. Ent. Soc. Wash., Proc. 35 (6): 90-91.

nigra Lagace. Calif. Introduced. Host: *Iziphya punctata* Hille Ris Lamb.

Mesidia nigra Lagace, 1969. Ent. Soc. Amer., Ann. 62 (3): 530-531. ♂, ♀.

Biology: Lagace, 1969. Ent. Soc. Amer., Ann. 62 (3): 532-536.

Genus TUMIDISCAPUS Girault

Tumidiscapus Girault, 1911. N. Y. Ent. Soc., Jour. 19 (3): 182.

Type-species: *Tumidiscapus flavus* Girault. Orig. desig.

Six species of *Tumidiscapus* have been described, with 4 from North America. The North American species attack tettigoniid and cercopid eggs.

Taxonomy: Gahan, 1932. Ent. Soc. Amer., Ann. 25 (4): 740-742. —Milliron, 1947. Ent. Soc. Wash., Proc. 49 (7): 193-197. —Hayat, 1974. Polski Pismo Ent. 44 (2): 294-295 (catalog).

cercopiphagus Milliron. Fla., Mich., Wis. Host: *Aphrophora saratogensis* (Fitch).

Tumidiscapus cercopiphagus Milliron, 1947. Ent. Soc. Wash., Proc. 49 (7): 193-195. ♂, ♀.

flavus Girault. Pa. w. to S. Dak., Tenn. Host: *Orchelimum vulgare* Harris, *Phytophaga destructor* (Say), *Lasiopoda* sp. on *Muhlenbergia*.

Tumidiscapus flavus Girault, 1911. N. Y. Ent. Soc., Jour. 19 (3): 182-183. ♂.

orchelimumsis Gahan. Pa., Va., Ill. Host: *Orchelimum vulgare* Harris.

Tumidiscapus orchelimumsis Gahan, 1932. Ent. Soc. Amer., Ann. 25 (4): 741-742. ♂, ♀.

orthopterae Gahan. Fla. Host: Tettigoniid eggs on *Andropogon abbreviatus*.

Tumidiscapus orthopterae Gahan, 1919. U. S. Natl. Mus., Proc. 55: 406-407. ♂, ♀.

TRIBE COCCOPHAGINI

Genus ABLERUS Howard

Ablerus Howard, 1894. U. S. Dept. Agr., Insect Life 7 (1): 7-8.

Type-species: *Centrodora clisiocampae* Ashmead. Monotypic.

Ablerus has about 35 species, is predominantly Australian in distribution, and is composed of hyperparasites.

Taxonomy: Girault, 1913. Queensland Mus., Mem. 2: 189-194. —Girault, 1932. New Pests from Australia (priv. pub., no page numbers). —De Santis, 1948. La Plata Mus. Rev. Zool. (n. s.) 5 (32): 198-212 (So. Amer. spp.). —Annecke and Insley, 1970. Bul. Ent. Res. 60 (2): 247-248.

Biology: Comber, 1967. New Zeal. Jour. Sci. 10 (3): 641.

americanus Girault. D. C. Host: *Diaspidiotus uvae* (Comst.).

Ablerus americanus Girault, 1916. Soc. Ent. 31 (8): 44. ♀.

clisiocampae (Ashmead). N. Y. s. to Fla., w. to La., Minn. Host: *Chionaspis furfura* (Fitch), *Melanaspis obscura* Comst., *Pseudaulacaspis pentagona* (Targ.-Tozz.), *Quadraspidotus forbesi* (Johns.), *Q. perniciosus* (Comst.).

Centrodora clisiocampae Ashmead, 1894. Ent. Soc. Wash., Proc. 3 (1): 10. ♀.

Biology: Baker, 1933. U. S. Dept. Agr., Cir. 295: 8-9. —Hodson, 1939. Ent. Soc. Amer., Ann. 32 (1): 131-136. —Hughes, 1960. Fla. Ent. 43 (2): 90-92.

perspiciosus Girault. D. C. Host: *Chrysomphalus aonidium* (L.), *Pseudaulacaspis pentagona* (Targ.-Tozz.).

Ablerus perspiciosus Girault, 1916. Ent. Soc. Amer., Ann. 9 (3): 292. ♀.

Azotus silvestrii Compere, 1926. Calif. Univ., Pubs. Ent. 4 (1): 9-11. ♀.

Genus ANERISTUS Howard

Aneristus Howard, 1895. Canad. Ent. 27 (12): 351.

Type-species: *Aneristus ceroplastae* Howard. Monotypic.

Aneristus is a pantropical genus predominantly found in South America and Africa. It is composed of less than 20 species that are internal parasites of soft-scale insects.

Taxonomy: Dozier, 1932. Puerto Rico Dept. Agr., Jour. 16 (2): 94-102. —Compere, 1936. Calif. Univ., Pubs. Ent. 6 (2): 285-288 (key). —Ghesquiere, 1949. Soc. Ent. de Belg., Bul. et Ann. 85 (5-6): 156-167 (catalog).

ceroplastae Howard. La. w. to Calif. Host: *Coccus hesperidum* L., *C. pseudomagnoliarum* (Kuw.), *Saissetia coffeae* (Walk.).

Aneristus ceroplastae Howard, 1895. Canad. Ent. 27 (2): 351. ♀.

Coccophagus orientalis Howard, 1896. U. S. Natl. Mus., Proc. 18: 633-634. ♀.

Taxonomy: Gahan, 1924. U. S. Natl. Mus., Proc. 64 (4): 13-14.

Biology: Smith and Compere, 1928. Calif. Univ., Pubs. Ent. 4 (9): 242, 246-247.

youngi Girault. La., Tex. Host: *Ceroplastes* sp. on *Chrysanthemum*, *Coccus hesperidum* L., *Saissetia coffeae* (Walk.).

Aneristus(!) *youngi* Girault, 1917. Descr. Hym. Chalcidoid. Variorum Cum Observ. V, p. 11.

Genus ASPIDIOTIPHAGUS Howard

Aspidiotiphagus Howard, 1894. U. S. Dept. Agr., Insect Life 6 (3): 230.

Type-species: *Coccophagus citrinus* Craw. Monotypic.

Prospaltoides Brethes, 1914. Nunquam Otiosus, Buenos Aires, p. 12.

Type-species: *Prospaltoides howardi* Brethes. Monotypic. Considered a synonym of *citrinus* Craw.

Aspidiotiphagus is comprised of fewer than 10 species. It is cosmopolitan in distribution, and its members are internal primary parasites of armored-scale insects.

Taxonomy: Paoli, 1926. Soc. Ent. Ital., Bol. 58: 97-105. —Dozier, 1927. Puerto Rico Dept. Agr., Jour. 10 (3-4): 274-277. —Mercet, 1930. Rev. de Biol. y Forest. Limnologia 2 (B): 69-72. —Compere, 1936. Calif. Univ., Pubs. Ent. 6 (12): 294-295. —Alam, 1956. Roy. Ent. Soc. London, Trans. 108 (8): 359-363.

citrinus agilius Berlese. Va., Fla. Host: *Unaspis euonymi* (Comst.).

Aspidiotiphagus citrinus var. *agilius* Berlese, 1916. Redia 12 (1): 5, 7, 10. ♀.

citrinus citrinus (Craw). Cosmopolitan. Host: *Aonidiella aurantii* (Mask.), *A. citrina* (Coq.), *Aspidiotus destructor* Sign., *A. nerii* Bouche, *Carulaspis visci* (Schrank), *Chionaspis pinifoliae* (Fitch), *Chrysomphalus aonidum* (L.), *C. dictyospermi* (Morg.), *Coccus hesperidum* L., *Diaspidiotus ancyclus* (Putn.), *Dynaspidiotus britannicus* (Newst.), *Diaspis bromeliae* (Kern.), *D. echinocacti* (Bouche), *Kucanaspis hikosani* (Kuw.), *Lepidosaphes beekii* (Newm.), *L. ulmi* (L.), *Melanaspis tenebricosa* (Comst.), *Nuculaspis californica* (Col.), *Parlatoria oleae* (Colv.), *P. pergandii* Comst., *Pinnaspis aspidistrae* (Sign.), *P. strachani* (Cooley), *Pseudonidia duplex* (Ckll.), *Pseudaulacaspis pentagona* (Targ.-Tozz.). The morphological form called *citrinus* may consist of sibling species.

Coccophagus citrinus Craw, 1891. Calif. State Bd. Hort., Bul. 57: 5.

Prospaltoides howardi Brethes, 1914. Nunquam Otiosus, Buenos Aires, pp. 13-14.

Taxonomy: Howard, 1894. U. S. Dept. Agr., Insect Life 6 (3): 229-230.

Biology: Howard, 1895. U. S. Dept. Agr., Div. Ent., Tech. Ser. 1: 7, 31. —Isaac, 1905. Calif. State Comm. Hort., Bien. Rpt. 1: 95. —Essig, 1931. Hist. of Ent., pp. 341-342, 386.

—Benassy, 1958. Entomophaga 3 (2): 104. —Hughes, 1960. Fla. Ent. 43 (2): 90-92.

—Benassy, 1961. Ann. des Epiphyt. 12 (C): 42. —Chumakova, 1965. Ent. Rev. 44 (3): 305-308. —Sorokina, 1971. Ent. Rev. 50 (3): 313-316. —Brewer, 1971. Austral. Jour. Zool. 19 (1): 53-63. —Huffaker, 1971. Biol. Control, pp. 48, 49, 78. —DeBach, 1974. Biol. Control by Nat. Enem., p. 133.

Morphology: Parker and Thompson, 1925. Ent. Soc. Amer., Ann. 18 (3): 387.

lounsburyi (Berlese and Paoli). Fla. Host: *Aonidiella aurantii* (Mask.), *Chrysomphalus aonidum* (L.), *C. dictyospermi* (Morg.).

Prospaltella lounsburyi Berlese and Paoli, 1916. Redia 11 (1-2): 305.

Taxonomy: Muma, 1959. Jour. Econ. Ent. 52 (4): 579. —Annecke, 1963. So. Africa Ent. Soc., Jour. 26 (1): 206.

Biology: Mathis, 1947. Fla. Ent. 29 (2-3): 33.

Genus AZOTUS Howard

Azotus Howard, 1898. Ent. Soc. Wash., Proc. 4 (2): 138.

Type-species: *Azotus marchali* Howard. Monotypic. Considered a synonym of *Encyrtus atomon* Walker.

Dimacrocerus Brethes, 1914. Nunquam Otiosus, Buenos Aires, p. 4.

Type-species: *Dimacrocerus platensis* Brethes. Orig. desig.

Azotus is a cosmopolitan genus consisting of fewer than 30 species that are usually hyperparasites of armored-scale insects, whiteflies, and possibly beetles and cicada eggs according to Nikol'skaya (1952).

Taxonomy: Mercet, 1923. Soc. Espan. de Hist. Nat., Bol. 23 (9): 410-413. —Nowicki, 1926. Polsk Pismo Ent. 5 (1-2): 104-113 (Palearctic key). —Ferriere, 1927. Rev. Suisse de Zool. 34 (2): 57-59. —Alam, 1956. Roy. Ent. Soc. London, Trans. 108 (8): 358, 376-379. —Agarwal, 1964. Indian Acad. Sci., Proc. (B) 60: 326-331. —Annecke and Insley, 1970. Bul. Ent. Res. 60 (2): 237-247. —De Santis, 1974. Rev. Chilena Ent. 8 (1): 11-15 (argentinean spp.).

Biology: Nikol'skaya, 1952. Chalcid Fauna of USSR p. 295 (English translation 1963; p. 301).

americanus Dozier. Del. Host: *Lecanium corni* Bouche, *Lepidosaphes ulmi* (L.), *Quadraspidiotus perniciosus* (Comst.).

Azotus americanus Dozier, 1928. Ent. Soc. Wash., Proc. 30 (2): 36. ♂.

marchali Howard. D. C., Md., Va. Host: *Diaspidiotus uvae* (Comst.).

Azotus marchali Howard, 1898. Ent. Soc. Wash., Proc. 4 (2): 138-139. ♂.

Genus COCCOPHAGOIDES Girault

Coccophagoides Girault, 1915. Queensland Mus., Mem. 4: 58.

Type-species: *Coccophagus abnormicornis* Girault. Orig. desig.

Diaspiniphagus Silvestri, 1927. Lab. Zool. Gen. e Agr. Portici, Bol. 20: 35-36.

Type-species: *Prospalta similis* Masi. Orig. desig.

This genus consists of less than 10 species. One species, *C. utilis* Doutt, acts in concert with *Aphytis maculicornis* (Masi) to achieve biological control of the olive scale, *Parlatoria oleae* (Colv.), in California. This is an excellent example of multiple parasite importation success.

Taxonomy: Mercet, 1928. Soc. Espan. de Hist. Nat., Bol. 28: 511-512. — Nowicki, 1929. Neue Beitr. Syst. Insektenk. 4 (13-14): 158. — Compere, 1936. Calif. Univ., Pubs. Ent. 6 (12): 292-293. — Doutt, 1966. Hilgardia 37 (9): 219-231.

Biology: Broodryk and Doutt, 1966. Hilgardia 37 (9): 233-254. — Finney, 1966. Hilgardia 37 (9): 337-343. — Kennett *et al.*, 1966. Hilgardia 37 (9): 255-282. — van den Bosch and Messenger, 1973. Biol. Control, pp. 39, 110, 111. — DeBach, 1974. Biol. Control by Nat. Enem., pp. 171, 204.

fuscipennis (Girault). Ill. Host: *Melanaspis obscura* (Comst.). Transferred from *Prospaltella* Ashmead, teste H. Compere (*in litt.*).

Prospaltella fuscipennis Girault, 1908. Psyche 15 (6): 120-121. ♀.

Biology: Baker, 1933. U. S. Dept. Agr., Cir. 295: 8-9.

kuwanae (Silvestri). Conn. s. to N. J., w. to Ohio, Calif. Host: *Pseudaulacaspis pentagona* (Targ.-Tozz.), *Quadraspidiotus perniciosus* (Comst.).

Diaspiniphagus Kuwanae Silvestri, 1927. Lab. Zool. Gen. e Agr. Portici, Bol. 20: 39-41. ♀.

Taxonomy: Compere, 1936. Calif. Univ., Pubs. Ent. 6 (12): 293. — Doutt, 1966. Hilgardia 37 (9): 223, 224, 226.

Biology: Flanders, 1960. Jour. Econ. Ent. 53 (5): 757.

similis (Masi). Cosmopolitan. Host: *Diaspidiotus viticola* (Leon.), *Quadraspidiotus ostreaefornis* (Curt.), *Q. perniciosus* (Comst.), *Targionia vitis* (Sign.).

Prospalta similis Masi, 1908. Lab. Zool. Gen. e Agr. Portici, Bol. 3: 148-149. ♀.

Prospaltella ilicis Mercet, 1921. Soc. Espan. de Hist. Nat. Tomo 50 Aniv., pp. 304-305, 308. ♀.

Taxonomy: Silvestri, 1927. Lab. Zool. Gen. e Agr. Portici, Bol. 20: 36-38 (redescribed in *Diaspiniphagus*). — Flanders, 1960. Jour. Econ. Ent. 53 (5): 757 (distribution).

utilis Doutt. Calif. Host: *Parlatoria oleae* (Colv.).

Coccophagoides utilis Doutt, 1966. Hilgardia 37 (9): 224-226. ♂, ♀.

Biology: Broodryk and Doutt, 1966. Hilgardia 37 (9): 233-254. — Kennett *et al.*, 1966. Hilgardia 37 (9): 255-282. — Huffaker and Kennett, 1966. Hilgardia 37 (9): 283-335. — DeBach, 1974. Biol. Control by Nat. Enem., pp. 171, 204.

Genus COCCOPHAGUS Westwood

Coccophagus Westwood, 1833. London, Edinb. and Dublin Phil. Mag. and Jour. Sci. 3 (3): 344.

Type-species: *Entedon scutellaris* Dalman. Desig. by Westwood, 1840.

Paracharitopus Brethes, 1913. Buenos Aires Mus. Nac. de Hist., Nat., An. 24: 105.

Type-species: *Paracharitopus lecanii* Brethes. Monotypic.

Onophilus Brethes, 1918. Soc. Rural Argentina, An. 53: 155.

Type-species: *Onophilus caridei* Brethes. Monotypic.

Parencarsia Mercet, 1930. Eos 6 (2): 198.

Type-species: *Coccophagus krygeri* Mercet. Orig. desig.

Coccophagus contains about 140 species and is worldwide in distribution. Some species have been important in biological control of lecaniine coccids.

- Taxonomy: Girault, 1915. Queensland Mus., Mem. 4: 55-57. — Mercet, 1928. Soc. Espan. de Hist. Nat., Bol. 28: 509-510. — Mercet, 1930. Rev. de Biol. Forest. y Limnologia Ser. B 2: 87-91. — Compere, 1931. U. S. Natl. Mus., Proc. 78 (7): 1-132. — Mercet, 1931. Eos 7 (4): 399-410. — Compere, 1940. Hilgardia 13 (7): 395-405. — Risbec, 1952. Madagascar Inst. Sci., Mem. 2 (E): 152. — Alam, 1956. Roy. Ent. Soc. London, Trans. 108 (8): 363-367.
- Tachikawa, 1957. Japanese Jour. Appl. Ent. Zool. 1 (1): 61-64. — Sugonyayev and Chung-yun, 1960. Ent. Rev. 39 (3): 503-507. — Agarwal, 1964. Indian Acad. Sci., Proc. (B) 59: 267-274. — Yoshimoto, 1965. Pacific Insects 7 (4): 699. — Hayat, 1971. Entomophaga 16 (4): 421-432. — Hayat, 1974. Jour. Nat. Hist. 8: 179-186. — Hayat, 1974. Oriental Insects 8 (3): 291-297. — Graham, 1976. Syst. Ent. 1 (2): 137-142.
- Biology: Flanders, 1936. Science 83 (2160): 499. — Flanders, 1936. Jour. Econ. Ent. 29 (3): 468. — Flanders, 1936. Ent. Soc. Amer., Ann. 29 (2): 251-255. — Zinna, 1961. Lab. Ent. Agr. Portici, Bol. 19: 303-317. — Flanders, 1953. Ent. Soc. Amer., Ann. 47 (1): 87.
- albicoxa** Howard. Calif. Host: *Physokermes insignicola* (Craw), *Toumeyella parvicornis* (Ckll.), *T. pinicola* Ferris.
- Coccophagus albicoxa* Howard, 1911. Jour. Econ. Ent. 4 (2): 276. ♀.
- Coccophagus coralix* Girault, 1916. Ent. News 27 (1): 34-35. ♀.
- anthracinus** Compere. Calif. Introduced from S. Africa, possibly established. Host: *Saissetia oleae* (Oliv.).
- Coccophagus anthracinus* Compere, 1925. Calif. Univ., Pubs. Ent. 3 (3): 309-311. ♀.
- Taxonomy: Compere, 1931. U. S. Natl. Mus., Proc. 78 (7): 26. — Compere, 1940. Hilgardia 13 (7): 397, 401.
- baldassarii** Compere. Calif. Introduced, possibly established. Host: *Saissetia oleae* (Oliv.).
- Coccophagus baldassarii* Compere, 1931. Calif. Univ., Pubs. Ent. 5 (12): 251-252. ♀.
- capensis** Compere. Calif. Host: *Parasaissetia nigra* (Nietn.), *S. oleae* (Oliv.). *Coccophagus modestus* of American authors, not Silvestri.
- Coccophagus modestus* var. *capensis* Compere, 1931. U. S. Natl. Mus., Proc. 78 (7): 83.
- Biology: Smith and Compere, 1926. Calif. Univ., Pubs. Ent. 4 (3): 51-61. — Essig, 1931. Hist. of Ent., pp. 346, 386. — Flanders, 1936. Jour. Econ. Ent. 29 (2): 468. — Cendana, 1937. Calif. Univ., Pubs. Ent. 6 (14): 390-396. — Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, p. 93.
- caridei** (Brethes). Calif. Introduced, possibly established. Host: *Coccus hesperidum* L., *C. pseudomagnoliarum* (Kuw.), *Planococcus citri* (Risso), *Saissetia hemisphaerica* (Targ.-Tozz.), *S. oleae* (Oliv.).
- Onophilus Caridei* Brethes, 1918. Soc. Rural Argentina, An. 52: 156.
- Coccophagus heteropneusticus* Compere, 1939. Calif. Univ., Pubs. Ent. 7 (5): 83-84. ♂, ♀.
- Biology: Flanders, 1939. Jour. Econ. Ent. 32 (6): 888-890. — Flanders, 1942. Jour. Econ. Ent. 35 (5): 687. — Flanders, 1949. Canad. Ent. 81 (11): 261.
- cinguliventris** Girault. Md. w. to Ill., Wis. Host: *Lecanium corni* Bouche, *L. nigrofasciatum* Perg.
- Coccophagus cinguliventris* Girault, 1909. Psyche 16 (4): 79-80. ♀.
- Taxonomy: Girault, 1916. Ent. Soc. Amer., Ann. 9 (3): 297-298 (male described).
- cowperi** Girault. Tex. w. to Calif. Host: *Saissetia oleae* (Oliv.), *Coccus hesperidum* L., *Parasaissetia nigra* (Nietn.).
- Coccophagus cowperi* Girault, 1917. Descr. Stellarum Nov., p. 1. ♀.
- Taxonomy: Gahan, 1927. U. S. Natl. Mus., Proc. 71 (4): 24-25. — Masi, 1907. Lab. Zool. Gen. e Agr. Portici, Bol. 1: 239-243 (misident. as *flavoscutellum* Ashm.). — Compere, 1931. U. S. Natl. Mus., Proc. 78 (7): 57, 60. — Flanders, 1953. Ent. Soc. Amer., Ann. 46 (1): 90-91. — Alam, 1956. Ent. Soc. London, Trans. 108 (8): 363-364.
- Biology: Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, p. 94. — Flanders, 1959. Jour. Econ. Ent. 52 (4): 597.
- eleaphilus** Silvestri. Calif. Host: *Saissetia oleae* (Oliv.).
- Coccophagus eleaphilus* Silvestri, 1915. Lab. Zool. Gen. e Agr. Portici, Bol. 9: 318-320. ♂, ♀.

- eritreensis* Compere. Calif. Introduced. Host: *Coccus pseudomagnoliarum* (Kuw.), *Saissetia oleae* (Oliv.).
Coccophagus eritreensis Compere, 1931. Calif. Univ., Pubs. Ent. 5 (12): 254. ♂, ♀.
 Biology: Flanders, 1959. Jour. Econ. Ent. 52 (4): 597.
- flavifrons* Howard. Pa. s. to Fla., w. to Tex. Host: *Chionaspis pinifoliae* (Fitch), *Coccus hesperidum* L., *Lecanium* sp. on *Pinus palustris*, *Toumeyella liriodendri* (Gmel.).
Coccophagus flavifrons Howard, 1885. U. S. Dept. Agr., Bur. Ent., Bul. 5: 25. ♂.
Coccophagus koebeli Howard, 1885. U. S. Dept. Agr., Bur. Ent., Bul. 5: 25. ♂.
- fletcheri* Howard. N. Y. Host: *Lecanium fletcheri* Kkll.
Coccophagus fletcheri Howard, 1897. U. S. Dept. Agr., Div. Ent., Bul. (n. s.) 7: 63. ♀.
- fraternus* Howard. N. Y. s. to Fla., w. to Mich., Colo. Host: *Lecanium nigrofasciatum* Perg., *L. persicae* (F.), *Pulvinaria acericola* (W. and R.).
Coccophagus fraternus Howard, 1881. U. S. Dept. Agr., Ann. Rept. for 1880, p. 359. ♀.
Coccophagus fuscipes Howard, 1881. U. S. Dept. Agr., Ann. Rept. for 1880, p. 359. ♂, ♀.
- Taxonomy: Howard, 1895. U. S. Dept. Agr., Div. Ent., Tech. Ser. 1: 34.
- gurneyi* Compere. Calif. Host: *Phenacoccus gossypii* T. and C., *P. solani* Ferris, *Planococcus citri* (Risso), *Pseudococcus calceolariae* (Maskell), *P. comstocki* (Kuw.), *P. longispinus* (Targ.-Tozz.), *P. maritimus* (Ehrh.), *Tetraneura peregrinus* Compere.
Coccophagus gurneyi Compere, 1929. Calif. Univ., Pubs. Ent. 5 (1): 1-3. ♂, ♀.
- Biology: Compere and Smith, 1932. Hilgardia 6 (17): 585-617. —Cendana, 1937. Calif. Univ., Pubs. Ent. 6 (14): 340-359. —Clancy, 1944. Jour. Econ. Ent. 37 (3): 450. —DeBach, 1949. Ecology 30 (1): 16-24. —Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, p. 92. —Bartlett and Lloyd, 1958. Jour. Econ. Ent. 51 (1): 92.
- hawaiiensis* Timberlake. Calif. Introduced, possibly established. Host: *Coccus pseudomagnoliarum* (Kuw.), *Lecanium* sp., *Parasaissetia nigra* (Nietn.), *Pulvinaria* sp.
Coccophagus hawaiiensis Timberlake, 1926. Hawaii. Ent. Soc., Proc. 6 (2): 315-317. ♀.
- immaculatus* Howard. N. Y. s. to Fla., Ala., w. to Colo., Calif. Host: *Coccus hesperidum* L., *Eriococcus azaleae* Comst., *Lecanium* sp. on Mulberry, *Pulvinaria bigeloviae* Kkll., *Quadraspidotus perniciosus* (Comst.), *Saissetia coffeae* (Walk.), *Toumeyella parvicornis* (Kkll.), *T. turgida* (Kkll.).
Coccophagus immaculatus Howard, 1881. U. S. Dept. Agr., Ann. Rept. for 1880, p. 358. ♂, ♀.
- Biology: Felt, 1916. N. Y. State Mus., Bul. 180: 65.
- insidiator* (Dalman). Mass., N. Y., Colo. Host: *Gossyparia spuria* (Mod.).
Entedon insidiator Dalman, 1825. Svenska Vetensk. Akad., Handl. 46: 371-372. ♂, ♀.
Coccophagus niger Masi, 1909. Lab. Zool. Gen. e. Agr. Portici, Bol. 4: 35-36. ♀.
Coccophagus gossypariae Gahan, 1927. U. S. Natl. Mus., Proc. 71 (4): 24. ♀.
- Biology: Griswold, 1927. Ent. Soc. Amer., Ann. 20 (4): 553-555.
- japonicus* Compere. Calif. Introduced, possibly established. Host: *Ceroplastes* sp., *Coccus pseudomagnoliarum* (Kuw.), *Pulvinaria* sp.
Coccophagus japonicus Compere, 1924. So. Calif. Acad. Sci., Bul. 23 (4): 117, 120, 122-123. ♀.
- longifasciatus* Howard. Ill. Host: *Lecanium nigrofasciatum* Perg.
Aphelinus Inaron Walker, 1839. Monog. Chalcid. v. 1, p. 10. ♂. Questionable synonym.
Coccophagus longifasciatus Howard, 1907. U. S. Dept. Agr., Bur. Ent., Tech. Bul. 12 (4): 80-81. ♂, ♀.
- Taxonomy: Mercet, 1931. Eos 7 (4): 400.
- lycimnia* (Walker). Cosmopolitan. Host: *Ceroplastes floridensis* Comst., *Coccus hesperidum* L., *C. pseudomagnoliarum* (Kuw.), *Icerya purchasi* Mask., *Kermes* sp., *Lecanium corni* Bouche, *L. fletcheri* Kkll., *L. nigrofasciatum* Perg., *L. persicae* (F.), *L. pruinatum* Coq., *L. quercifex* Fitch, *Lepidosaphes beekii* (Newm.) (?), *Parasaissetia nigra* (Nietn.), *Parlatoria pergandii* Comst., *Phenacoccus acericola* King, *Physokermes insignicola* (Craw), *Planococcus citri* (Risso), *Pulvinaria acericola* (W. and R.), *P. amygdali* Kkll.,

P. bigeloviae Kll., *P. vitis* (L.), *P. floccifera* (Westw.), *Quadraspidiotus perniciosus* (Comst.), *Saissetia coffeae* (Walk.), *Saissetia oleae* (Oliv.), *Toumeyella liriodendri* (Gmel.).

Aphelinus Lycimnia Walker, 1839. Monog. Chalcid. v. 1, p. 11. ♀.

Platygaster Lecanii Fitch, 1859. N. Y. State Agr. Soc. Trans. 18: 805-806.

Coccophagus lecanii Smith, 1878. Amer. Nat. 12: 661. ♀.

Coccophagus ater Howard, 1881. U. S. Dept. Agr., Ann. Rept. for 1880, pp. 359-360. ♂, ♀.

Coccophagus cognatus Howard, 1881. U. S. Dept. Agr., Ann. Rept. for 1880, p. 359. ♂, ♀.

Coccophagus flavoscutellum Ashmead, 1881. Fla. Agr. 4: 65. ♂, ♀.

Coccophagus vividus Howard, 1885. U. S. Dept. Agr., Bur. Ent., Bul. 5: 24, 43. ♂, ♀.

Coccophagus californicus Howard, 1889. U. S. Dept. Agr., Insect Life 1 (9): 269-270. ♀.

Coccophagus coccidis Girault, 1917. Descr. Stellarum Nov., p. 2.

Coccophagus corni Alam, 1956. Roy. Ent. Soc. Lond., Trans. 108 (8): 363, 364-365. ♂, ♀.

Coccophagus taxi Alam, 1956. Roy. Ent. Soc. Lond., Trans. 108 (8): 364, 365-367. ♂, ♀.

Taxonomy: Graham, 1976. Syst. Ent. 1 (2): 139.

Biology: Flanders, 1936. Science 84 (2169): 85. — Flanders, 1936. Jour. Econ. Ent. 29 (2): 468.

— Flanders, 1936. Ent. Soc. Amer., Ann. 29 (2): 253. — Flanders, 1942. Ecology 23: 120.

— Flanders, 1943. Jour. Econ. Ent. 36 (5): 802. — Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, pp. 94-95. — Peterson, 1962. Canad. Ent. 94 (7): 740. — Sonina, 1962. Akad. Nauk. Uzbek. SSR, Biol. Zhur. 3: 62. — Sugonyayev, 1962. Akad. Nauk. SSSR Izv., Ser. Biol. 5: 755. — Phillips, 1963. Canad. Ent. 95 (4): 402. — Sorokina, 1971. Ent. Rev. 50 (3): 313, 315, 316.

mexicensis Girault. Calif. Introduced, possibly established. Host: *Saissetia oleae* (Oliv.).

Coccophagus mexicensis Girault, 1917. Descr. Stellarum Nov., p. 2. ♀.

Biology: Clausen, 1959. Pan-Pacific Ent. 35 (2): 107.

nigritus Compere. Calif. Introduced, possibly established. Host: *Saissetia oleae* (Oliv.).

Coccophagus nigritus Compere, 1931. U. S. Natl. Mus., Proc. 78 (7): 18, 81-82. ♀.

Biology: van den Bosch *et al.*, 1955. Jour. Econ. Ent. 48 (1): 54.

ochraceus Howard. La., Calif. Host: *Lecanium corni* Bouche, *Parasaissetia nigra* (Nietn.), *Saissetia coffeae* (Walk.), *S. oleae* (Oliv.).

Coccophagus ochraceus Howard, 1895. U. S. Dept. Agr., Div. Ent., Tech. Ser. 1: 38-39. ♂, ♀.

Coccophagus bifasciaticorpus Girault, 1916. Soc. Ent. 31: 44. ♂, ♀.

Taxonomy: Smith and Compere, 1928. Calif. Univ., Pubs. Ent. 4 (9): 259-261.

perflavus Girault. Wis. Host: *Kermes* sp., *Lecanium corni* Bouche.

Coccophagus perflavus Girault, 1916. Soc. Ent. 31: 43-44. ♂, ♀.

pulvinariae Compere. Calif. Introduced. Host: *Coccus hesperidum* L., *Parasaissetia nigra* (Nietn.), *Saissetia oleae* (Oliv.).

Coccophagus pulvinariae Compere, 1931. U. S. Natl. Mus., Proc. 78 (7): 53-54. ♂, ♀.

Biology: Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, pp. 94-95. — Flanders, 1959. Jour. Econ. Ent. 52 (4): 597.

purpureus Ashmead. Fla.

Coccophagus purpureus Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 132. ♀.

quaestor Girault. Wis. Host: *Toumeyella parvicornis* (Kll.).

Coccophagus quaestor Girault, 1917. Descr. Stellarum Nov., p. 2. ♀.

rusti Compere. Calif. Host: *Saissetia oleae* (Oliv.).

Coccophagus rusti Compere, 1928. In Smith and Compere, Calif. Univ., Pubs. Ent. 4 (9): 261-262. ♀.

Biology: Flanders, 1942. Jour. Econ. Ent. 35 (5): 687. — Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, p. 95.

scutatus Howard. Calif. Host: *Kermes nigropunctatus* Ehrh. and Kll.

Coccophagus scutatus Howard, 1895. U. S. Dept. Agr., Div. Ent., Tech. Ser. 1: 38. ♂, ♀.

scutellaris (Dalman). Fla., Oreg., Calif. Host: *Coccus hesperidum* L., *C. pseudomagnoliarum* (Kuw.), *Lecanium corni* Bouche, *Saissetia coffeae* (Walk.), *S. oleae* (Oliv.).

Entedon scutellaris Dalman, 1825. Svenska Vetensk. Akad., Handl. 46: 365, 371. ♂, ♀.

Coccophagus lunulatus Howard, 1894. U. S. Dept. Agr., Insect Life 6 (3): 232. ♀.

Taxonomy: Graham, 1976. Syst. Ent. 1 (2): 141-142.

Biology: Smith and Compere, 1928. Calif. Univ., Pubs. Ent. 4 (9): 242, 254-257. —Cendana, 1937. Calif. Univ., Pubs. Ent. 6 (14): 379-390. —Flanders, 1959. Jour. Econ. Ent. 52 (1): 74. —Flanders, 1959. Jour. Econ. Ent. 52 (4): 597. —Sonina, 1961. Akad. Nauk. Uzbek SSR, Biol. Zhur. 3: 62.

timberlakei Compere. Utah. Host: *Pulvinaria bigeloviae* Kll.

Coccophagus timberlakei Compere, 1931. U. S. Natl. Mus., Proc. 78 (7): 28-29. ♀.

yoshidae Nakayama. Calif. Introduced. Host: *Coccus pseudomagnoliarum* (Kuw.), *C. hesperidum* L.

Coccophagus yoshidae Nakayama, 1921. Philippine Jour. Sci. 18 (1): 98-99. ♀.

Biology: Compere, 1924. So. Calif. Acad. Sci., Bul. 23 (4): 119. —Smith and Compere, 1928. Calif. Univ., Pubs. Ent. 4 (9): 263-264. —Sugonyaev and Chung-yun, 1960. Ent. Rev. 39 (3): 503, 506.

Genus ENCARSIA Foerster

Encarsia Foerster, 1878. Naturh. Ver. Rheinlande, Verh. 35: 65-66.

Type-species: *Encarsia Tricolor* Foerster. Orig. desig.

Doloresia Mercet, 1912. (Madrid) Mus. de Cien. Nat., Trab. 10: 294-295.

Type-species: *Doloresia filicornis* Mercet. Orig. desig.

The genus *Encarsia* is morphologically similar to *Prospaltella*. *Encarsia* consists of about 50 species distributed throughout the world. They are primary internal parasites of whiteflies and armored scale insects. Males of some species are purported to be hyperparasites on females of the same species.

Taxonomy: Howard, 1907. U. S. Dept. Agr., Bur. Ent., Tech. Bul. 12 (4): 76-79. —Nowicki, 1929. Neue Beitr. Syst. Insektenk. 4: 158-160. —Mercet, 1930. Eos 6 (2): 191-193. —Mercet, 1930. Rev. de Biol. Forest. y Limnologia 2 (B): 77-80. —Agarwal, 1964. Indian Acad. Sci., Proc. 49: 282-285. —Jashnosh, 1973. Ent. Rev. 52 (2): 578-585. —Graham, 1976. Syst. Ent. 1 (2): 142-143.

Biology: Steuben, 1949. Biol. Zentbl. 68: 413-429. —Flanaders, 1953. Ent. Soc. Amer., Ann. 46 (1): 92. —Dysart, 1966. Ent. Soc. Amer., Ann. 59 (1): 28-33. —Gerling, 1966. Ent. Soc. Amer., Ann. 59 (1): 142-143. —Gerling, 1966. Canad. Ent. 98 (7): 707-724. —Gerling, 1967. Ent. Soc. Amer., Ann. 60 (6): 1310.

angelica Howard. Calif. Host: *Aleuroplatus coronatus* (Quaint.), *Aleyrodes* sp. on willow.

Encarsia angelica Howard, 1895. U. S. Dept. Agr., Div. Ent., Tech. Ser. 1: 30. ♂.

basicincta Gahan. Fla. Host: *Aleurothrixus floccosus* (Mask.).

Encarsia basicincta Gahan, 1927. U. S. Natl. Mus., Proc. 71 (4): 20-21. ♀.

coquilletti Howard. Idaho, Wash., Ariz., Calif. Host: *Aleyrodes* sp. on *Sonchus*.

Encarsia coquilletti Howard, 1895. U. S. Dept. Agr., Div. Ent., Tech. Ser. 1: 29. ♂, ♀.

formosa Gahan. Cosmopolitan. Host: *Trialeurodes vaporariorum* (Westw.).

Encarsia formosa Gahan, 1924. U. S. Natl. Mus., Proc. 65 (4): 14-16. ♂, ♀.

Biology: Speyer, 1927. Bul. Ent. Res. 17 (3): 301-308. —McLeod, 1938. Sci. Agr. 18: 529-535. —Burnett, 1948. Ecology 29: 181-189. —Burnett, 1949. Ecology 30: 113-133. —Burnett, 1958. Canad. Ent. 90 (3): 179-191, 225-229. —Burnett, 1962. Canad. Ent. 94 (7): 673. —Timofeeva, 1963. Zash. Rast. Vred. i Boleznei. 8: 44. —Curry and Pimentel, 1971. Ent. Soc. Amer., Ann. 64 (5): 1188-1190. —Huffaker, 1971. Biol. Control, pp. 195, 200-202, 211.

luteola Howard. Mass., Conn., D. C., Calif. Host: *Trialeurodes fernaldi* (Morr.), *T. packardii* (Morr.).

Encarsia luteola Howard, 1895. U. S. Dept. Agr., Div. Ent., Tech. Ser. 1: 29. ♀.

- Biology: Morrill and Back, 1912. U. S. Dept. Agr., Bur. Ent., Bul. 102: 8. — Poinar, 1964. Jour. Ent. 57: 382.
- meritoria** Gahan. Fla. w. to Calif. Host: *Trialeurodes floridensis* (Quaint.).
Encarsia meritoria Gahan, 1927. U. S. Natl. Mus., Proc. 71 (4): 19-20. ♂, ♀.
- pergandiella** Howard. N. Y. s. to D. C., w. to Ill., Wash., Calif. Host: *Aleuroplatus coronatus* (Quaint.), *Trialeurodes abutilonea* (Hald.), *T. vaporariorum* (Westw.).
Encarsia pergandiella Howard, 1907. U. S. Dept. Agr., Bur. Ent., Tech. Bul. 12 (4): 78. ♀.
Encarsia versicolor Girault, 1908. Psyche 15 (3): 53. ♂, ♀.
- Biology: Garman, 1922. Ky. Agr. Expt. Sta., Bul. 241: 92-93. — Dysart, 1966. Ent. Soc. Amer., Ann. 59 (1): 28-33. — Gerling, 1966. Canad. Ent. 98 (7): 707-724.
- quaintancei** Howard. D. C. w. to Ill. Host: *Aleyrodes* sp. on *Polygonum*.
Encarsia quaintancei Howard, 1907. U. S. Dept. Agr., Bur. Ent., Tech. Ser. 12 (4): 79. ♀.
- Biology: Dysart, 1966. Ent. Soc. Amer., Ann. 59 (1): 28-33.
- variegata** Howard. Fla. Host: *Paraleyrodes perseae* (Quaint.).
Encarsia variegata Howard, 1908. Ent. Soc. Wash., Proc. 10 (1-2): 64.
- Biology: Morrill and Back, 1912. U. S. Dept. Agr., Bur. Ent., Bul. 102: 8.

Genus LOUNSBURYIA Compere and Annecke

Lounsburyia Compere and Annecke, 1961. So. Africa Ent. Soc., Jour. 24 (1): 28-29.

Type-species: *Coccophagus trifasciatus* Compere. Orig. desig.

This African genus of coccophagines consists of only a few species which are similar to *Coccophagus*. The type-species was imported into California for the biological control of the black scale, *Saissetia oleae* (Oliv.).

trifasciata (Compere). Calif. Introduced. Host: *Saissetia oleae* (Oliv.).

Coccophagus trifasciatus Compere, 1925. Calif. Univ., Pubs. Ent. 3 (3): 311-313. ♂, ♀.

Taxonomy: Compere, 1931. U. S. Natl. Mus., Proc. 78 (7): 1-132. — Compere and Annecke, 1961. So. Africa Ent. Soc., Jour. 24 (1): 28-32.

Biology: Cendana, 1937. Calif. Univ., Pubs. Ent. 6 (14): 372-379. — Flanders, 1942. Ecology 23: 120.

Genus PHYSCUS Howard

Phycus Howard. 1895. U. S. Dept. Agr., Div. Ent., Tech. Ser. 1: 43.

Type-species: *Coccophagus varicornis* Howard. Monotypic.

Encyrtophycus De Santis, 1948. La Plata Mus. Rev., Zool. (n. s.) 5: 192-193.

Type-species: *Phycus flavoflagellatus* De Santis. Orig. desig.

Phycus consists of about 40 species distributed throughout the world. Females are internal parasites of scale insects; males develop as hyperparasites of females of their own species (sometimes called facultative adelphoparasitism) or on other primary parasites (sometimes called heterotrophic arrhenoparasitism).

Taxonomy: Howard, 1914. Ent. Soc. Wash., Proc. 16 (2): 82-84. — Mercet, 1930. Rev. de Biol. Forest. y Limnologia 2 (B): 61-63. — De Santis, 1940. La Plata Univ. Nac., Fac. Agr. Rev. 24 (3): 29-44. — Erdos, 1958. Folia Ent. Hungarica (n. s.) 11 (5): 85. — Compere and Annecke, 1961. So. Africa Ent. Soc., Jour. 24 (1): 20-26. — Agarwal, 1964. Indian Acad. Sci., Proc. (B) 60: 320-324. — Jashnosh, 1968. Ent. Rev. 47 (1): 117-124. — Jashnosh, 1973. Ent. Rev. 52 (4): 578-585. — Graham, 1976. Syst. Ent. 1 (2): 144.

Biology: Jashnosh, 1968. Ent. Rev. 47 (1): 117-124. — Fisher, 1961. Jour. Econ. Ent. 54 (3): 444. — Williams, 1971. Bul. Ent. Res. 61 (3): 463-484.

flaviventris Howard. Tex. Ecology: Associated with *Antonina graminis* (Mask.). Introduced.

Phycus flaviventris Howard, 1910. Ent. News 21 (4): 162. ♀.

fulvus Compere and Annecke. Calif. Introduced. Host: *Lepidosaphes beckii* (Newm.).

Phycus fulvus Compere and Annecke, 1961. So. Africa Ent. Soc., Jour. 24 (1): 21-23. ♂, ♀.

- Biology: Flanders, 1953. Lab. Zool. Gen. e Agr. Portici, Bol. 33: 22 (as *Physcus* "B").
 —Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, p. 122 (sp. "B").
- howardi** Compere. Calif. Host: *Nuculaspis californica* (Col.).
Physcus howardi Compere, 1928. Calif. Univ., Pubs. Ent. 4 (8): 223. ♂, ♀.
- stanfordi** Howard. Calif. Host: *Stramenaspis kelloggi* (Col.).
Physcus stanfordi Howard, 1914. Ent. Soc. Wash., Proc. 16 (2): 84. ♀.
- testaceus** Masi. Calif. Introduced, possibly established. Host: *Lepidosaphes ulmi* (L.), *Lepidosaphes* sp.
Physcus testaceus Masi, 1909. Lab. Zool. Gen. e Agr. Portici, Bol. 4: 36-37. ♀.
- Biology: Flanders, 1957. Jour. Econ. Ent. 50 (2): 171-172.
- varicornis** (Howard). Que. s. to Fla., w. to Wis., s. to Neb., Calif. Host: *Chionaspis americana* Johns., *C. furfura* (Fitch), *C. pinifoliae* (Fitch), *Diaspidiotus ancylus* (Putn.), *D. uvae* (Comst.), *Lecanium nigrofasciatum* Perg., *Melanaspis obscura* (Comst.), *Nuculaspis californica* (Col.), *Quadraspidiotus juglansregiae* (Comst.), *Q. perniciosus* (Comst.).
Coccophagus varicornis Howard, 1881. U. S. Dept. Agr., Ann. Rept. for 1880, p. 360. ♀.
Physcus variicornis Dalla Torre, 1898. Cat. Hym., 5: 226. Unjustified emendation.
- Taxonomy: Girault, 1911. N. Y. Ent. Soc., Jour. 19 (3): 183.
- Biology: Baker, 1933. U. S. Dept. Agr., Cir. 295: 8-9.

Genus PROSPALTELLA Ashmead

- Prospalta* Howard, 1894. U. S. Dept. Agr., Insect Life 7 (1): 6. Preoccupied by Walker, 1857.
- Type-species: *Prospalta murtfeldiae* Howard. Monotypic.
- Prospaltella* Ashmead, 1904. Ent. Soc. Wash., Proc. 6 (2): 126. New name.
- Mimatomus* Cockerell, 1911. Ent. News 22 (10): 464.
- Type-species: *Mimatomus peltatus* Cockerell. Monotypic.
- The genus *Prospaltella* is cosmopolitan and contains about 40 species. Morphologically it resembles *Aspidiotiphagus* and *Encarsia*. Many species are primary internal parasites of scale insects and whiteflies, but some species have hyperparasitic males.
- Taxonomy: Howard, 1908. Ent. Soc. Amer., Ann. 1 (4): 281-284. —Malenotti, 1917. Redia 12: 195-196. —Mercet, 1921. Real Soc. Espan. Hist. Nat. 50: 300, 304-308. —Silvestri, 1930. Lab. Zool. Gen. e Agr. Portici, Bol. 25: 49-68. —Mercet, 1930. Rev. Biol. Forest. y Limnologia 2 (B): 72-77. —Mercet, 1931. Soc. Espan. Hist. Nat., Bol. 31 (9): 659-669. —Alam, 1956. Roy. Ent. Soc. London, Trans. 108 (8): 357-384. —Agarwal, 1964. Indian Acad. Sci., Proc. (B) 59: 274-282. —Yoshimoto, 1965. Pacific Insects 7 (4): 695-696. —Shafee, 1973. Entomophaga 18 (3): 251-258. —Ferriere, 1961. Schweiz. Ent. Gesell., Mitt. 34 (3): 253-269.
- Biology: Chumakova and Goryunova, 1962. Ent. Rev. 42 (2): 178-181.
- aurantii** (Howard). Cosmopolitan. Host: *Abgrallaspis howardi* (Ckll.), *Aleuroplatus coronatus* (Quaint.), *Aonidiella aurantii* (Mask.), *A. citrina* (Coq.), *Aonidomytilus concolor* (Ckll.), *Aspidiotus nerii* Bouche, *Chionaspis* sp., *Chrysomphalus dictyospermi* (Morg.), *Diaspidiotus ancylus* (Putn.), *D. ancylus* var. on linden, *Hemiberlesia rapax* (Comst.), *Kermes nigropunctatus* Ehrh. and Ckll., *Lecanium corni* Bouche, *L. nigrofasciatum* Perg., *L. persicae* (F.), *Lepidosaphes beckii* (Newm.), *L. gloverii* (Pack.), *L. ulmi* (L.), *Pseudanidonia duplex* (Ckll.), *Quadraspidiotus forbesi* (Johns.), *Q. juglansregiae* (Comst.), *Q. perniciosus* (Comst.). It is probable that *P. aurantii* is a complex of sibling species.
- Coccophagus aurantii* Howard, 1894. U. S. Dept. Agr., Insect Life 6 (3): 231-232. ♀.
- Taxonomy: Rust, 1913. Ent. News 24 (4): 161.
- Biology: Taylor, 1907. Colo. Agr. Exp. Sta., Bul. 120: 10. —Essig, 1913. Calif. State Conn. Hort., Month. Bul. 2: 276. —Griffiths and Stearns, 1947. Fla. Ent. 30 (1-2): 4-7. —Benassy, 1958. Entomophaga 3 (2): 104. —Muma, 1959. Jour. Econ. Ent. 52 (4): 579.
- bella** Gahan. N. Y., Mich., Calif. Host: *Chionaspis pinifoliae* (Fitch).
- Prospaltella bella* Gahan, 1927. U. S. Natl. Mus., Proc. 71 (4): 21-22. ♂, ♀.

- berlesei* (Howard). D. C. s. to Fla., w. to La. Host: *Melanaspis obscura* (Comst.),
Pseudaulacaspis pentagona (Targ.-Tozz.).
Prospalta berlesei Howard, 1906. Ent. News 17 (8): 291-293. ♀.
- Taxonomy: Silvestri, 1908. Lab. Zool. Gen. e Agr. Portici, Bol. 3: 22-28. — Masi, 1908. Lab. Zool. Gen. e Agr. Portici, Bol. 3: 143-146. — Flanders, 1960. Jour. Econ. Ent. 53 (5): 757. — Ferriere, 1961. Schweiz. Ent. Gesell., Mitt. 34 (3): 256, 261-263.
- Biology: Baker, 1933. U. S. Dept. Agr., Cir. 295: 8-9. — Gireau, 1956. Phytoma 82: 29. — Benassy, 1957. Entomophaga 2 (4): 283. — Benassy, 1958. Ann. Epiphyt. 9 (C): 459. — Benassy, 1961. Ann. Epiphyt. 12 (C): 127.
- Morphology: Snodgrass, 1910. U. S. Natl. Mus., Proc. 39: 66.
- brasilensis* (Hempel). Fla. Host: *Aleurothrixus floccosus* (Mask.).
Prospalta brasiliensis Hempel, 1904. Bol. da Agr. Sao Paulo (ser. 5) 1: 20-21. ♀.
- citrella* Howard. Fla., Ariz., Calif. Host: *Aleuroplatus coronatus* Quaint., *Kermes* sp. on *Quercus undulata*.
Prospaltella citrella Howard, 1908. Ent. Soc. Amer., Ann. 1 (4): 282-283. ♀.
- diaspidicola* Silvestri. Mass. s. to Va., w. to Ill., Tex. Host: *Quadraspidiotus perniciosus* (Comst.).
Prospaltella diaspidicola Silvestri, 1909. Real Accad. dei Lincei (ser. 5): 18 (11): 564-565. ♀.
- Taxonomy: Flanders, 1960. Jour. Econ. Ent. 53 (5): 757 (questionable synonym of *berlesei* (Howard)).
- elongata* Dozier. La. w. to Calif. Host: *Lepidosaphes gloveri* (Pack.).
Prospaltella elongata Dozier, 1937. Puerto Rico Univ. Jour. Agr. 21 (2): 128-129. ♀.
- fasciata* Malenotti. D. C. s. to Fla., w. to Tex. Host: *Carulaspis visci* (Schraeder), *Pseudonidia duplex* (Ckll.).
Prospaltella fasciata Malenotti, 1916. Redia 12 (1-2): 195-196. ♀.
- Taxonomy: Ferriere, 1961. Schweiz. Ent. Gesell., Mitt. 34 (3): 255, 259-260.
- Biology: Benassy and Bianchi, 1960. Entomophaga 5 (2): 168.
- fasciiventris* Girault. Mich., Ill. Host: *Chionaspis furfura* (Fitch), *Diaspidiotus aesculi* (Johns.), *Quadraspidiotus forbesi* (Johns.), *Q. juglansregiae* (Comst.), *Q. perniciosus* (Comst.).
Prospaltella fasciiventris Girault, 1908. Psyche 15 (6): 117-120. ♀.
- forbesi* Dozier. Del. Host: *Quadraspidiotus forbesi* (Johns.).
Prospaltella forbesi Dozier, 1928. Ent. Soc. Wash., Proc. 30 (2): 37-38. ♀.
- murtfeldtiae* (Howard). D. C. w. to Mo., Ark. Host: *Diaspidiotus uvae* (Comst.), *Pseudaulacaspis pentagona* (Targ.-Tozz.), *Quadraspidiotus forbesi* (Johns.).
Prospalta murtfeldtii (!) Howard, 1894. U. S. Dept. Agr., Insect Life 7 (1): 6-7. ♀.
- peltata* (Cockerell). Colo. Host: *Aleyrodes pruinosa euphorbium* Ckll.
Minatomus peltatus Cockerell, 1911. Ent. News 22 (10): 464. ♀.
- perniciosi* Tower. N. Y. s. to Va., w. to Kans., Calif. Host: *Lepidosaphes ulmi* (L.), *Quadraspidiotus perniciosus* (Comst.).
Prospaltella perniciosi Tower, 1913. Ent. Soc. Amer., Ann. 6 (1): 125-126. ♂, ♀.
- Taxonomy: Ferriere, 1961. Schweiz. Ent. Gesell., Mitt. 34 (3): 266-267.
- Biology: Tower, 1914. Jour. Econ. Ent. 7 (6): 422. — Tower, 1914. Ent. Soc. Amer., Ann. 7 (3): 249. — Rice, 1937. Abs. Ph. D. Diss., Ohio St. Univ., pp. 267-278. — Flanders, 1939. Jour. Econ. Ent. 32 (6): 890. — Flanders, 1944. Science 100 (2591): 168. — Flanders, 1944. Jour. Econ. Ent. 37 (1): 105. — DeBach, 1953. Jour. Econ. Ent. 46 (6): 1103. — Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, p. 124. — Flanders, 1956. Lab. Zool. Gen. e Agr. Portici, Bol. 33: 23. — Chumakova, 1957. Zool. Zhur. 36 (4): 534. — Benassy and Bianchi, 1960. Entomophaga 5 (2): 168. — Flanders, 1960. Jour. Econ. Ent. 53 (5): 757. — Popova, 1962. Biol. Control Agr. Pests and Diseases 1: 147-176. — Chumakova and Goryunova, 1963. Ent. Rev. 42 (2): 178-181. — Sorokina, 1971. Ent. Rev. 50 (3): 311, 315, 316. — Huffaker, 1971.

Biol. Control, pp. 74-75, 181, 186. — DeBach, 1974. Biol. Control by Nat. Enem., pp. 179, 180, 181.

perspicuipennis Girault, Ill.

Prospaltella perspicuipennis Girault, 1910. N. Y. Ent. Soc., Jour. 18 (4): 234-236. ♀.

quercicola Howard. Calif. Ecology: *Aleuroplatus coronatus* (Quaint.), *A. gelatinosus* (Ckll.).

Prospaltella quercicola Howard, 1908. Ent. Soc. Amer., Ann. 1 (4): 282, 284. ♀.

TRIBE ERIAPORINI

Genus **MYIOCHEMA** Ashmead

Myiocnema Ashmead, 1900. Canad. Ent. 32 (11): 349.

Type-species: *Myiocnema Comperei* Ashmead. Monotypic.

Myiocnema is a monotypic genus found in the Oriental and Australian regions. It has been propagated in the laboratory in North America and may have become established here.

comperei Ashmead. Calif. Introduced, possibly established. Host: *Parasaissetia nigra* (Nietn.).

Myiocnema Comperei Ashmead, 1900. Canad. Ent. 32 (11): 349. ♀.

TRIBE PTEROPTRICINI

Genus **ARCHENOMUS** Howard

Archenomus Howard, 1898. Ent. Soc. Wash., Proc. 4 (2): 136-137.

Type-species: *Archenomus bicolor* Howard. Monotypic.

Pteroptrichoides Fullaway, 1913. Hawaii. Sugar Planters' Assoc. Expt. Sta., Div. Ent., Ann. Rept. 1912, pp. 27-28.

Type-species: *Pteroptrichoides perkinsi* Fullaway. Orig. desig.

Pseudopteroptrix Fullaway, 1918. Hawaii. Ent. Soc., Proc. 3 (5): 464.

Type-species: *Pseudopteroptrix imitatrix* Fullaway. Monotypic.

Less than 15 species of *Archenomus* are known. They are parasites of armored scale insects.

bicolor Howard. Va. s. to Ga., Ohio, Oreg. Host: *Aspidiotus* sp. on sweet gum,

Pseudaulacaspis pentagona (Targ.-Tozz.).

Archenomus bicolor Howard, 1898. Ent. Soc. Wash., Proc. 4 (2): 137-138. ♂, ♀.

Biology: Sorokina, 1971. Ent. Rev. 50 (3): 310, 315, 316.

imitatrix (Fullaway). Fla. Adventive. Host: *Howardia biclavus* (Comst.).

Pseudopteroptrix imitatrix Fullaway, 1918. Hawaii. Ent. Soc., Proc. 3 (5): 464.

Genus **ERETMOCERUS** Haldeman

Eretmocerus Haldeman, 1850. Amer. Jour. Sci. Arts (2) 9: 111.

Type-species: *Eretmocerus corni* Haldeman. Monotypic.

Ricinusa Risbec, 1951. Mem. Inst. Fr. Africa Noire 13: 403.

Type-species: *Ricinusa aleyrodiphağa* Risbec. Monotypic.

Eretmocerus contains about 25 species which are found throughout the world, but predominantly in the tropics. They are parasites of whiteflies and some have been important in biological control (see DeBach, 1974).

Taxonomy: Howard, 1895. U. S. Dept. Agr., Div. Ent., Tech. Ser. 1: 16. — Mercet, 1931. Eos 7

(4): 395-399. — Dozier, 1932. Ent. Soc. Wash., Proc. 34 (7): 112-118. — Compere, 1936. Calif.

Univ., Pubs. Ent. 6 (12): 316-321. — Tachikawa, 1962. Shikoku Ent. Soc., Trans. 7 (3): 73.

— Yoshimoto, 1965. Pacific Insects 7 (4): 690-691. — Gerling, 1969. Lab. Ent. Agr. Portici,

Bol. 27: 79-87. — Gerling, 1970. So. Africa Ent. Soc., Jour. 33 (2): 325-329. — Hayat, 1972.

Entomophaga 17 (1): 99-106. — Gerling, 1972. Ent. Ber. 32 (8): 156-161.

Biology: DeBach, 1974. Biol. Control by Nat. Enem., pp. 140-143, 167, 202.

californicus Howard. Calif. Host: *Aleyrodes* sp. on *Quercus agrifolia*.

Eretmocerus californicus Howard, 1895. U. S. Dept. Agr., Div. Ent., Tech. Ser. 1: 16-17. ♂, ♀.

corni Haldeman. N. Y., N. J., Pa. Host: *Trialeurodes packardii* (Morr.).
Eretmocerus corni Haldeman, 1850. Amer. Jour. Sci. Arts (2) 9: 110.

Taxonomy: Howard, 1895. U. S. Dept. Agr., Div. Ent., Tech. Ser. 1: 16.

haldemani Howard. Fla. w. to Calif., Ill. Host: *Aleyrodes* spp. on *Ambrosia*, *Erigeronum*, *Hardenbergia*, *Quercus*, and *Solidago*; *Aleuroplatus coronatus* (Quaint), *Aleurothrixus floccosus* (Mask.), *Trialeurodes abutilonea* (Hald.), *T. vaporariorum* (Westw.).
Eretmocerus haldemani Howard, 1908, Ent. Soc. Wash., Proc. 10 (1-2): 65.

Biology: Watson and Berger, 1932. Fla. Agr. Expt. Sta., Ext. Bul. 67: 56-57. — Watson and Berger, 1937. Fla. Agr. Expt. Sta., Ext. Bul. 88: 53-55. — Dysart, 1966. Ent. Soc. Amer., Ann. 59 (1): 28-33. — Gerling, 1967. Ent. Soc. Amer., Ann. 60 (6): 1306-1321.

illinoisensis Dozier. Ill.

Eretmocerus illinoisensis Dozier, 1932. Ent. Soc. Wash., Proc. 34 (7): 115. ♂.

portoricensis Dozier. Fla. Host: *Aleurothrixus floccosus* (Mask.).

Eretmocerus portoricensis Dozier, 1932. Ent. Soc. Wash., Proc. 34 (7): 115-116. ♀.

SUBFAMILY SIGNIPHORINAE

The names Signiphoridae and Thysanidae have been used interchangeably. *Thysanus* Walker is older (1840) and Thysanidae was used in the 1951 edition of the catalog. Signiphorinae is used here because it is the commonly used name. *Signiphora* Ashmead and *Thysanus* have been synonymized. However, Rozanov (1965) and others have shown that the genera are distinct. The Signiphorinae were characterized by Howard (1894).

De Santis (1968) divided the Signiphoridae into the Signiphorinae and Thysaninae. His subfamilies have been retained as tribes.

Taxonomy: Howard, 1894. U. S. Dept. Agr., Insect Life 6 (3): 234. — Girault, 1913. U. S. Natl. Mus., Proc. 45: 189-233. — Mercet, 1916. Soc. Espan. de Hist. Nat., Bol. 16: 519-533.

— Mercet, 1917. Rev. Acad. Cien. Madrid 16 (4): 160-170. — Nikol'skaya, 1950. Doklady Akad. Nauk SSSR 75 (2): 319-321. — Rozanov, 1965. Ent. Rev. 44 (4): 508-515. — De Santis, 1968. Rev. Fac. Agron., La Plata 44 (1): 7-16 (nomenclature). — Hayat, 1970. Entomophaga 15 (4): 387-399. — De Santis, 1973. Univ. Fac. Agron., Rev. La Plata 49 (2): 143-153. — Subba Rao, 1974. Bul. Ent. Res. 64 (4): 525-531.

Morphology: Domenichini, 1954. Ann. Fac. Agr., Inst. Ent. Agr. (n. s.) 3: 117-132.

TRIBE SIGNIPHORINI

Genus SIGNIPHORA Ashmead

Signiphora Ashmead, 1880. Orange Insects, pp. 29, 30.

Type-species: *Signiphora flavopalliat*a Ashmead. Monotypic.

Signiphora consists of about 20 species which are parasites of armored scale insects and whiteflies.

Taxonomy: Girault, 1913. U. S. Natl. Mus., Proc. 45: 189-233. — Mercet, 1916. Soc. Espan. de Hist. Nat., Bol. 16: 519-533. — Malenotti, 1918. Redia 13 (1): 39-45. — Nikol'skaya, 1950. Doklady Akad. Nauk SSSR 75 (2): 319-321. — Ferriere, 1953. Schweiz. Ent. Gesell., Mitt. 26 (1): 5. — Rozanov, 1965. Ent. Rev. 44 (4): 508-515. — De Santis, 1973. Univ. Fac. Agron., Rev. La Plata 49 (2): 143-153.

aleyrodis Ashmead. Pa., Tex., Calif. Host: *Aleuroplatus coronatus* (Quaint.), *Chrysomphalus aonidum* (L.), *C. dictyospermi* (Morgan).

Signiphora aleyrodis Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 409, 412. ♀.

aspidioti Ashmead. Ga.

Signiphora aspidioti Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 410, 412. ♀.

borinquensis Quezada, DeBach and Rosen. Calif. Introduced, possibly established. Host: *Aspidiotus destructor* Sign., *Diaspis echinocacti* (Bouche).

Signiphora borinquensis Quezada, DeBach and Rosen, 1973. Hilgardia 41 (18): 549-552. ♂, ♀.

Biology: Quezada *et al.*, 1973. Hilgardia 41 (18): 543-604.

- citrifolii** (Ashmead). Florida. Host: *Aleuroplatus coronatus* (Quaint.), *A. gelatinosus* (Ckll.), *Aleyrodes* sp. on *Quercus agrifolia*.
Signiphora Citrifolii Ashmead, 1880. Orange Insects, p. 66. ♀.
- coquilletti** Ashmead. N. Y. s. to Fla., Calif. Host: *Aleyrodes* sp., *Diaspis boisduvali* Sign.
Signiphora coquilletti Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 409, 412. ♀.
- flava** Girault. Calif. Host: *Aspidiotus spinosus* Comst., *Hemiberlasia rapax* (Comst.).
Signiphora flava Girault, 1913. U. S. Natl. Mus., Proc. 45: 213-214. ♀.
- flavella** Girault. Fla. w. to Tex. Host: *Hemiberlasia lataniae* Sign., *Aspidiotus* sp.
Signiphora flavella Girault, 1913. U. S. Natl. Mus., Proc. 45: 214-215. ♀.
Signiphora basilica Girault, 1913. U. S. Natl. Mus., Proc. 45: 215. ♀.
- flavopalliata** Ashmead. Ga., Fla. w. to La., Calif. Ecology: This species is apparently hyperparasitic. Host: *Aleyrodes* sp., *Aonidiella aurantii* (Mask.), *A. citrina* (Coq.), *Chionaspis* sp. on *Magnolia*, *Chrysomphalus dictyospermi* (Morg.), *Hemiberlesia lataniae* (Sign.), *H. rapax* (Comst.), *Lepidosaphes beekii* (Newm.), *L. gloveri* (Pack.), *Prospaltella* sp., *Pseudaonidia duplex* (Ckll.).
*Signiphora flavopalliatu*s Ashmead, 1880. Orange Insects, pp. 29, 31. ♀. As *flavo-palliatu*s on p. 31.
- Biology: Muma, 1959. Jour. Econ. Ent. 52 (4): 577-587. — Hughes, 1960. Fla. Ent. 43 (2): 90.
- louisianae** (Dozier). Fla. w. to La. Host: *Hemiberlasia lataniae* Sign.
Thysanus louisianae Dozier, 1933. Ent. Soc. Wash., Proc. 35 (6): 100. ♂.
- merceti** Malenotti. La., Calif. Host: *Chrysomphalus dictyospermi* (Morgan), *Hemiberlesia lataniae* (Sign.), *H. rapax* (Comst.).
Signiphora merceti Malenotti, 1917 (1916). Redia 12 (1-2): 181-182. ♀.
- Taxonomy: Malenotti, 1916. Soc. Espan. de Hist. Nat., Bol. 16: 529.
- Biology: Cressman, 1933. Jour. Econ. Ent. 26 (3): 704.
- occidentalis** Howard. Fla., Calif. Host: *Aleyrodes* sp., *Aonidiella aurantii* (Mask.), *A. citrina* (Coq.), *Hemiberlasia lataniae* (Sign.), *Quadraspidotus juglansregiae* (Comst.), *Lepidosaphes gloveri* (Pack.).
Signiphora occidentalis Howard, 1894. U. S. Dept. Agr., Insect Life 6 (3): 233, 235. ♂, ♀.
- thoreauini** Girault. Calif. Host: *Aspidiotus hederae* (Vallot).
Signiphora thoreauini Girault, 1916. Psyche 23 (2): 41. ♀.
- townsendi** Ashmead. D. C., Tex. Host: *Aleyrodes* sp., *Hemiberlesia lataniae* (Sign.), *Pseudaulacaspis pentagona* (Targ.-Tozz.), *Quadraspidotus perniciosus* (Comst.).
Signiphora townsendi Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 410, 412. ♀.

TRIBE THYSANINI

Genus CHARTOCERUS Motschulsky

Chartocerus Motschulsky, 1859. Etudes Ent. 8: 171-172.

Type-species: *Chartocerus musciformis* Motschulsky. Monotypic.

Signiphora subg. *Matritia* Mercet, 1916. Soc. Espan. de Hist. Nat., Bol. 16: 523.

Type-species: *Signiphorina conjugal*is Mercet. Orig. desig. Boucek (in Peck *et al.*, 1964) synonymized *Xana* with *Matritia*.

Xana Kurdjumov, 1917 (1916). Jour. Appl. Ent. 1 (1): 80-81.

Type-species: *Xana nigra* Kurdjumov. Monotypic. Junior secondary homonym of *Signiphora nigra* Ashmead, 1900. I have not seen the type-specimen of *Chartocerus (Xana) niger* (Kurdjumov). If the synonymy of Rozanov (1965) is correct, a replacement name for Kurdjumov's species must be proposed.

Signiphorina Nikol'skaya, 1950. Doklady Akad. Nauk. SSSR 75 (2): 321.

Type-species. *Signiphorina mala* Nikol'skaya. Monotypic.

Chartocerus contains about 10 species that parasitize various Homoptera and Diptera.

Taxonomy: De Santis, 1968. Rev. Fac. Agron. La Plata 44 (1): 11-13. — Hayat, 1970.

Entomophaga 15 (4): 388, 390-399.

- dactylopii** (Ashmead). Tex. w. to Calif. Host: *Phenacoccus solenopsis* Tins., *Leucopis* sp. predaceous on *Phenacoccus gossypii* Towns. and Ckll., *Pseudococcus ephedrae* (Coq.).
Signiphora dactylopii Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 410. ♀.
- elongatus** (Girault). N. J. s. to Ga., w. to S. Dak., Calif. Host: *Coccus hesperidum* L., *Pseudococcus comstocki* (Kuw.), coccid on *Muhlenbergia*, *Acerophagus notativentris* (Gir.), *Achrysoophagus modestus* Timb., *Anagyrus yuccae* (Coq.), *Clausenia purpurea* (Ishii), *Pseudeptomastix squamulata* Gir., *Tetrastichus minutus* (How.), *Zarhopalus corvinus* Gir.
Neosigniphora elongata Girault, 1916. Psyche 23 (2): 41-42. ♀.
- Taxonomy: Timberlake, 1924. Calif. Univ., Pubs. Ent. 3 (2): 246-248. — Novitzky, 1954. Univ. Milano Bol. di Zool. Agr. e Bach. 20: 207. — Ferriere, 1957. Opusc. Zool. 10: 6.
- Biology: Clausen, 1924. Calif. Univ., Pubs. Ent. 3 (2): 257-266, 281-284. — Clancy, 1944. Jour. Econ. Ent. 37 (3): 451.
- fasciatus** (Girault). Tex. w. to Calif. Host: *Coccus viridus* Green, *Melanaspis lilacina* (Ckll.), *Parasaissetia nigra* (Nietn.).
Signiphora fasciata Girault, 1913. U. S. Natl. Mus., Proc. 45: 206, 219-220, 221, 229. ♂, ♀.
- Biology: Arnaud, 1959. Ent. News 70 (6): 163 (primary parasite).
- mexicanus** (Ashmead). Calif. Host: *Aspidiotus hederae* (Vallot).
Signiphora mexicana Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 411. ♀.
- niger** (Ashmead). N. Y. s. to Fla., Ill., Calif. Host: *Aphyeus lounsburyi* (How.), *Chrysomphalus aonidum* (L.), *Clausenia purpurea* Ishii, *Coccus hesperidum* L., *Pseudococcus comstocki* (Kuw.), *Leptonastidea abnormis* (Gir.), *Saissetia oleae* (Oliv.).
Signiphora nigra Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 410. ♀.
- Taxonomy: Smith and Compere, 1928. Calif. Univ., Pubs. Ent. 4 (9): 242, 245, 332-334.
- Biology: Compere, 1925. Calif. Univ., Pubs. Ent. 3 (3): 296. — Clancy, 1944. Jour. Econ. Ent. 37 (3): 451.
- nigrellus** (Girault). Tex. Host: *Melanaspis tenebricosus* (Comst.).
Signiphora nigrella Girault, 1913. U. S. Natl. Mus., Proc. 45: 215. ♀.
- pulcher** (Girault). N. J. s. to N. C., Ill., Ark. Host: *Aulacaspis rosae* (Bouche), *Chionaspis americana* Johns., *Lecanium nigrofasciatum* Perg., *Pseudaulacaspis pentagona* (Targ.-Tozz.), *Quadrapsidiotus perniciosus* (Comst.).
Signiphora pulchra Girault, 1913. U. S. Natl. Mus., Proc. 45: 215-217, 229. ♂, ♀.
Signiphora nigrata Girault, 1913. U. S. Natl. Mus., Proc. 45: 215.
- unifasciatus** (Ashmead). Ga., Fla. Host: *Ceropsylla sideroxyli* Riley.
Signiphora unifasciata Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 410. ♀.

Genus THYSANUS Walker

Thysanus Walker, 1840. Ann. Nat. Hist. 4: 234.

Type-species: *Thysanus ater* Haliday. Monotypic.

Triphasius Foerster, 1856. Hym. Stud. v. 2, pp. 83, 84. Unnecessary new name.

Platostichus Foerster, 1856. Hym. Stud., v. 2, p. 145. Unnecessary new name.

Neosigniphora Rust, 1913. Ent. News 24 (4): 164.

Type-species: *Neosigniphora nigra* Rust. Monotypic.

Species of *Thysanus* are hyperparasites of armored scale insects. Two species are known.

Taxonomy: Silvestri, 1918. Lab. Zool. Gen. e Agr. Portici, Bol. 12: 266-271. — Nikol'skaya, 1950. Doklady Akad. Nauk SSSR 75 (2): 319-321. — Ferriere, 1953. Schweiz. Ent. Gesell., Mitt. 26 (1): 5. — Yoshimoto, 1965. Pacific Insects 7 (4): 703-704. — Rozanov, 1965. Ent. Rev. 44 (4): 508-515. — Quezada, DeBach and Rosen, 1973. Hilgardia 41 (18): 543-604. — Subba Rao, 1974. Bul. Ent. Res. 64 (4): 525-531.

ater Haliday. Md. Ecology: Primary parasite attacking *Melanaspis obscura* (Comst.).

Thysanus ater Haliday, 1840. Ann. Nat. Hist. 4: 234.

SUBFAMILY TETRACNEMINAE

TRIBE ANAGYRINI

Genus ANAGYRUS Howard

Anagyrus Howard, 1896. U. S. Natl. Mus., Proc. 18: 638-639.

Type-species: *Anagyrus greeni* Howard. Monotypic.

Epidinocarsis Girault, 1913. Arch. f. Naturgesch. 79A (6): 83.

Type-species: *Epidinocarsis tricolor* Girault. Monotypic.

Anagyrus is distributed throughout the world; its species are parasites of mealybugs.

Taxonomy: Timberlake, 1924. Calif. Univ., Pubs. Ent. 3 (2): 224-231. — Ishii, 1928. Imp. Agr.

Expt. Sta. Japan, Bul. 3 (2): 84-92. — Compere, 1939. Bul. Ent. Res. 30 (1): 3-7.

— Timberlake, 1941. B. P. Bishop Mus., Occas. Papers 16 (9): 218. — Compere, 1947. Calif.

Univ., Pubs. Ent. 8 (1): 20-22. — Hoffer, 1953. Ochr. Pirody 8 (4): 84. — Tachikawa, 1956.

Mem. Ehime Univ., Sect. 6. 1 (2): 138-141, 147-152. — Trjapitzin, 1968. Vses. Ent. Obschch.,

Trudy 52: 90-92. — Graham, 1969. Polskie Pismo Ent. 39 (2): 219-220.

antoninae Timberlake. Fla. w. to Tex. Host: *Antonia graminis* (Mask.).

Anagyrus (Epidinocarsis) antoninae Timberlake, 1920. Hawaii. Ent. Soc., Proc. 4 (2):

409-413. ♂, ♀.

Biology: Riherd, 1950. Fla. Ent. 33 (1): 18-22. — Riherd, 1951. Jour. Econ. Ent. 44 (4): 622-623.

— Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, pp. 4, 61, 75. — Questel and Genung,

1957. Fla. Ent. 40 (4): 123-125. — Dean and Schuster, 1958. Jour. Econ. Ent. 51 (3): 363-365.

— Dean, 1960. Jour. Econ. Ent. 53 (4): 694. — Huffaker, 1971. Biol. Control, pp. 228, 229.

— DeBach, 1974. Biol. Control by Nat. Enem., p. 169.

clauseni Timberlake. Calif. Host: *Pseudococcus maritimus* (Ehrh.).

Anagyrus clauseni Timberlake, 1924. Calif. Univ., Pubs. Ent. 3 (2): 226-228. ♀.

fusciventris (Girault). Calif. Host: *Pseudococcus longispinus* (Targ.-Tozz.).

Epidinocarsis fusciventris Girault, 1915. Queensland Mus., Mem. 4: 144. ♀.

Anagyrus nigricornis Timberlake, 1919. Hawaii. Ent. Soc., Proc. 4 (1): 197-199. ♂, ♀.

Biology: Flanders, 1940. Jour. Econ. Ent. 33 (5): 757-758. — Flanders, 1940. Calif. Citrog. 25

(5): 146, 154-155. — Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, p. 75.

graminicolens Dozier. Tex. Host: *Antonia graminis* (Mask.). This may be a synonym of

Cerchysius pulchricornis Howard, 1894.

Anagyrus graminicolens Dozier, 1937. Puerto Rico Univ., Jour. Agr. 21 (2): 123. ♀.

nigritus (Howard). Calif.

Aphyus nigritus Howard, 1898. U. S. Natl. Mus., Proc. 21: 241, 243. ♀.

pallidipes Ashmead. N. Y. s. to Fla., w. to Tex.

Anagyrus pallidipes Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 354. ♂.

pseudococci (Girault). Calif. Introduced. Host: *Pseudococcus citri* (Risso).

Epidinocarsis pseudococci Girault, 1915. Entomologist 48: 185. ♂, ♀.

Biology: Flanders, 1939. Jour. Econ. Ent. 32 (6): 889. — Flanders, 1953. Jour. Econ. Ent. 46

(2): 268. — Bartlett and Lloyd, 1958. Jour. Econ. Ent. 51 (1): 92-93.

pulcher (Ashmead). Conn. s. to Fla.

Dinocarsis pulcher Ashmead, 1888. Ent. Amer. 4 (1): 17. ♀.

putonophilus Compere. Calif. Host: *Puto ambiguus* (Full.), *P. yuccae* (Coq.).

Anagyrus putonophilus Compere, 1947. Calif. Univ., Pubs. Ent. 8 (1): 20, 22. ♀.

Biology: Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 45, 57-59.

smithi Doutt. Calif. Host: *Spilococcus implicatus* Ferris.

Anagyrus smithi Doutt, 1952. Hawaii. Ent. Soc., Proc. 14 (3): 401-402. ♂, ♀.

thyridopterygis (Ashmead). N. J. s. to Fla. Host: *Thyridopteryx ephemeraeformis* (Haw.)?

Host is probably an associated coccid.

Dinocarsis thyridopterygis Ashmead, 1886. Canad. Ent. 18 (5): 97. ♀.

townsendi (Howard). N. Mex. Host: *Phenacoccus* sp. on cotton.

Aphyus townsendi Howard, 1898. U. S. Natl. Mus., Proc. 21: 243. ♀.

yuccae (Coquillett). Calif. Host: *Anisococcus cravii* (Coq.), *Pseudococcus maritimus* (Ehrh.),

P. sp. on grapes, *Puto yuccae* (Coq.), *Achrysophagous modestus* Timb.

Blastothrix yuccae Coquillett, 1890. West. Amer. Scientist 7: 44. ♀.

Epidinocarsis subalbicornis Girault, 1916. Psyche 23 (2): 44-45. ♀.

Anagyrus ferrisi Compere, 1926. Calif. Univ., Pubs. Ent. 4 (1): 18-22. ♂, ♀.

Taxonomy: Gahan, 1949. Hawaii. Ent. Soc., Proc. 13 (3): 359-360.

Biology: Clausen, 1924. Calif. Univ., Pubs. Ent. 3 (2): 256-266, 274-276. — Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 55-59.

Morphology: Maple, 1937. Ent. Soc. Amer., Ann. 30 (1): 146.

Genus ANATHRIX Burks

Anathrix Burks, 1952. N. Y. Ent. Soc., Jour. 60 (3): 179-180.

Type-species: *Anathrix argyrus* Burks. Orig. desig.

argyrus Burks. Que. s. to Va., Tex. Host: *Ferrisia virgata* (Ckll.).

Anathrix argyrus Burks, 1952. N. Y. Ent. Soc., Jour. 60 (3): 181-182. ♀.

Genus ANUSIA Foerster

Anusia Foerster, 1856. Hym. Stud. v. 2, p. 32. No species included.

Type-species: *Anusia nasicornis* Foerster. Desig. by Gahan and Fagan, 1923.

Taxonomy: Mercet, 1921. Fauna Iberica Himen. Fam. Encirtidos, pp. 87-89. — Graham, 1958.

Ent. Tidskr. 79 (3-4): 148-149. — Graham, 1969. Polskie Pismo Ent. 39 (2): 214.

neomexicana Ashmead. N. Mex. w. to Calif. Host: *Amonostherium lichtensioides* (Ckll.).

Anusia neomexicana Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 348. ♀.

Genus APOANAGYRUS Compere

Apoanagyrus Compere, 1947. Calif. Univ., Pubs. Ent. 8 (1): 18.

Type-species: *Apoanagyrus californicus* Compere. Monotypic.

californicus Compere. Ariz., Calif. Host: *Pseudococcus solani* (Ckll.).

Apoanagyrus californicus Compere, 1947. Calif. Univ., Pubs. Ent. 8 (1): 18-19. ♂, ♀.

Biology: Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 63-66.

Genus LEPTOMASTIDEA Mercet

Leptomastidea Mercet, 1916. Soc. Espan. de Hist. Nat., Bol. 16: 112.

Type-species: *Leptomastidea aurantiaca* Mercet. Monotypic.

Tanaomastix Timberlake, 1918. Calif. Univ., Pubs. Ent. 1 (8): 362-364.

Type-species: *Paraleptomastix abnormis* Girault. Orig. desig.

Less than fifteen species of *Leptomastidea* are known. All are thought to be primary internal parasites of mealybugs.

Taxonomy: Timberlake, 1923. Ent. Soc. Wash., Proc. 25 (3): 59. — Mercet, 1924. Soc. Espan.

de Hist. Nat., Bol. 24: 252-258. — Mercet, 1921. Fauna Iberica, Himen., Encirtidos, pp. 7, 15-18, 27, 56, 64, 76, 107-114, 243. — Risbec, 1952. Mem. Inst. Sci. Madagascar, Ser. E, Ent. 2: 5, 10-15. — Ferriere, 1953. Schweiz. Ent. Gesell., Mitt. 26 (1): 17. — Trjapitzin, 1965. Ent. Rev. 44 (4): 517-518.

abnormis (Girault). Que. s. to Fla., w. to La., Calif. Host: *Phenacoccus gossypii* Tnsd. and Ckll.,

Planococcus citri (Risso), *P. kraunhae* (Kuw.).

Paraleptomastix abnormis Girault, 1915. Entomologist 48: 184-185. ♂, ♀.

Biology: Smith, 1917. Jour. Econ. Ent. 10 (2): 262-268. — Armitage, 1920. Calif. Dept. Agr.,

Monthly Bul. 9: 446. — Compere and Smith, 1932. Hilgardia 6 (17): 610-611. — McLeod, 1940 (1939). Ent. Soc. Ontario, Ann. Rept. 70: 65-66. — Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2):

91-93. — Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, p. 109. — Huffaker, 1971. Biol. Control, p. 196.

claripennis (Timberlake). Calif. Host: *Dysmicoccus ryani* (Coq.).

Tanaomastix claripennis Timberlake, 1918. Calif. Univ., Pubs. Ent. 1 (8): 363, 365-366. ♀.

Genus LEPTOMASTIX Foerster

Leptomastix Foerster, 1856. Hym. Stud. v. 2, pp. 34, 37. No species included.

Type-species: *Leptomastix histrio* Mayr. Subsequent monotypy.

Sterrhocona Foerster, 1856. Hym. Stud., v. 2, pp. 33, 36, 37.

Type-species: *Sterrhocona histrio* Foerster. Monotypic.

Stenoterys Thomson, 1876 (1875). Hym. Scand., v. 4, pp. 115, 128.

Type-species: *Stenoterys orbitalis* Thomson. Monotypic.

Calocerinella Girault, 1913. Wis. Nat. Hist. Soc., Bul. 11: 46.

Type-species: *Calocerinella trifasciata* Girault. Monotypic.

This rather large genus of internal parasites of pseudocoids is poorly represented in North America.

Taxonomy: Ruschka, (1922). Zool.-Bot. Gesell. Wien, Verhandl. 72 (2): 12. — Compere, 1938.

Bul. Ent. Res. 29 (3): 323-325. — Compere, 1939. Bul. Ent. Res. 30 (1): 24. — Compere, 1939.

Calif. Univ., Pubs. Ent. 7 (4): 57-58. — Kryger, 1950. Ent. Meddel. 26 (2): 107-108. — Risbec,

1952. Mem. Inst. Sci. Madagascar, Ser. E, Ent. 2: 15-19. — Trjapitzin, 1965. Ent. Rev. 44

(4): 518-520. — Graham, 1969. Polskie Pismo Ent. 39 (1): 216-219.

dactylopii Howard. Que. s. to La., Calif., Wash. Host: *Phenacoccus gossypii* Tnsd. and Ckll., *P. solani* Ferris, *Planococcus citri* (Risso), *Pseudococcus calceolariae* (Mask.), *P. comstocki* (Kuv.), *P. longispinus* (Targ.-Tozz.), *P. maritimus* (Ehrh.).

Leptomastix dactylopii Howard, 1885. U. S. Dept. Agr., Bur. Ent., Bul. 5: 23-24, 42. ♂, ♀.

Taxonomy: Compere, 1939. Calif. Univ., Pubs. Ent. 7 (4): 57-58.

Biology: Flanders, 1939. In Compere, Calif. Univ., Pubs. Ent. 7 (4): 58. — Watson, 1939.

Citrus Grower (Fla.) 1 (17): 11. — Bess, 1939. Ent. Soc. Amer., Ann. 32 (1): 202-206.

— McLeod, 1940 (1939). Ent. Soc. Ontario, Ann. Rept. 70: 65-66. — Clancey, 1944. Jour.

Econ. Ent. 37 (3): 450. — Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 115. — Huffaker, 1971.

Biol. Control, p. 195. See Peck (1963) for an extensive bibliography of this species.

Genus PARANUSIA Brethes

Paranusia Brethes, 1913. Buenos Aires Mus. Nac. de Hist. Nat., An. 24: 102.

Type-species: *Paranusia bifasciata* Brethes. Orig. desig.

Philoponectroma Brethes, 1913. Buenos Aires Mus. Nac. de Hist. Nat., An. 24: 104.

Type-species: *Philoponectroma pectinatum* Brethes. Orig. desig.

Gyranusia Brethes, 1920. Rev. Chile Hist. Nat. 24: 137.

Type-species: *Gyranusia porteri* Brethes. Orig. desig.

An unidentified species is found in California on *Sphaeralcea*.

Taxonomy: Timberlake, 1923. Ent. Soc. Wash., Proc. 25 (3): 60. — Timberlake, 1924. Calif.

Univ., Pubs. Ent. 3 (2): 225. — De Santis, 1950. La Plata Mus. Rev. Zool. (n. s.) 6: 54, 60-61.

Genus PARASTENOTERYS Girault

Parastenoterys Girault, 1915. Queensland Mus., Mem. 4: 165.

Type-species: *Parastenoterys punctatus* Girault. Orig. desig.

Paracetromoides Girault, 1915. Queensland Mus., Mem. 4: 171.

Type-species: *Paracetromoides magniscutellum* Girault. Orig. desig.

niveiclava Girault. Md.

Parastenoterys niveiclava Girault, 1917. Chalcidoidea Nova Marilandensis II, p. 1. ♀.

Taxonomy: Girault, 1920. U. S. Natl. Mus., Proc. 58: 191.

Genus PSEUDLEPTOMASTIX Girault

Pseudleptomastix Girault, 1915. Ent. Soc. Amer., Ann. 8 (3): 272.

Type-species: *Pseudleptomastix squamulatus* Girault. Monotypic.

squamulata Girault. Calif. Host: *Amonostherium lichtensioides* (Ckll.), *Pseudococcus maritimus* (Ehrh.).

Pseudleptomastix squamulatus Girault, 1915. Ent. Soc. Amer., Ann. 8 (3): 272. ♀.

Paraleptomastix notatus Girault, 1917. Entomologist 50: 38. ♀.

Pseudleptomastix flutulescens Compere, 1926. Calif. Univ., Pubs. Ent. 4 (1): 22-24. ♂, ♀.

Taxonomy: Timberlake, 1924. Calif. Univ., Pubs. Ent. 3 (2): 232-235. —Compere, 1947. Calif. Univ., Pubs. Ent. 8 (1): 17.

Biology: Clausen, 1924. Calif. Univ., Pubs. Ent. 3 (2): 257-266. —Clausen, 1924. Calif. Univ., Pubs. Ent. 3 (2): 277-279. —Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 112-113.

Genus RHOPUS Foerster

Rhopus Foerster, 1856. Hym. Stud., v. 2, pp. 34, 37, 151.

Type-species: *Eucyrtus piso* Walker. Orig. desig.

Xanthocyrtus Ashmead, 1902. Canad. Ent. 34 (11): 302.

Type-species: *Xanthocyrtus nigroclavatus* Ashmead. Monotypic.

Mirastymachus Girault, 1915. N. Y. Ent. Soc., Jour. 23 (3): 166.

Type-species: *Mirastymachus europaeus* Girault. Orig. desig.

Scelioencyrtus Girault, 1915. Queensland Mus., Mem. 4: 161.

Type-species: *Scelioencyrtus nigriclavus* Girault. Orig. desig.

Pholidoceras Mercet, 1918. Soc. Espan. de Hist. Nat., Bol. 18 (3-4): 237-239.

Type-species: *Pholidoceras brachyptera* Mercet. Monotypic.

Pholidoceros Ferriere, 1955. Lab. Zool. Gen. e Agr. Portici, Bol. 33: 358.

Type-species: *Pholidoceras parvula* Mercet. Monotypic.

This genus consists of approximately 30 species which are parasites of scale insects. The North American fauna has been poorly studied, but several species are known from Europe.

Taxonomy: Mercet, 1928. Eos 4 (1): 5-7. —Hoffer, 1955. Acta Mus. Nat. Pragae 11 (1): 17-22.

—Ghesquiere, 1956. Lab. Zool. Gen. e Agr. Portici, Bol. 33: 683-692. —Ghesquiere, 1957.

Neotropica 3 (10): 17-22. —Ting-hsi, 1961. Ent. Rev. 40 (1): 72-74. —De Santis, 1965. Com.

Invest. Cient. Prov. Buenos Aires, An. 4: 53-56. —Graham, 1969. Polskie Pismo Ent. 39 (2): 220-224.

Biology: Webster, 1903 (1902). Ind. Acad. Sci., Proc. p. 103.

americanus (Girault). D. C., Del., Oreg.

Mirastymachus americanus Girault, 1915. N. Y. Ent. Soc., Jour. 23 (3): 167. ♀.

nigroclavatus (Ashmead). Va. w. to Nebr., S. Dak. Host: Coccid on *Panicum* sp., *Pseudaonidia* sp. on *P. xalapense*.

Xanthocyrtus nigroclavatus Ashmead, 1902. Canad. Ent. 34 (11): 302. ♀.

Biology: Webster, 1903 (1902). Ind. Acad. Sci., Proc. p. 103.

TRIBE CHRYSOPLATYCERINI

Genus CHRYSOPLATYCERUS Ashmead

Riley Howard, 1888. In Smith, Ent. Amer. 4 (4): 80. Preocc. by *Riley* Ashmead, 1888.

Type-species: *Riley* *splendens* Howard. Monotypic.

Chrysoplatycerus Ashmead, 1889. Canad. Ent. 21 (1): 38. N. name.

This small genus consists of fewer than five described species. The species of *Chrysoplatycerus* are parasites of pseudococcids and thus may be of some importance in biological control.

Taxonomy: Timberlake, 1922. U. S. Natl. Mus., Proc. 61 (2): 1-10.

ferrisi Timberlake. Calif. Host: *Anisococcus adenostomae* (Ferris).

Chrysoplatycerus ferrisi Timberlake, 1922. U. S. Natl. Mus., Proc. 61 (2): 6. ♂, ♀.

Biology: Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 115.

howardii Ashmead. Fla. Host: *Pseudococcus* sp.

Chrysoplatycerus howardii Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 405. ♀.

splendens (Howard). Que. (greenhouses), Fla., Calif. Host: *Dysmicoccus ryani* (Coq.),

Planococcus citri (Risso), *Pseudococcus longispinus* (Targ.-Tozz.), *P. maritimus* (Ehrh.).

Rileya splendens Howard, 1888. In Smith, Ent. Amer. (4) 4: 80. ♀.

Biology: Clausen, 1924. Calif. Univ., Pubs. Ent. 3 (2): 256-266, 279. —Clancy, 1944. Jour.

Econ. Ent. 37 (3): 450. —Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 115. See Peck (1963)

for an extensive bibliography of this species.

TRIBE ERICYDNINI

Genus CLAUSENIA Ishii

Clausenia Ishii, 1923. Japan Dept. Agr. and Com., Imp. Plant Quar. Sta. Bul. 3: 98-100.

Type-species: *Clausenia purpurea* Ishii. Orig. desig.

Clausenia consists of less than a dozen described species, most of which are African. With more research on the group it should prove to be considerably larger. All known species are parasites of mealybugs. At least one species, *C. purpurea*, is exceptionally important in biological control of the Comstock mealybug in the United States and Canada.

Taxonomy: Rosen, 1965. Roy. Ent. Soc. London, Proc. (B) 34 (5-6): 61-64. —Kerrich, 1967.

Brit. Mus. (Nat. Hist.) Ent., Bul. 20 (5): 181-188. —Annecke and Mynhardt, 1970. Ent. Soc.

So. Africa, Jour. 33 (1): 42-47.

purpurea Ishii. Ont. s. to Va. Introduced. Host: *Pseudococcus comstocki* (Kuw.).

Clausenia purpurea Ishii, 1923. Japan Dept. Agr. and Com., Imp. Plant Quar. Sta., Bul. 3:

100-101. ♂, ♀.

Biology: Cox, 1940. Jour. Econ. Ent. 33 (3): 446. —Rivnay, 1942. Bul. Soc. Fouad Ier Ent. 26:

1-19. —Clancy, 1944. Jour. Econ. Ent. 37 (3): 450-451. —Haeussler and Clancy, 1944. Jour.

Econ. Ent. 37 (4): 503. —Hough, Clancy and Pollard, 1945. Jour. Econ. Ent. 38 (4): 423-425.

Morphology: Flanders, 1942. Ent. Soc. Amer., Ann. 35 (3): 252, 262.

TRIBE PAURIDIINI

Genus PAURIDIA Timberlake

Pauridia Timberlake, 1919. Hawaii. Ent. Soc., Proc. 4 (1): 206-207.

Type-species: *Pauridia peregrina* Timberlake. Orig. desig.

This monotypic genus has been employed in biological control programs against *Pseudococcus* spp. throughout the world.

peregrina Timberlake. Tex., Calif. Introduced. Host: *Planococcus citri* (Risso), *P. kraunhia* (Kuw.), *Pseudococcus maritimus* (Ehrh.).

Pauridia peregrina Timberlake, 1919. Hawaii. Ent. Soc. Proc. 4 (1): 208. ♂, ♀.

Biology: Armitage, 1920. Calif. Dept. Agr., Monthly Bul. 9: 446. —Essig, 1931. Hist. of Ent.,

pp. 361, 389. —Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, p. 36. —DeBach, 1964. Biol.

Control Insect Pests Weeds, p. 442.

TRIBE RHINOENCYRTINI

Genus RHINOENCYRTUS Mercet

Rhinoencyrtus Mercet, 1918. Soc. Espan. de Hist. Nat., Bol. 18 (3-4): 234-235.

Type-species: *Rhinoencyrtus malenotti* Mercet. Monotypic.

An unidentified species is found in Nebraska, Kansas, and Oklahoma.

Genus AENASIUS Walker

Aenasius Walker, 1846. Ann. and Mag. Nat. Hist. 17 (III): 181.

Type-species: *Eucyrtus Hyettus* Walker. Orig. desig.

This genus holds about 25 species which seem to be exclusively Neotropical in distribution. All known species are presumed primary parasites of the genera *Pseudococcus*, *Phenacoccus* and *Puto*.

Taxonomy: Compere, 1937. Hawaii. Ent. Soc., Proc. 9 (3): 383-404. — Kerrich, 1967. Brit. Mus. (Nat. Hist.) Ent., Bul. 20 (5): 195-225.

advenus Compere. Fla.

Aenasius advena Compere, 1937. Hawaii. Ent. Soc., Proc. 9 (3): 384, 388-389, 393. ♂, ♀.

Aenasius ianthinus Compere, 1937. Hawaii. Ent. Soc., Proc. 9 (3): 388, 391, 393-394. ♀.

flandersi Kerrich. Calif. Ecology: On *Pittosporum*.

Aenasius flandersi Kerrich, 1967. Brit. Mus. (Nat. Hist.) Ent., Bul. 20 (5): 204-205, 221. ♀.

maplei Compere. Calif. Host: *Pluto yuccae* (Coq.).

Aenasius maplei Compere, 1937. Hawaii. Ent. Soc., Proc. 9 (3): 384, 390, 397. ♂, ♀.

Biology: Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 55-57.

nitens Kerrich. Nebraska.

Aenasius nitens Kerrich, 1967. Brit. Mus. (Nat. Hist.) Ent., Bul. 20 (5): 211-212, 224. ♀.

paulistus Compere. California? Introduced, possibly established. Host: *Pseudococcus maritimus* (Ehrh.).

Aenasius paulistus Compere, 1937. Hawaii. Ent. Soc., Proc. 9 (3): 383-385, 401-403. ♂, ♀.

personatus Kerrich. Fla. Ecology: On *Hibiscus tiliaceus*.

Aenasius personatus Kerrich, 1967. Brit. Mus. (Nat. Hist.) Ent., Bul. 20 (5): 198, 200, 221. ♀.

Genus CHALCASPIS Howard

Chalcaspis Howard, 1895. U. S. Natl. Mus., Proc. 17: 606.

Type-species: *Chalcaspis pergandei* Howard. Monotypic.

Closely related to *Aenasius* but considerably smaller, *Chalcaspis* seems to have adapted itself to more xeric conditions than *Aenasius*. *Chalcaspis* consists of less than 10 species which are also mealybug parasites.

Taxonomy: Kerrich, 1967. Brit. Mus. (Nat. Hist.) Ent., Bul. 20 (5): 191-195.

arizonensis Girault. Ariz. Idaho, Mo., Wash., Calif. Host: *Phenacoccus solenopsis* Tinsley.

Chalcaspis arizonensis Girault, 1915. Ent. Soc. Amer., Ann. 8 (3): 280. ♀.

pergandei Howard. Mass., s. to D. C., S. Dak. s. to Tex.

Chalcaspis pergandei Howard, 1895. U. S. Natl. Mus., Proc. 17: 606. ♀.

phenacocci (Ashmead). Md. s. to Fla., w. to Iowa, Idaho, N. Mex., w. Calif.

Blepyrus phenacocci Ashmead, 1902. Canad. Ent. 34 (11): 301. ♂, ♀.

Biology: Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 115.

TRIBE TETRACNEMINI

Genus CALOCERINUS Howard

Calocerinus Howard, 1892. U. S. Natl. Mus., Proc. 15: 362, 368.

Type-species: *Tetracnemus floridanus* Ashmead. Monotypic.

floridanus (Ashmead). Fla.

Tetracnemus (!) *floridanus* Ashmead, 1885. Amer. Ent. Soc., Trans. 12: Proc. p. xviii. ♂.

Generic name a lapsus for *Tetracnemus*.

Taxonomy: Girault, 1917. Descr. Stellarum Nov., p. 7.

Genus ARHOPOIDEUS Girault

Arhopoideus Girault, 1915. Queensland Mus., Mem. 4: 174-175.

Type-species: *Arhopoideus brevicornis* Girault. Monotypic.

Hungariella Erdos, 1946. Ann. Hist. Nat., Nat. Mus. Hung. 39: 144.

Type-species: *Hungariella piceae* Erdos. Orig. desig.

The taxonomic status of members of the genus *Arhopoideus* has been confused but recently clarified by the work of Tachikawa (1974) and Annecke (unpublished). Part of the problem stems from the misinterpretation of *Tetracnemus* Westwood. *Arhopoideus* is comprised of less than 10 species all of which are mealybug parasites.

Taxonomy: Erdos, 1955. Acta Zool. (Budapest) 1 (3-4): 216-218. — Hoffer, 1959. Mus. Nat. Pragae, Acta Ent. 33: 13-15. — Hoffer, 1960. Mus. Nat. Pragae, Acta Faun. Ent. 6: 101-102. — Kerrich, 1967. Brit. Mus. (Nat. Hist.) Ent., Bul. 20 (5): 147, 154-166. — Tachikawa and Valentine, 1971. Shikoku Ent. Soc., Trans. 11 (1): 21-30. — Tachikawa, 1974. Shikoku Ent. Soc., Trans. 12 (1-2): 23-31.

peregrinus (Compere). Calif. Introduced. Host: *Pseudococcus calceolariae* (Mask.), *P. longispinus* (Targ.-Tozz.), *P. maritimus* (Ehrh.).
Tetracnemus peregrinus Compere, 1939. Calif. Univ., Pubs. Ent. 7 (4): 59-61. ♂, ♀.

Biology: Flanders, 1940. Jour. Econ. Ent. 33 (5): 757. — Flanders, 1944. Jour. Econ. Ent. 37 (2): 308-309. — DeBach, 1949. Ecology 30 (1): 16-24. — Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, p. 130.

pretiosus (Timberlake). Calif. Host: *Pseudococcus calceolariae* (Mask.), *P. longispinus* (Targ.-Tozz.), *P. maritimus* (Ehrh.).
Tetracnemus pretiosus Timberlake, 1929. Calif. Univ., Pubs. Ent. 5 (1): 5-11. ♂, ♀.

Biology: Compere and Smith, 1932. Hilgardia 6 (17): 585, 601-605, 609-617. — Quayle, 1932. Calif. Agr. Expt. Sta., Bul. 542: 51. — Clancy, 1934. Calif. Univ., Pubs. Ent. 6 (8): 231-248. — Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 114-115. — DeBach, 1949. Ecology 30 (1): 16-24. — Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, p. 130. — Bartlett and Lloyd, 1958. Jour. Econ. Ent. 51 (1): 92. — DeBach, 1974. Biol. Control by Nat. Enem., p. 138.

Genus TETRACNEMUS Westwood

Tetracnemus Westwood, 1837. Mag. Nat. Hist. 1: 258.

Type-species: *Tetracnemus diversicornis* Westwood. Monotypic.

Tetracladia Howard, 1892. U. S. Natl. Mus., Proc. 15: 367.

Type-species: *Tetracladia texana* Howard. Desig. by Ashmead, 1900.

Paracalocerinus Girault, 1915. Queensland Mus., Mem. 4: 142.

Type-species: *Paracalocerinus australiensis* Girault. Orig. desig.

Masia Mercet, 1920 (1919). Soc. Espan. de Hist. Nat., Bol. 19 (9-10): 470-472.

Type-species: *Masia bifasciatella* Mercet. Orig. desig.

Anusiella Mercet, 1923. Soc. Espan. de Hist. Nat., Bol. 23 (6): 287-289.

Type-species: *Anusiella heydeni* Mercet. Orig. desig.

Placoceras Erdos, 1946. Frag. Faun. Hung. 9: 1.

Type-species: *Placoceras colocense* Erdos. Monotypic.

Comperencyrtus De Santis, 1964. Com. Cien., Ann., Buenos Aires, An. 4: 106.

Type-species: *Comperencyrtus maculipennis* De Santis. Orig. desig.

Taxonomy: Erdos, 1955 Acta Zool. (Budapest) 1 (3-4): 221-229. — Hoffer, 1960. Mus. Nat. Pragae, Acta Faun. Ent. 6: 101-102. — Kerrich, 1967. Brit. Mus. (Nat. Hist.) Ent., Bul. 20 (5): 149.

americanus (Girault). Kans., Va.

Paracalocerinus americanus Girault, 1916. Ent. News 27 (5): 225-226. ♀.

gracilis (Howard). Fla.

Tetracladia gracilis Howard, 1892. U. S. Natl. Mus., Proc. 15: 362, 368. ♂.

marilandius (Girault). Md., Ill.

Paracalocerinus marilandia Girault, 1917. Chalcidoidea Nova Marilandensis I, p. 1-2. ♀.

Taxonomy: Dozier, 1933. Ent. Soc. Wash., Proc. 35 (6): 94-95.

tertius (Girault). Calif., Utah. Host: *Eriococcus* sp.

Paracalocerinus tertius Girault, 1917. Descr. Stellarum Nov., pp. 7-8. ♀.

texanus (Howard). Tex.

Tetracladia texana Howard, 1892. U. S. Natl. Mus., Proc. 15: 362, 367-368. ♂.

Genus ANARHOPUS Timberlake

Anarhopus Timberlake, 1929. Calif. Univ., Pubs. Ent. 5 (2): 15-18.

Type-species: *Anarhopus sydneyensis* Timberlake. Orig. desig.

sydneyensis Timberlake. Calif. Host: *Pseudococcus calceolariae* (Mask.), *P. longispinus* (Targ.-Tozz.).

Anarhopus sydneyensis Timberlake, 1929. Calif. Univ., Pubs. Ent. 5 (2): 5, 18. ♀.

Biology: Compere and Flanders, 1934. Jour. Econ. Ent. 27 (5): 966-973. — Flanders, 1940. Calif. Citrog. 25 (5): 146, 154-155. — Clancy, 1944. Jour. Econ. Ent. 37 (3): 450. — Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 59-60. — DeBach, 1949. Ecology 30 (1): 16-25. — Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, pp. 75, 130. — Flanders, 1959. Jour. Econ. Ent. 52 (1): 75.

UNPLACED TAXA OF SUBFAMILY TETRACNEMINAE

The following genera have not been placed in tribes of the Tetracneminae.

Genus CIRRHENCYRTUS Timberlake

Cirrhencyrtus Timberlake, 1918. Calif. Univ., Pubs. Ent. 1 (8): 360-362.

Type-species: *Pseudococcobius ehrhorni* Timberlake. Orig. desig.

ehrhorni (Timberlake). Calif. Host: *Dysmicoccus ryani* (Coq.), *Spilococcus sequoiae* (Colm.).

Pseudococcobius ehrhorni Timberlake, 1916. U. S. Natl. Mus., Proc. 50: 564. ♀.

Taxonomy: Timberlake, 1918. Calif. Univ., Pubs. Ent. 1 (8): 362.

Biology: Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 115.

Genus ECTROMATOPSIS Compere

Ectromatopsis Compere, 1947. Calif. Univ., Pubs. Ent. 8 (1): 13-15.

Type-species: *Ectroma americanum* Howard. Orig. desig.

americana (Howard). N. Mex. w. to Calif. Host: *Phenacoccus solani* Ferris.

Ectroma americanum Howard, 1898. U. S. Natl. Mus., Proc. 21: 248. ♀.

Taxonomy: Compere, 1947. Calif. Univ., Pubs. Ent. 8 (1): 13, 14, 15.

Biology: Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 78-80.

Genus NEODUSMETIA Kerrich

Neodusmetia Kerrich, 1964. Entomophaga 9 (1): 76.

Type-species: *Dusmetia sangwani* Subba Rao. Orig. desig.

Taxonomy: Burks, 1958 (1957). Brooklyn Ent. Soc., Bul. 52 (4): 124-125. — Richards, 1958.

Roy. Ent. Soc. London, Proc. (B) 27 (3-4): 61. — Kerrich, 1964. Entomophaga 9 (1): 75-77.

sangwani (Subba Rao). Fla. w. to Ariz. Host: *Antonina graminis* (Mask.).

Dusmetia sangwani Subba Rao. 1957. Ind. Acad. Sci., Proc. 46: 385-386. ♀, ♂.

Dusmetia indica Burks, 1958 (1957). Brooklyn Ent. Soc., Bul. 52 (4): 125-127. ♀, ♂.

Biology: Dean, Schuster and Bailey, 1961. Jour. Econ. Ent. 54 (5): 953. — Beardsley, 1961.

Hawaii. Ent. Soc., Proc. 17 (3): 327. — Kerrich, 1964. Entomophaga 9 (1): 75. — DeBach, 1974. Biol. Control by Nat. Enem., p. 168-169.

Genus PARALEUROCERUS Girault

Paraleurocerus Girault, 1915. N. Y. Ent. Soc., Jour. 23 (3): 172.

Type-species: *Paraleurocerus bicoloripes* Girault. Orig. desig.

Gibberella Miller, 1961. Canad. Ent. 98 (6): 494.

Type-species: *Gibberella scutellata* Miller. Orig. desig.

bicoloripes Girault. N. S., Ont., Mass., Tex. Host: *Cameraria caryaefoliella* (Clem.),

Lithocolletis sp. mining cherry leaf, *L.* spp. on *Alnus crispa*, *Carya* sp., *Corylus* sp.,

Fagus sp., *Hamamelis* sp., *Prunus* sp., *L. lucetiella* Clem. on *Tilia americana*.

Paraleurocerus bicoloripes Girault, 1915. N. Y. Ent. Soc., Jour. 23 (3): 172-173. ♀, ♂.

Gibberella scutellata Miller, 1961. Canad. Ent. 98 (6): 495, 496. ♂, ♀.

Biology: Fitzgerald and Simeone, 1971. Ent. Soc. Amer., Ann. 64 (4): 774-777 (polyembryony).

Genus TETRACNEMOPSIS Ashmead

Tetracnemopsis Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 330, 358.

Type-species: *Tetracnemus westwoodi* Cockerell. Orig. design.

westwoodi (Cockerell). Que., Me., Colo. Host: *Phenacoccus minimus* Tinsley.

Tetracnemus westwoodi Cockerell, 1898. Canad. Ent. 30 (8): 224. ♂, ♀.

SUBFAMILY ENCYRTINAE

TRIBE APHYCINI

Genus ACEROPHAGUS Smith

Acerophagus Smith, 1880. No. Amer. Ent. 1: 83.

Type-species: *Acerophagus coccois* Smith. Monotypic.

Rhopoideus Howard, 1898. U. S. Natl. Mus., Proc. 21: 235.

Type-species: *Rhopoideus citrinus* Howard. Monotypic.

This genus is comprised of fewer than fifteen species and seems restricted to North America and the Caribbean.

Taxonomy: Timberlake, 1916. U. S. Natl. Mus., Proc. 50: 574-579. — Timberlake, 1918. Calif.

Univ., Pubs. Ent. 1 (8): 347-351. — Rosen, 1969. Hilgardia 40 (2): 41-72.

antennalis Rosen. Calif. Host: *Dysmicoccus ryani* (Coq.).

Acerophagus antennalis Rosen, 1969. Hilgardia 40 (2): 42, 43, 44, 45, 50-52. ♂, ♀.

californicus Rosen. Calif. Host: *Spilococcus pressus* Ferris.

Acerophagus californicus Rosen, 1969. Hilgardia 40 (2): 43, 45, 68-69. ♀.

citrinus (Howard). Calif., Nev. Host: *Quadraspiliotus perniciosus* (Comst.)?, *Aulacaspis rosae* (Bouche).

Rhopoideus citrinus Howard, 1898. U. S. Natl. Mus., Proc. 21: 235. ♀.

coccois Smith. Mass. s. to N. J., w. to Ill., Calif. Host: *Phenacoccus acericola* King, *Pulvinaria vitis* (L.).

Acerophagus coccois Smith, 1880. No. Amer. Ent. 1: 84. ♀.

Biology: Howard, 1881. U. S. Dept. Agr., Ann. Rept. for 1880, p. 361.

erii Timberlake. Utah. Host: *Amonostherius lichtensioides* (Ckll.).

Acerophagus erii Timberlake, 1916. U. S. Natl. Mus., Proc. 50: 575, 577-578. ♀, ♂.

fasciipennis Timberlake. Calif. Host: *Anisococcus crawii* (Coq.).

Acerophagus fasciipennis Timberlake, 1918. Calif. Univ., Pubs. Ent. 1 (8): 347, 348-349. ♂, ♀.

Biology: Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 54, 109.

gutierreziae Timberlake. N. Mex. Host: *Spilococcus gutierreziae* (Ckll.).

Acerophagus gutierreziae Timberlake, 1916. U. S. Natl. Mus., Proc. 50: 575, 577. ♀, ♂.

notativentris (Girault). Calif. Host: *Pseudococcus maritimus* (Ehrh.), *P. sp.* on grape.

Pseudophegus notativentris Girault, 1917. Descr. Hym. Chalcidoid Variorum Cum Observ. III, p. 10. ♀, ♂.

Biology: Clausen, 1924. Calif. Univ., Pubs. Ent. 3 (2): 256-266, 271-274. — Maple, 1947. Calif.

Univ., Pubs. Ent. 8 (2): 54. — Flanders, 1959. Jour. Econ. Ent. 52 (1): 72.

pallidus Timberlake. Calif. Host: *Phenacoccus solani* Ferris, *Pseudococcus maritimus* (Ehrh.), *Spilococcus atriplicis* (Ckll.), *S. eriogoni* (Ehrh.).

Acerophagus pallidus Timberlake, 1918. Calif. Univ., Pubs. Ent. 1 (8): 348, 350-351. ♀, ♂.

Biology: Flanders, 1944. Jour. Econ. Ent. 37 (2): 312. — Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 54-55, 109.

texanus (Howard). Tex. Host: *Ferrisia virgata* (Ckll.).

Aphyus texanus Howard, 1898. U. S. Natl. Mus., Proc. 21: 245. ♀.

Genus AENASIOIDEA Girault

Aenasioidea Girault, 1911. Canad. Ent. 43 (5): 171-173.

Type-species: *Aenasioidea latiscapus* Girault. Orig. desig.

Taxonomy: Timberlake, 1916. U. S. Natl. Mus., Proc. 50: 579-585. — Mercet, 1925. Eos 1 (1): 30-31. — Hoffer, 1955. Acta Mus. Nat. Pragae 11 B (1): 1-22. — Compere and Annecke, 1960. Jour. Ent. Soc. So. Africa 23 (2): 386, 382.

armitagei Compere. Calif. Host: *Kermes*? on native oak.

Aenasioidea armitagei Compere, 1926. Calif. Univ., Pubs. Ent. 4 (1): 30-31. ♀.

ferrierei Burks. Md. Host: *Aclerda andropogonis* McConnell on *Andropogon virginicus*.

Aenasioidea ferrierei Burks, 1964. Entomophaga 9 (1): 18-20.

kermicola Timberlake. Utah, Calif. Host: *Kermes galliformis* Riley, *K. nigropunctatus* Ehrh. and Kkll.

Aenasioidea kermicola Timberlake, 1916. U. S. Natl. Mus., Proc. 50: 580, 583-584. ♀, ♂.

latiscapus Girault. Ill. Host: *Kermes pubescens* Bogue.

Aenasioidea latiscapus Girault, 1911. Canad. Ent. 43 (5): 173-174. ♀.

pulchella (Howard). N. Y., N. J., Okla. Host: *Kermes pubescens* Bogue, *K. sp.* on *Quercus velutina*.

Aphyus pulchellus Howard, 1898. U. S. Natl. Mus., Proc. 21: 242. ♀.

trimblei Dozier. Pa. Host: *Lecanium quercifex* Fitch.

Aenasioidea trimblei Dozier, 1935. Ent. Soc. Wash., Proc. 37 (9): 183-184. ♀, ♂.

Genus APHYCUS Mayr

Aphyus Mayr, 1876 (1875). Zool.-Bot. Gesell. Wien, Verhandl. 25: 695.

Type-species: *Encyrtus apicalis* Dalman. Desig. by Ashmead, 1900.

Pseudococcobius Timberlake, 1916. U. S. Natl. Mus., Proc. 50: 563.

Type-species: *Aphyus terryi* Fullaway. Orig. desig.

Waterstonia Mercet, 1917. Soc. Espan. de Hist. Nat., Bol. 17 (5): 268.

Type-species: *Waterstonia prima* Mercet. Orig. desig.

Euaphycus Mercet, 1921. Fauna Iberica, Himen., Encirtidos, pp. 197-212.

Type-species: *Encyrtus hederaceus* Westwood. Desig. by Mercet.

It is difficult to estimate the size of *Aphyus* because of the confusion which has existed over the genera *Metaphycus* and *Aphyus*. In the 1951 Hymenoptera Catalog the species of *Metaphycus* were synonymized under *Aphyus*. Compere and Annecke (1960) discussed the problem and indicated that sound structural differences exist between the genera. Graham (1969) noted that Mercet misidentified *Encyrtus hederaceus* Westwood, the type-species of *Euaphycus*. Most species of *Euaphycus* fall under *Metaphycus* whereas the type-species is assignable to *Aphyus*.

Taxonomy: Timberlake, 1916. U. S. Natl. Mus., Proc. 50: 587-639. — Mercet, 1917. Soc. Espan. de Hist. Nat., Bol. 77 (2): 128-139. — Mercet, 1925. Eos 1 (1): 14-18. — Ishii, 1928. Imp. Agr.

Exp. Sta. Japan, Bul. 3 (2): 121-123. — Compere, 1947. Calif. Univ., Pubs. Ent. 8 (1): 1-13.

— Hoffer, 1955. Acta Soc. Ent. Cechosl. 51: 82-94. — Alam, 1957. Roy. Ent. Soc. London,

Trans. 109 (15): 434-438. — Compere and Annecke, 1960. Ent. Soc. So. Africa, Jour. 23 (2):

377, 378. — Trjapitzin, 1962. Zool. Inst. Leningrad, Trudy 30: 281-286. — Graham, 1969.

Polski Pismo Ent. 39 (2): 224-228.

annulipes (Ashmead). Ont. s. to Fla. Host: *Lecanium corni* Bouche, *L. nigrofasciatum* Perg., *L. sp.* on *Quercus nigra*.

Coccophagus annulipes Ashmead, 1882. Canad. Ent. 14 (2): 37. ♀.

apicalis (Dalman). Establishment in U. S. questionable.

Encyrtus apicalis Dalman, 1820. Svenska Vetensk. Akad., Handl. 41: 153-154.

Taxonomy: Mercet, 1921. Fauna Iberica, Himen., Encirtidos, pp. 228-231.

bifasciatus (Timberlake). N. H. Host: *Phenacoccus sp.* on apple.

Pseudococcobius bifasciatus Timberlake, 1916. U. S. Natl. Mus. Proc. 50: 564, 566-567. ♀, ♂.

Taxonomy: Compere, 1939. Calif. Univ., Pubs. Ent. 7 (4): 62.

brunneus Howard. N. Y., N. J. Host: *Aulacaspis rosae* (Bouche).

Aphyus brunneus Howard, 1885. U. S. Dept. Agr., Bur. Ent., Bul. 5: 17, 31, 36. ♀.

Aphyus brunneus Dalla Torre, 1898. Cat. Hym., v. 5, p. 251. Unjustified emendation.

ceroplastis Howard. Fla.?, N. Mex. Host: *Ceroplastes floridensis* Comst.? *C. irregularis* Ckll., *C. sp.* on *Artemisia*.

Aphyus ceroplastis Howard, 1885. U. S. Dept. Agr., Bur. Ent., Bul. 5: 18, 31, 41. ♀, ♂.

cockerelli Howard. N. Mex. Host: *Lecanium* sp. on osage orange.

Aphyus cockerelli Howard, 1898. U. S. Natl. Mus., Proc. 21: 243. ♀.

hederaceus (Westwood). Establishment in U. S. questionable. Host: *Pulvinaria accricola* (W. and R.).

Encyrtus hederaceus Westwood, 1837. London, Edinb. and Dublin Phil. Mag. and Jour. Sci. 10 (3): 441. ♀.

Taxonomy: Howard, 1900. U. S. Dept. Agr., Div. Ent., Bul. 22: 23. —Compere, 1957. Portici R. Lab. Ent. Agr., Bol. 15: 222. —Graham, 1958. Ent. Tidskr. 79 (3-4): 173. —Graham, 1969. Polskie Pismo Ent. 39 (2): 224-225.

immaculatus Howard. Calif. Host: *Aonidiella aurantii* (Mask.).

Aphyus immaculatus Howard, 1894. U. S. Dept. Agr., Insect Life 6 (3): 235-236. ♂.

Genus BLASTOTHRIX Mayr

Blastothrix Mayr, 1876 (1875). Zool.-Bot. Gesell. Wien, Verhandl. 25: 697.

Type-species: *Encyrtus sericeus* Dalman. Desig. by Ashmead, 1900.

Anaggyropsis Girault, 1917. Insecutor Inscitiae Menstruus 5 (7-9): 136.

Type-species: *Anaggyrus purpureus* Girault. Orig. desig.

The cosmopolitan genus *Blastothrix* has been poorly studied and at present consists of approximately thirty-five species. All species appear to be primary, internal parasites of coccids and kermococcids. Undoubtedly, the North American fauna is larger than indicated here.

Taxonomy: Rusehka, 1923 (1922). Zool.-Bot. Gesell. Wien, Verhandl. 72 (2): 1-6. —Girault, 1924. Homo Perniciosus and New Hymen. (Private Pub.), p. 4. —Alam, 1961. Beitr. zur Ent. 11 (7-8): 807-812. —Sugonyayev, 1965. Ent. Rev. 44 (2): 189-198. —Graham, 1969. Polskie Pismo Ent. 39 (2): 241-243.

adjutabilis Howard. Va. s. to Fla. Host: *Lecanium* spp. on *Crataegus*, Japanese persimmon and oak.

Blastothrix adjutabilis Howard, 1881. U. S. Dept. Agr., Ann. Rpt. for 1880, pp. 365-366. ♀.

incerta Howard. Fla. Host: *Lecanium* sp.? on mesquite, *Lecanium* sp.

Blastothrix incerta Howard, 1881. U. S. Dept. Agr., Ann. Rpt. for 1880, p. 366. ♂.

longipennis Howard. Ont. s. to N. Y., D. C. w. to Minn.; N. Mex. w. to Calif., B. C. Host:

Kermes pubescens Bogue, *Lecanium corni* Bouche, *L. fletcheri* Ckll., *L. pruinosum* Coq., *L. quercifex* Fitch.

Blastothrix longipennis Howard, 1881. U. S. Dept. Agr., Ann. Rept. for 1880, p. 366. ♀.

Taxonomy: Girault, 1915. Ent. Soc. Amer., Ann. 8 (3): 274.

Biology: Glendenning, 1931. Brit. Columbia Ent. Soc., Proc. 28 (1): 30-31. —Lyne, 1934. Calif. Dept. Agr., Monthly Bul. 23: 232. —Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 67-68. —Huffaker, 1971. Biol. Control, pp. 271.

sericea (Dalman). Que. s. to Pa., La., B. C. Host: *Kermes* sp. on ash, *Lecanium coryli* (L.), *L. nigrofasciatum* Perg., *Baccha fascipennis* Wied.?

Encyrtus sericeus Dalman, 1820. Svenska Vetensk. Akad., Handl. 41: 357. ♀.

Taxonomy: Girault, 1915. Ent. Soc. Amer. Ann. 8 (3): 274. —Silvestri, 1919. Lab. Zool. Gen. e Agr. Portici, Bol. 13: 163-173. —Mercet, 1921. Fauna Iberica, Himen., Encirtidos, pp. 249-251.

Biology: Glendenning, 1933. Canad. Ent. 65 (8): 169-171. —Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 68-69. —Huffaker, 1971. Biol. Control, pp. 318-319.

Genus **BOTHRIOCRAERA** Timberlake

Bothriocraera Timberlake, 1916. U. S. Natl. Mus., Proc. 50: 567-568.

Type-species: *Bothriocraera flavipes* Timberlake. Orig. desig.

bicolor Compere and Zinna. Introduced, possibly established.

Bothriocraera bicolor Compere and Zinna, 1955. Lab. Ent. Agr. Portici, Bol. 14: 94, 95, 101-105. ♂, ♀.

flavipes Timberlake. Utah. Host: Mealybug on *Elymus*.

Bothriocraera flavipes Timberlake, 1916. U. S. Natl. Mus., Proc. 50: 568-569. ♂, ♀.

Genus **ERYTHRAPHYCUS** Compere

ErythrAPHYCUS Compere, 1947. Calif. Univ., Pubs. Ent. 8 (1): 7-8, 10.

Type-species: *ErythrAPHYCUS argyrocomus* Compere. Orig. desig.

This small but distinctive genus can readily be identified by its bright scarlet coloration as the name implies. Species of *ErythrAPHYCUS* apparently parasitize eriococcids. An undescribed species parasitizes a pseudococcid of the genus *Stemmatomerinx*.

argyrocomus Compere. Calif. Host: *Eriococcus* sp. on eroton, asters, and *Ericameria* sp.

ErythrAPHYCUS argyrocomus Compere, 1947. Calif. Univ., Pubs. Ent. 8 (1): 8, 10-11. ♂, ♀.

Biology: Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 84-86, 88.

calvus Compere. Calif.

ErythrAPHYCUS calvus Compere, 1947. Calif. Univ., Pubs. Ent. 8 (1): 10, 11-12. ♀.

matteolus Compere. Calif.

ErythrAPHYCUS matteolus Compere, 1947. Calif. Univ., Pubs. Ent. 8 (1): 10, 11. ♂.

Genus **MELANAPHYCUS** Compere

MelanAPHYCUS Compere, 1947. Calif. Univ., Pubs. Ent. 8 (1): 4, 5.

Type-species: *Pseudococcobius fumipennis* Timberlake. Orig. desig.

clauseni (Timberlake). Calif. Host: *Amonostherium lichtensioides* (Ckll.), *A. sp.*? on cactus,

Eriococcus adenostomae Ehrh., *E. palustris* Dodds.

Pseudococcobius clauseni Timberlake, 1918. Calif. Univ., Pubs. Ent. 1 (8): 358-360. ♂.

Biology: Dodds, 1923. Jour. Ent. and Zool. 15 (4): 57-60.

fumipennis (Timberlake). Calif. Host: *Eriococcus* sp., *Phenacoccus solani* Ferris,

Pseudococcus solani (Ckll.).

Pseudococcobius fumipennis Timberlake, 1918. Calif. Univ., Pubs. Ent. 1 (8): 356-258. ♂, ♀.

fuscipennis (Howard). Calif. Host: *Lecanium corni* Bouche.

Aphyus fuscipennis Howard, 1898. U. S. Natl. Mus., Proc. 21: 241-242. ♀.

Taxonomy: Timberlake, 1916. U. S. Natl. Mus., Proc. 50: 597-599. —Compere, 1947. Calif. Univ., Pubs. Ent. 8 (1): 5-6.

Biology: Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 115.

Genus **METAPHYCUS** Mercet

MetAPHYCUS Mercet, 1917. Soc. Espan. de Hist. Nat., Bol. 17 (2): 129, 138-139.

Type-species: *MetAPHYCUS zebratus* Mercet. Monotypic.

As indicated earlier, controversy has existed over the status of *Aphyus* and *Metaphycus*. Most encyrtid specialists now believe the genera are distinct and Trjapitzin (1973) has placed them in separate subtribes of the Aphycini.

Taxonomy: Mercet, 1925. Eos 1 (1): 28. —Timberlake, 1926. Hawaii. Ent. Soc., Proc. 6 (2): 310. —Compere, 1940. Bul. Ent. Res. 31 (1): 7-13, 27. —Gomes, 1941. Esc. Nac. de Agron. (Rio de Janeiro), Bol. 2: 30-34. —Compere, 1947. Calif. Univ., Pubs. Ent. 8 (1): 2-5. —Alam, 1957. Roy. Ent. Soc. London, Trans. 109 (15): 425-426. —Compere, 1958 (1957). Portici Lab. Ent. Agr., Bol. 15: 221-230. —Compere and Annecke, 1960. Ent. Soc. So. Africa, Jour. 23

(2): 376-378, 382-385. — Sugonyayev, 1960. Ent. Rev. 39 (2): 235-250. — Trjapitzin, 1967. Akad. Nauk SSSR Zool. Inst., Trudy 41: 185-186. — Graham, 1969. Polskie Pismo Ent. 39 (2): 229-232. — Annecke and Mynhardt, 1971. Rev. Zool. Bot. Africaines. 83 (3-4): 322-360. — Annecke and Mynhardt, 1972. Rev. Zool. Bot. Africaines. 85 (3-4): 227-274. — Trjapitzin, 1973. Ent. Rev. 52 (2): 287-295.

alberti (Howard). Calif. Host: *Coccus hesperidum* L.

Aphygus alberti Howard, 1898. U. S. Natl. Mus., Proc. 21: 241-247. ♂, ♀.

Taxonomy: Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 94-95. — Compere, 1958 (1957). Portici Lab. Ent. Agr., Bol. 15: 221-230.

Biology: Timberlake, 1913. Jour. Econ. Ent. 6 (3): 294-295.

californicus (Howard). Pa., Md., Calif. Host: *Lecanium nigrofasciatum* Perg.

Aphygus californicus Howard, 1898. U. S. Natl. Mus., Proc. 21: 241, 245. ♀.

Taxonomy: Compere and Annecke, 1961. Ent. Soc. So. Africa, Jour. 24 (1): 34. — Annecke and Mynhardt, 1972. Rev. Zool. Bot. Africaines. 85 (3-4): 272.

Biology: Huffaker, 1971. Biol. Control, p. 271.

coquilletti (Howard). Utah, Calif. Host: *Pulvinaria bigeloviae* Ckll.

Aphygus coquilletti Howard, 1898. U. S. Natl. Mus., Proc. 21: 241, 244. ♀.

Taxonomy: Timberlake, 1929. Pan-Pacific Ent. 6 (1): 43.

eriococci (Timberlake). Fla., Tex., Utah, Calif. Host: *Eriococcus quercus* (Comst.), *Coccus hesperidum* (L.).

Aphygus eriococci Timberlake, 1916. U. S. Natl. Mus., Proc. 50: 631-632. ♀.

eruptor (Howard). Va. s. to Fla. Host: *Ceroplastes floridensis* Comst., *Ceroplastes* sp.?

Aphygus eruptor Howard, 1881. U. S. Dept. Agr., Ann. Rept. for 1880, p. 364-365. ♂, ♀.

Biology: Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 115.

flammeus Compere. Calif. Host: *Lecanium quercifex* Fitch.

Metaphygus flammeus Compere, 1947. Calif. Univ., Pubs. Ent. 8 (1): 13. ♂, ♀.

Biology: Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 95.

flavus (Howard). N. Y. s. to Fla., w. to Tex. Host: *Coccus hesperidum* L., *C.*

pseudomagnoliarum (Kuw.), *Lepidosaphes gloverii* (Pack.), *Pulvinaria acericola* (W. and R.), *Saissetia oleae* (Oliv.), *Tachardia* sp., *Tonnemeyella liriodendri* (Gmel.).

Aphygus flavus Howard, 1881. U. S. Dept. Agr. Ann. Rept. for 1880, p. 365. ♀.

Biology: Huffaker, 1971. Biol. Control, p. 463.

helvolus (Compere). Calif. Host: *Coccus hesperidum* L., *C. pseudomagnoliarum* (Kuw.), *Lecanium corni* Bouche, *Parasaissetia nigra* (Nietn.), *Saissetia coffeae* (Walker), *S. oleae* (Oliv.).

Aphygus helvolus Compere, 1926. Calif. Univ., Pubs. Ent. 4 (1): 25-29. ♂, ♀.

Taxonomy: Compere, 1958 (1957). Portici Lab. Ent. Agr., Bol. 15: 221-230. — Compere and Annecke, 1960. Ent. Soc. So. Afr., Jour. 23 (2): 375-389. — Annecke, 1964. Rep. So. Afr. Dept. Agr. Tech. Serv., Ent. Mem. 7: 11-13.

Biology: Smith and Compere, 1928. Calif. Univ., Pubs. Ent. 4 (9): 242, 274. — Flanders, 1942. Jour. Econ. Ent. 35 (5): 690-695. — Woglum *et al.*, 1947. Jour. Econ. Ent. 40 (5): 819.

— Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, pp. 80-81. — Flanders, 1959. Jour. Econ. Ent. 52 (1): 74; 52 (4) 596-599. — Damaino, 1963. Rev. di Agr. Subtrop. e Trop. 57: 452.

— Huffaker, 1971. Biol. Control, pp. 76, 265. — van den Bosch and Messenger, 1973. Biol. Control, pp. 52, 59, 66, 77, 78.

Morphology: Flanders, 1942. Ent. Soc. Amer., Ann. 35 (3): 253, 262-265.

howardi (Cockerell). N. Mex. w. to Calif. Host: *Eriococcus tinsleyi* Ckll., *E. sp.* on *Ericameria*.

Aphygus howardi Cockerell, 1898. Canad. Ent. 30 (10): 276. ♀.

Taxonomy: Compere, 1947. Calif. Univ., Pubs. Ent. 8 (1): 12.

Biology: Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 94-97.

- johnsoni** (Howard). Ont., Que. s. to N. C., w. to Ill. Host: *Coccus hesperidum* L., *Kermes* sp.
Lecanium corni Bouche, *L. nigrofasciatum* Perg.
Aphycus johnsoni Howard, 1898. U. S. Natl. Mus., Proc. 21: 241, 244. ♀.
- kincaidi** Timberlake. Wash. Host: *Lecanium coryli* (L.).
Metaphycus kincaidi Timberlake, 1929. Pan-Pacific Ent. 6 (1): 43-45. ♂, ♀.
- kingi** (Timberlake). Mass., Ohio. Host: *Pulvinaria* sp.
Aphycus kingi Timberlake, 1916. U. S. Natl. Mus., Proc. 50: 589, 613-614. ♀.
- lecanii** (Howard). Calif. Host: *Lecanium corni* Bouche, *L. pubescens* Ehrh., *L. quercifex* Fitch,
Physokermes insignicola (Craw).
Aphycus lecanii Howard, 1898. U. S. Natl. Mus., Proc. 21: 240, 242. ♀ (♂ misdet.).
- Biology: Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 115.
- lounsburyi** (Howard). Mass., Calif. Host: *Saissetia oleae* (Oliv.).
Aphycus lounsburyi Howard, 1898. U. S. Natl. Mus., Proc. 21: 241, 244. ♀.
- Taxonomy: Smith and Compere, 1928. Calif. Univ., Pubs. Ent. 4 (9): 275-292. —Annecke and Mynhardt, 1971. Rev. Zool. Bot. Africaines 83 (3-4): 335-338, 355.
- Biology: Clausen, 1942. Jour. Econ. Ent. 35 (5): 748. —Flanders, 1942. Ent. Soc. Amer., Ann. 35 (2): 252, 262. —Flanders, 1942. Jour. Econ. Ent. 35 (5): 696. —Flanders, 1943. Jour. Econ. Ent. 36 (6): 922-925. —Flanders, 1944. Jour. Econ. Ent. 37 (3): 409. —Maple, 1947. Univ. Calif. Pubs., Ent. 8 (2): 95, 97-99. —Woglum *et al.*, 1947. Jour. Econ. Ent. 40 (6): 819. —Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, p. 81. —Beardsley, 1962. Hawaii. Ent. Soc., Proc. 18 (1): 16. —DeBach, 1964. Biol. Control Insect Pests and Weeds, pp. 318, 411, 475, 682. —DeBach, 1974. Biol. Control by Nat. Enem, pp. 28, 29, 286.
- Morphology: Compere, 1947. Calif. Univ., Pubs. Ent. 8 (1): 8-9.
- luteolus** (Timberlake). Calif. Host: *Coccus hesperidum* L., *C. pseudomagnoliarum* (Kuw.),
Lecanium corni Bouche, *Saissetia oleae* (Oliv.).
Aphycus luteolus Timberlake, 1916. U. S. Natl. Mus., Proc. 50: 591, 592, 636-637. ♂, ♀.
- Taxonomy: Compere, 1958 (1957). Portici Lab. Ent. Agr., Bol. 15: 229. —Smith and Compere, 1928. Calif. Univ., Pubs. Ent. 4 (9): 274-275. —Compere and Annecke, 1960. Ent. Soc. So. Afr., Jour. 23 (2): 385.
- Biology: Flanders, 1942. Jour. Econ. Ent. 35 (2): 263. —Flanders, 1942. Jour. Econ. Ent. 35 (6): 832-833. —Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 96, 99-100. —Woglum *et al.*, 1947. Jour. Econ. ent. 40 (6): 819-820. —Flanders, 1959. Jour. Econ. Ent. 52 (1): 74; 52 (4): 596-599. —DeBach, 1964. Biol. Control of Insect Pests and Weeds, pp. 351, 451. —Huffaker, 1971. Biol. Control, p. 79.
- maculipennis** (Timberlake). Mass. Host: *Lecanium corni* Bouche.
Aphycus maculipennis Timberlake, 1916. U. S. Natl. Mus., Proc. 50: 589, 591, 593-594. ♂, ♀.
- Taxonomy: Annecke and Mynhardt, 1971. Rev. Zool. Bot. Africaines 83 (3-4): 357.
- maculipes** (Howard). Ont., Mass. s. to S. C., w. to Ill. Host: *Coccus hesperidum* L., *Lecanium corni* Bouche, *L. sp.* on *Quercus nigra*, *L. sp.*
Aphycus maculipes Howard, 1885. U. S. Dept. Agr., Bur. Ent., Bul. 5: 18-19, 31, 41. ♂, ♀.
- mexicanus** (Howard). Pa., La. Host: *Ceroplastes cirripediformis* Comst.
Aphycus mexicanus Howard, 1898. U. S. Natl. Mus., Proc. 21: 241, 247. ♀.
- oregonensis** (Howard). Oreg. Host: *Pulvinaria* sp. on Oregon flowering currant, *P. sp.* on *Ribes*.
Aphycus oregonensis Howard, 1898. U. S. Natl. Mus., Proc. 21: 241, 246. ♀ (♂ misdet.).
- physokermis** (Timberlake). Calif. Host: *Physokermes insignicola* (Craw).
Aphycus physokermis Timberlake, 1916. U. S. Natl. Mus., Proc. 50: 589, 591, 606-607. ♂, ♀.
- Taxonomy: Compere and Annecke, 1960. Ent. Soc. So. Afr., Jour. 23 (2): 385. —Annecke and Mynhardt, 1972. Rev. Zool. Bot. Africaines 85 (3-4): 270-271.
- psyllidis** Compere. Calif. Host: *Paratrioza cockerelli* (Sule).
Metaphycus psyllidis Compere, 1943. Pan-Pacific Ent. 19 (2): 71-73. ♂, ♀.

- Taxonomy: Compere and Annecke, 1960. Ent. Soc. So. Afr., Jour. 23 (2): 385. —Annecke and Mynhardt, 1972. Rev. Zool. Bot. Africaines 85 (3-4): 271.
- pulvinariae** (Howard). Cosmopolitan. Host: *Lecanium corni* Bouche, *L. fletcheri* Ckll., *L. nigrofasciatum* Perg., *L. sp.* on Japanese persimmon, *L. sp.* on wild goose plum, *Parasaissetia nigra* (Nietn.), *Pulvinaria acericola* (W. and R.), *P. vitis* (L.), *P. sp.* on plum, *P. sp.* on willow.
- Aphycus pulvinariae* Howard, 1881. U. S. Dept. Agr., Ann. Rept. for 1880, p. 365. ♀.
- punctipes** (Dalman). N. Amer.?
Encyrtus punctipes Dalman, 1820. Svenska Vetensk. Akad., Handl. 41: 154.
- rileyi** (Timberlake). Ont. s. N. Y., w. to Mo., Tex. Host: *Lecanium corni* Bouche, *Lecanium sp.* on Japanese persimmon.
Aphycus rileyi Timberlake, 1916. U. S. Natl. Mus., Proc. 50: 589-591, 600-601. ♂, ♀.
- schwarzi** (Timberlake). Ariz.
Aphycus schwarzi Timberlake, 1916. U. S. Natl. Mus., Proc. 50: 589, 599. ♀.
- similis** (Timberlake). Tex. Host: *Lecanium sp.* on Japanese persimmon.
Aphycus similis Timberlake, 1916. U. S. Natl. Mus., Proc. 50: 589, 605-606. ♀.
- Biology: Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 115.
- stanleyi** Compere. Calif. Host: *Coccus hesperidum* L., *C. pseudomagnoliarum* (Kuw.), *Eucalymnatus tessellatus* (Sign.), *Saissetia oleae* (Oliv.).
Metaphycus stanleyi Compere, 1940. Bul. Ent. Res. 31 (1): 10, 11, 20. ♂, ♀.
- Taxonomy: Compere, 1940. Hilgardia 13 (7): 417-419. —Compere and Annecke, 1960. Ent. Soc. So. Afr., Jour. 23 (2): 385. —Annecke and Mynhardt, 1972. Rev. Zool. Bot. Africaines 85 (3-4): 262-265.
- stomachosus** (Girault). Mass. s. to Va., w. to Ill. Host: *Lecanium nigrofasciatum* Perg.
Aphycus stomachosus Girault, 1909. Psyche 16 (4): 77-79. ♂, ♀.
- subfasciatus** (Timberlake). Kans. Host: *Lecanium corni* Bouche.
Aphycus subfasciatus Timberlake, 1916. U. S. Natl. Mus., Proc. 50: 589, 591, 601-602. ♂, ♀.

Genus PSEUDAPHYCUS Clausen

- Pseudaphycus* Clausen, 1915. Calif. Agr. Exp. Sta., Bul. 258: 41.
Type-species: *Pseudaphycus angelicus* Howard. Monotypic.
- Psilomirinus* Brethes, 1916. Buenos Aires Mus. Nac. de Hist. Nat., An. 27: 424.
Type-species: *Psilomirinus flavidulus* Brethes. Orig. desig.
- Representatives of the genus *Pseudaphycus* are internal parasites of pseudococcids. Some species, (*P. utilis*, *P. malinus*), have been useful in biological control programs.
- Taxonomy: Timberlake, 1916. U. S. Natl. Mus., Proc. 50: 569-574. —Mercet, 1925. Eos 1 (1): 10-14. —Ferriere, 1937. Bul. Ent. Res. 28 (2): 316-317. —Gahan, 1946. U. S. Natl. Mus., Proc. 96: 311-327. —De Santis, 1947. Soc. Ent. Argentina Rev. 13 (1-5): 281-287. —Hoffer, 1954. Acta. Soc. Ent. Cechosl. 51: 81, 102-103. —Compere and Annecke, 1960. Ent. Soc. So. Afr., Jour. 23 (2): 377, 379. —Hoffer, 1960. Mus. Nat. Pragae, Acta Faun. Ent. 6: 94-97.
- abstrusus** Gahan. Va. Host: *Pseudococcus comstocki* (Kuw.).
Pseudaphycus abstrusus Gahan, 1946. U. S. Natl. Mus., Proc. 96: 313, 316-317. ♂, ♀.
- alveolatifrons** Gahan. N. J. Host: *Pseudococcus comstocki* (Kuw.).
Pseudaphycus alveolatifrons Gahan, 1946. U. S. Natl. Mus., Proc. 96: 314, 326-327. ♂, ♀.
- angelicus** (Howard). Que., Calif. Host: *Dysmicoccus ryani* (Coq.), *Phenacoccus gossypii* Tns. and Ckll., *Pseudococcus calceolariae* (Mask.), *P. longispinus* (Targ.-Tozz.), *P. maritimus* (Ehrh.), *P. sp.* on *Artemisia californica*, *P. sp.* on passion flowers.
Aphycus angelicus Howard, 1898. U. S. Natl. Mus., Proc. 21: 241, 245. ♀.
- Taxonomy: Timberlake, 1916. U. S. Natl. Mus., Proc. 50: 573-574.
- Biology: Flanders, 1940. Jour. Econ. Ent. 33 (5): 756-758. —Haeussler and Clancy, 1944. Jour. Econ. Ent. 37 (4): 504-509. —Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 110-111.

- graminicola** Timberlake. N. Mex., Utah. Host: *Trionymus utahensis* (Ckll.), pseudococcoid on *Elymus condensatus*.
Pseudaphycus graminicola Timberlake, 1916. U. S. Natl. Mus., Proc. 50: 570-571. ♂, ♀.
- limatulus** Gahan. Md. Host: *Phenacoccus* sp. on *Andropogon* sp.
Pseudaphycus limatulus Gahan, 1946. U. S. Natl. Mus., Proc. 96: 313, 324-325. ♂, ♀.
- malinus** Gahan. Ont., Conn. s. to Va., w. to Mo. Host: *Pseudococcus comstocki* (Kuw.).
Pseudaphycus malinus Gahan, 1946. U. S. Natl. Mus., Proc. 96: 313, 317-319. ♂, ♀.
- Taxonomy: Jasnosh, 1957. Ent. Oboz. 36 (3): 720. — Hoffer, 1960. Mus. Nat. Pragae, Acta Faun. Ent. 6: 95, 97. — Sugonyayev, 1962. Akad. Nauk SSSR Izv., ser. Biol., 5: 754-766.
- Biology: Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, p. 125. — Sugonyayev, 1960. Ent. Rev. 39 (2): 235. — DeBach, 1964. Biol. Control Insect Pests and Weeds, p. 681. — DeBach, 1974. Biol. Control. by Nat. Enem., p. 160.
- meracus** Gahan. Va. Host: *Ferrisia virgata* (Ckll.).
Pseudaphycus meracus Gahan, 1946. U. S. Natl. Mus., Proc. 96: 314, 325-326. ♂, ♀.
- meritorius** Gahan. Va. Host: *Ferrisia virgata* (Ckll.).
Pseudaphycus meritorius Gahan, 1946. U. S. Natl. Mus., Proc. 96: 312, 314-315. ♂, ♀.
- mundus** Gahan. Va. s. to Fla., w. to La. Host: *Dysmicoccus boninsis* (Kuw.), *Phenacoccus gossypii* Tns. and Ckll., *Pseudococcus comstocki* (Kuw.), *P. longispinus* (Targ.-Tozz.).
Pseudaphycus mundus Gahan, 1946. U. S. Natl. Mus., Proc. 96: 313, 321-324. ♂, ♀.
- Biology: Bynum, 1938. La. Agr. Expt. Sta., Bul. 298: 27-29. — Clancy and Pollard, 1947. Jour. Econ. Ent. 40 (4): 579.
- perdigius** Compere and Zinna. Calif., released, possibly established.
Pseudaphycus perdigius Compere and Zinna, 1955. Portici Lab. Ent. Agr., Bol. 14: 94, 105-108. ♂, ♀.
- prospidius** Timberlake. N. Mex. Host: *Spilococcus prospidius* (Ckll.).
Pseudaphycus prospidius Timberlake, 1916. U. S. Natl. Mus., Proc. 50: 570, 571-572. ♀.
- websteri** Timberlake. Ind., Ill. Host: *Pseudococcus maritimus* (Ehrh.), mealybug on stem of *Elymus virginicus*.
Pseudaphycus websteri Timberlake, 1916. U. S. Natl. Mus., Proc. 50: 570, 572. ♀.

Genus STEMMATOSTERES Timberlake

Stemmatosteres Timberlake, 1918. Calif. Univ., Pubs. Ent. 1 (8): 352-354.

Type-species: *Stemmatosteres apterus* Timberlake. Orig. desig.

This morphologically aberrant genus consists of only a few species which seem restricted to the Holarctic Region. A North American species is parasitic on pseudococcids.

Taxonomy: Hoffer, 1955. Acta Soc. Ent. Cechosl. 51: 109-111. — Compere and Annecke, 1960. Ent. Soc. So. Afr., Jour. 23 (2): 381. — Hoffer, 1960. Mus. Nat. Pragae, Acta Faun. Ent. 6: 98.

apterus Timberlake. Calif. Host: *Dysmicoccus timberlakei* (Ckll.).

Stemmatosteres apterus Timberlake, 1918. Calif. Univ., Pubs. Ent. 1 (8): 354-355. ♂, ♀.

Biology: Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 109, 114.

kuchari Yoshimoto. Alta.

Stemmatosteres kuchari Yoshimoto, 1972. Canad. Ent. 104 (11): 1837-1839. ♂, ♀.

Genus TACHARDIOBIUS Timberlake

Tachardiobius Timberlake, 1926. U. S. Natl. Mus., Proc. 69 (3): 19-22.

Type-species: *Tachardiobius nigricans* Timberlake. Orig. desig.

nigricans Timberlake. Ariz., Calif. Host: *Tachardiella larreae* (Comst.).

Tachardiobius nigricans Timberlake, 1926. U. S. Natl. Mus., Proc. 69 (3): 22-23. ♂, ♀.

Genus TIMBERLAKIA Mercet

Timberlakia Mercet, 1925. Eos 1 (1): 9-10.

Type-species: *Accerophagus europaeus* Mercet. Orig. desig.

The only species of this genus was imported from Europe in attempts to control the Rhodes grass scale, *Antonina graminis* (Maskell). Biological control of this pest is achieved by another parasite, *Neodusmetia sangwani* (Subba Rao), but *T. europaea* (Mercet) has become established.

Taxonomy: Compere and Annecke, 1960. Ent. Soc. So. Afr., Jour. 23 (2): 377, 378. — Hoffer, 1960. Mus. Nat. Pragae, Acta Faun. Ent. 6: 98.

Biology: Dean and Schuster, 1958. Jour. Econ. Ent. 51 (3): 365. — Dean, 1960. Jour. Econ. Ent. 53 (4): 694. — Schuster *et al.*, 1971. In: Huffaker, Biol. Control, p. 228.

europaea (Mercet). Fla., Tex. Introduced from Europe. Host: *Antonina graminis* (Mask.).
Acerophagus europaeus Mercet, 1921. Fauna Iberica, Himen., Encirtidos, pp. 191-193. ♂, ♀.

Biology: Huffaker, 1971. Biol. Control, p. 228.

TRIBE ARRHENOPHAGINI

Genus ARRHENOPHAGUS Aurivillius

Arrhenophagus Aurivillius, 1888. Ent. Tidskr. 9: 144-146.

Type-species: *Arrhenophagus chionaspidis* Aurivillius. Monotypic.

Mymarrella Risbec, 1951. Inst. Fr. Afr. Noire, Mem. 13: 402-403.

Type-species: *Mymarrella parlatores* Risbec. Monotypic.

Arrhenophagus consists of fewer than five species, but is widespread in distribution. Its species are parasitic on armored scale insects.

Taxonomy: Girault, 1915. N. Y. Ent. Soc., Jour. 23 (4): 241-242. — Timberlake, 1924. Hawaii. Ent. Soc., Proc. 5 (3): 433. — Agarwal, 1963. Ztschr. f. Parasitenk. 22 (5): 394-397.

chionaspidis Aurivillius. Md. s. to Fla. Host: *Aulacaspis rosae* (Bouche), *Quadraspidiotus perniciosus* (Comst.), *Q. forbesi* (Johns.).

Arrhenophagus chionaspidis Aurivillius, 1888. Ent. Tidskr. 9: 146. ♀.

Coccobius diaspidis Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 408. ♀.

Taxonomy: Girault, 1911. N. Y. Ent. Soc., Jour. 19 (3): 177-179. — Girault, 1915. N. Y. Ent. Soc., Jour. 23 (4): 241-242. — Ferriere, 1953. Rev. Path. Veg. d'Ent. Agr. France 32 (2): 116. — Tachikawa, 1957. Jap. Jour. Appl. Ent. and Zool. 1 (3): 174-179. — Hoffer, 1964. Acta Soc. Ent. Cechosl. 61 (2): 118-122. — Trjapitzin, 1968. Vses. Ent. Obsch., Trudy 52: 47.

Biology: Benassy, 1958. (Paris) Acad. Sci. Compt. Rend. 246 (1): 179-181. — Zak-Ogaza, 1961. Polskie Pismo Ent. 31 (26): 356.

Morphology: Dominichini, 1953. Zool. Agr. Bach Univ. Milano, Bol. 19: 242.

TRIBE BOTHRIOTHORACINI

Genus BOTHRIOTHORAX Ratzeburg

Bothriothorax Ratzeburg, 1844. Ichn. d. Forstins., v. 1, table facing p. 4; pp. 208-209.

Type-species: *Bothriothorax altensteinii* Ratzeburg. Monotypic. The type-species is considered a synonym of *Encyrtus clavicornis* Dalman.

Trimorphocerus Dahlbom, 1857. Ofvers. Svenska Vetensk. Akad. Forh. 14 (8): 293-294 (no species included).

Type-species: *Bothriothorax altensteinii* Ratzeburg. Desig. by Gahan and Fagan, 1923.

This Holarctic genus consists of about 15 species that are parasites of syrphid flies.

Taxonomy: Howard, 1895. U. S. Natl. Mus., Proc. 17: 607-611. — Graham, 1958. Ent. Tidskr. 79 (3-4): 161-165. — Kerrich, 1963. Beitr. zur Ent. 13 (3-4): 364. — Trjapitzin, 1967. Akad. Nauk SSSR, Zool. Inst., Trudy 41: 209-212.

Biology: Heiss, 1938. Ill. Biol. Monog. 16 (4): 19, 99, 100. — Graves, 1960. Ent. Soc. Amer., Ann. 53 (1): 74.

- californicus** Howard. Calif. Host: *Scaeva pyrastris* (L.), *Syrphus nitens* Zett., *S. opinator* O. S.
Bothriothorax californicus Howard, 1895. U. S. Natl. Mus., Proc. 17: 607, 609-610. ♀.
- Biology: Kamal, 1926. Jour. Econ. Ent. 19 (5): 726-728.
- faridi** Kamal. Calif. Host: *Syrphus opinator* O. S.
Bothriothorax faridi Kamal, 1926. Canad. Ent. 58 (11): 283-284. ♂, ♀.
- Biology: Kamal, 1939. Egypt Min. Agr. Tech. and Sci. Serv. Ent. Sect., Bul. 207: 33, 46, 48.
- macrogenes** Ashmead. Kans.
Bothriothorax macrogenes Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: app. p. V. ♀.
- nigripes** Howard. N. Mex., Calif. Host: *Eupeodes volucris* O. S.
Bothriothorax nigripes Howard, 1895. U. S. Natl. Mus., Proc. 17: 607, 610. ♀.
- Biology: Kamal, 1939. Egypt Min. Agr. Tech. and Sci. Serv. Ent. Sect., Bul. 207: 33, 46, 48.
 —Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 70-71.
- noveboracensis** Howard. N. H. s. to N. J.
Bothriothorax noveboracensis Howard, 1895. U. S. Natl. Mus., Proc. 17: 607, 609. ♀.
- peculiaris** Howard. N. H. s. to Va., w. to Wis. Host: *Metasyrphus americanus* (Johns.),
Syrphus rectus O. S., *S. ribesii* (L.).
Bothriothorax peculiaris Howard, 1885. U. S. Dept. Agr., Bur. Ent., Bul. 5: 20-21, 43. ♂, ♀.
- rotundiformis** Howard. Calif., Colo., Wash.
Bothriothorax rotundiformis Howard, 1895. U. S. Natl. Mus., Proc. 17: 607, 610-611. ♀.
- virginiensis** Howard. Va.
Bothriothorax virginiensis Howard, 1885. U. S. Dept. Agr., Bur. Ent., Bul. 5: 20, 43. ♀.

Genus TRJAPITZINELLUS Viggiani

Trjapitzinellus Viggiani, 1967. Portici Lab. Ent. Agr., Bol. 25: 166-167.

Type-species: *Trjapitzinellus semidaliphagus* Viggiani. Orig. desig.

This genus consists of two species, one from Italy and one from California. Both are larval-pupal parasites of Coniopterygidae.

microrphanos Gordh. Calif. Host: *Conwentzia* sp., *Parasemidalis* sp.

Trjapitzinellus microrphanos Gordh, 1973. Pan-Pacific Ent. 49 (1): 51-55.

Genus ZETETICONTUS Silvestri

Aratus Howard, 1897. Linn. Soc. London, Jour., Zool. 26: 155-156. Preocc. by *Aratus* Milne-Edwards, 1853.

Zeteticontus Silvestri, 1915. Portici Lab. Zool., Bol. 9: 343-344.

Type-species: *Zeteticontus abilis* Silvestri. Orig. desig.

Mirrencyrtus Girault, 1915. Queensland Mus., Mem. 4: 115.

Type-species: *Mirrencyrtus glabriscutellum* Girault. Orig. desig.

Aratiscus Ghesquiere, 1946. Rev. Zool. Bot. Africaines 39 (4): 368. N. name for *Aratus* Howard.

Prolitomastix Hoffer, 1954. Ochr. Prirody 9 (6): 172.

Type-species: *Prolitomastix vestonicensis* Hoffer. Orig. desig.

Zeteticontus is cosmopolitan and contains about ten species. Members of the genus are nitidulid beetle parasites.

insularis (Howard). Fla. Host: *Anastrepha ludens* (Loew). Kerrich examined the holotype of *H. insularis* and considered it to be an *Aratus* (= *Zeteticontus*). This is interesting because *insularis* is a fly parasite whereas all other species of *Zeteticontus* parasitize nitidulids.

Bothriothorax insularis Howard, 1896. Linn. Soc. London, Jour., Zool. 26: 147. ♂, ♀.

Taxonomy: Kerrich, 1963. Beitr. zur Ent. 13 (3-4): 367-368.

TRIBE CERAPTEROCERINI

Genus AMMONOENCYRTUS De Santis

Ammonocencyrtus De Santis, 1964. Com. Inv. Cient. Prov. Buenos Aires, An. 4: 376-378.

Type-species: *Cerapterocerus bonariensis* Brethes. Orig. desig.

This New World genus contains two hyperparasitic species that attack parasites of soft-scale insects.

Taxonomy: Annecke, 1967. Roy. Ent. Soc. London, Trans. 119 (4): 101, 159-160.

californicus (Compere). Calif. Host: Primary parasite of *Coccus hesperidum* L., *Saissetia oleae* (Oliv.), *Ceroplastes cirripediformis* Comst., *Metaphycus lounsburyi* (Howard).
Eusemion californicum Compere, 1925. Calif. Univ., Pubs. Ent. 3 (3): 296, 304-306. ♂, ♀.

Biology: Compere, 1925. Calif. Univ., Pubs. Ent. 3 (3): 306-308. —Smith, 1933. Ent. Soc.

Amer., Ann. 26 (3): 525-528. —Flanders, 1940. Ent. Soc. Amer., Ann. 33 (2): 252.

—Flanders, 1943. Jour. Econ. Ent. 36 (6): 923-924. —Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 89-90.

Genus ANICETUS Howard

Anicetus Howard, 1896. U. S. Natl. Mus., Proc. 18: 639.

Type-species: *Anicetus ceylonensis* Howard. Monotypic.

Asteropacus Howard, 1898. U. S. Natl. Mus., Proc. 21: 231.

Type-species: *Asteropacus primus* Howard. Monotypic.

Habrolepopterygis Girault, 1915. Queensland Mus., Mem. 4: 86.

Type-species: *Habrolepopterygis felix* Girault. Monotypic.

Krishniieriella Mani, 1935. Rec. Indian Mus. 37 (4): 421-422.

Type-species: *Krishniieriella ceroplastodis* Mani. Orig. desig.

Anicetus contains about 20 species which are parasitic on soft scales, especially *Ceroplastes*. The genus is predominantly Ethiopian and Oriental in distribution.

Taxonomy: Girault, 1916. Ent. Soc. Amer., Ann. 9 (3): 302. —Mercet, 1925. Soc. Roy. Ent.

Egypt, Bul. for 1925, p. 50. —Subba Rao, 1965. Roy. Ent. Soc. London, Proc. (B) 34 (5-6):

71. —Trjapitzin, 1965. Ent. Rev. 44 (4): 524-525. —Annecke, 1967. Roy. Ent. Soc. London,

Trans. 119 (4): 99-169. —Hayat, 1976. Ent. Monthly Mag. 111 (1328-1330): 49-50.

annulatus Timberlake. Tex., Calif. Host: *Coccus hesperidum* L.

Anicetus annulatus Timberlake, 1919. Hawaii. Ent. Soc., Proc. 4 (1): 227-231. ♂, ♀.

Biology: Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 60.

toumeyellae Milliron. Del. s. to Va. Host: *Toumeyella liriodendri* (Gmel.), *Ceroplastes* sp. on lilly.

Anicetus toumeyellae Milliron, 1959. Ent. Soc. Amer., Ann. 62 (1): 28, 29-30. ♂, ♀.

Genus CERAPTEROCERUS Westwood

Cerapterocerus Westwood, 1833. Mag. Nat. Hist. 6: 495.

Type-species: *Cerapterocerus mirabilis* Westwood. Monotypic.

Telegraphus Ratzeburg, 1848. Ichn. d. Forstins., v. 2, pp. 152-153.

Type-species: *Telegraphus maculipennis* Ratzeburg. Monotypic. The type-species is considered a synonym of *Cerapterocerus mirabilis* Westwood.

This small genus consists of only a few species which are parasitic on mealybugs.

Taxonomy: Timberlake, 1924. Hawaii. Ent. Soc., Proc. 5 (3): 432. —Agarwal, 1963. Ztschr. f.

Parasitenk. 22 (5): 398-400. —Doblado, 1966. Graellsia 22: 54.

floridanus Ashmead. Fla.

Cerapterocerus floridanus Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 190. ♂.

Genus EUSEMION Dahlbom

Eusemion Dahlbom, 1857. Ofvers. Svenska Vetenska. Akad., Forh. 14 (8): 293. No species included.

Type-species: *Encyrtus corniger* Haliday. Subsequent monotypy (Thomson, 1876 (1875)).

Eusemion is a small genus consisting of less than five species as the genus is understood by Annecke (1967). These insects are hyperparasitic on primary parasites of soft scales.

Taxonomy: Compere, 1925. Calif. Univ., Pubs. Ent. 3 (3): 303-308. —Compere, 1938. Bul. Ent. Res. 29 (3): 319-320. —Ferriere, 1949. Schweiz. Ent. Gesell., Mitt. 22 (4): 383. —Annecke, 1967. Roy. Ent. Soc. London, Trans. 119 (4): 100, 103-104.

longipennis (Ashmead). Fla., Calif. Host: *Metaphycus flavus* (Howard), *Microterys flavus* (Howard) on *Lecanium* sp.

Mira longipennis Ashmead, 1888. Ent. Amer. 4 (1): 17. ♀.

Biology: Timberlake, 1913. Jour. Econ. Ent. 6 (3): 301-302.

TRIBE CHALCERINYINI

Genus ECHTHROGONATOPUS Perkins

Echthrogonatopus Perkins, 1906. Hawaii. Sugar Planters' Assoc. Expt. Sta., Div. Ent., Bul. 1 (8): 256.

Type-species: *Echthrogonatopus exitiosus* Perkins. Desig. by Girault, 1915.

This is a small genus, consisting of fewer than five species. They are parasites of dryinids, but the North American species was reported to have been recovered from a mealybug. An undetermined species occurs in Florida on *Dysmicoccus patulae* (Rao).

Taxonomy: Girault, 1915. Queensland Mus., Mem. 4: 76.

pachycephalus Perkins. Ohio. Host: Dryinid.

Echthrogonatopus pachycephalus Perkins, 1906. Hawaii. Sugar Planters' Assoc. Expt. Sta. Div. Ent. Bul. 1 (8): 257. ♀.

Taxonomy: Girault, 1922. Insector Inscitiae Menstruus 10 (7-9): 150. —Girault, 1934. New Capsidae and Hymen. (Priv. pub., no page number.)

Genus HELEGONATOPUS Perkins

Helegonatopus Perkins, 1906. Hawaii. Sugar Planters' Assoc. Expt. Sta., Div. Ent., Bul. 1 (8): 257.

Type-species: *Helegonatopus pseudophanes* Perkins. Monotypic.

Taxonomy: Timberlake, 1918. Hawaii. Ent. Soc., Proc. 4 (1): 185. —Timberlake, 1924. Hawaii. Ent. Soc., Proc. 5 (3): 432. —Williams, 1931. Handb. Ins. and Other Invert. of Hawaii. Sugar Cane Flds., p. 255.

pseudophanes Perkins. Fla., Ohio, Ky. Host: *Gonatopus* sp., ex. dryinid on *Amblysellus curtisi*.

Helegonatopus pseudophanes Perkins, 1906. Hawaii. Sugar Planters' Assoc. Expt. Sta., Div. Ent., Bul. 1 (8): 258. ♀.

TRIBE CHEILONEURINI

Genus APTERENCYRTUS Ashmead

Apterencyrtus Ashmead, 1905. Canad. Ent. 37 (1): 5.

Type-species: *Apterencyrtus pulchricornis* Ashmead. Monotypic. The type-species is considered a synonym of *Chiloneurus microphagus* Mayr.

Chiloneurinus Mercet, 1921. Fauna Iberica, Himen., Encirtidos, p. 646.

Type-species: *Chiloneurus microphagus* Mayr. Orig. desig.

This cosmopolitan genus of scale parasites consists of fewer than 10 species.

Taxonomy: Gahan, 1951. *Canad. Ent.* 83 (7): 171. — Ferriere, 1955. *Schweiz. Ent. Gesell., Mitt.* 28 (1): 117-118. — Hoffer, 1957. *Acta. Soc. Ent. Cechosl.* 54 (4): 349-352. — Alam, 1957. *Roy. Ent. Soc. London, Trans.* 109 (15): 423, 438-441. — Trjapitzin, 1967. *Akad. Nauk SSSR Zool. Inst., Trudy* 41: 213-214. — Graham, 1969. *Polskie Pismo Ent.* 39 (2): 270-271.

microphagus (Mayr). Conn. s. to Fla., Calif. Host: *Lecanium nigrofasciatum* Perg., *Lepidosaphes ulmi* (L.), *Quadraspidiotus juglansregiae* (Comst.), *Q. perniciosus* (Comst.).

Encyrtus Lambinus Walker, 1838. *Ent. Mag.* 5: 422. ♀.

Encyrtus Eurgelea Walker, 1844. *Ann. and Mag. Nat. Hist.* 14: 184. ♀.

Chiloneurus microphagus Mayr, 1876 (1875). *Zool.-Bot. Gesell. Wien, Verhandl.* 25: 745, 746. ♀.

Chiloneurus diaspidinarum Howard, 1894. *U. S. Dept. Agr., Insect Life* 7 (3): 256. ♀.

Apterencyrtus pulchricornis Ashmead, 1905. *Canad. Ent.* 37 (1): 5. ♀.

Aphidencyrtus aspidioti Girault, 1915. *Ent. Soc. Amer., Ann.* 8 (3): 283, 284. ♀.

Habrolepis mayri Ruschka, 1915. *Ztschr. Angew. Ent.* 2: 403-404. ♀.

Apterencyrtus zonatus Alam, 1957. *Roy. Ent. Soc. London, Trans.* 109 (15): 439, 441. ♀.

Although *Encyrtus lambinus* Walker has priority over *Cheiloneurus microphagus* Mayr, the latter name is well known and has been frequently published. Therefore *microphagus* is retained here as the accepted name in the interest of stability.

Taxonomy: Gahan, 1924. *U. S. Natl. Mus., Proc.* 65 (4): 1-2.

Biology: Griswold, 1925. *N. Y. (Cornell) Agr. Expt. Sta., Mem.* 93: 44-47.

Genus BOUCEKIELLA Hoffer

Boucekiella Hoffer, 1954. *Ochr. Prirody* 9 (6): 172, 173.

Type-species: *Boucekiella depressa* Hoffer. Orig. desig.

Urotyndarichus Ferriere, 1955. *Soc. Ent. de France, Bul.* 60 (1-2): 9-10.

Type-species: *Urotyndarichus antoninae* Ferriere. Orig. desig.

depressa Hoffer. Tex. Introduced for biological control of the Rhodes grass scale, *Antonina graminis* (Mask). Host: *Chaetococcus phragmitis* (Marchal).

Boucekiella depressa Hoffer, 1954. *Ochr. Prirody* 9 (6): 172-173. ♀.

Urotyndarichus antoninae Ferriere, 1955. *Soc. Ent. de France, Bul.* 60 (1-2): 10. ♀.

Taxonomy: Hoffer, 1957. *Mus. Nat. Pragae, Acta Ent.* 31 (486): 220.

Biology: Huffaker, 1971. *Biol. Control*, pp. 228.

Genus CHEILONEURUS Westwood

Cheiloneurus Westwood, 1833. *London, Edinb. and Dublin Phil. Mag. and Jour. Sci.* 3 (3): 343.

Type-species: *Encyrtus elegans* Dalman. Monotypic.

Chiloneurus Foerster, 1856. *Hym. Stud.* v. 2, pp. 32, 34, 50. Unjustified emend.

Cristatithorax Girault, 1911. *Canad. Ent.* 43 (5): 169.

Type-species: *Cristatithorax pulcher* Girault. Monotypic.

Metacheiloneurus Hoffer, 1957. *Acta Soc. Ent. Cechosl.* 54 (4): 336-337.

Type-species: *Metacheiloneurus moestus* Hoffer. Orig. desig.

Taxonomy: Gahan, 1914. *Ent. Soc. Amer., Ann.* 7 (3): 247-248. — Ruschka, 1923. *Zool.-Bot.*

Gesell. Wien, Verhandl. 72 (1): 6-10. — Compere, 1931. *Calif. Univ., Pubs. Ent.* 5 (11): 233.

— Compere, 1938. *Bul. Ent. Res.* 29 (3): 327-328. — Geyer, 1947. *Ent. Soc. So. Afr., Jour.* 10

(1): 98. — Alam, 1957. *Roy. Ent. Soc. London, Trans.* 109 (15): 423, 441-444. — Hoffer, 1957.

Acta Soc. Ent. Cechosl. 54 (4): 339-348. — Claridge, 1958. *Ent. Monthly Mag. (4th. Ser.)* 94

(1130): 156-161. — Trjapitzin, 1964. *Zool. Zhur.* 43 (10): 1463-1465. — Graham, 1969. *Polskie*

Pismo Ent. 39 (2): 273-275.

albicornis Howard. Ont. s. to S. C., w. to La., n. to Wis., Colo. Host: *Kermes* sp. on oak, *Lecanium caryae* Fitch, *L. corni* Bouche, *L. fletcheri* Kll., *L. nigrofasciatum* Perg.,

- Physokermes piceae* (Schr.), *Pulvinaria acericola* (W. and R.), *P. vitis* (L.), *P. sp.* on poison ivy.
Chiloneurus albicornis Howard, 1881. U. S. Dept. Agr., Ann. Rept. for 1880, pp. 363-364. ♀.
- Taxonomy: Girault, 1916. Ent. Soc. Amer., Ann. 9 (3): 300-301 (male, female).
- cupreicollis** Ashmead. Fla. Host: *Lecanium* sp. on oak.
Chiloneurus cupreicollis Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 131. ♀.
- cushmani** Crawford. Va. Host: *Kermes* sp.
Chiloneurus cushmani Crawford, 1911. Ent. Soc. Wash., Proc. 13 (2): 126. ♂, ♀.
- dubius** Howard. Mass. w. to Wis., Mo. Host: *Kermes* sp., *Lecanium* sp. from dwarf mountain pine, *L. sp.* from Scotch pine.
Chiloneurus dubius Howard, 1885. U. S. Dept. Agr., Bur. Ent., Bul. 5: 17, 42. ♂.
- elegans** (Dalman). N. Y. s. to Pa., Va. Host: *Mayetiola destructor* (Say), *Platygaster zosine* Walk.
Encyrtus elegans Dalman, 1820. Svenska Vetensk. Akad., Handl. 41: 151. ♀.
- Taxonomy: Claridge, 1958. Ent. Monthly Mag. 94 (1130): 157-158.
- Biology: Gahan, 1934 (1933). U. S. Dept. Agr. Misc. Pub. 174: 60-64. — Hill *et al.*, 1939. U. S. Dept. Agr., Tech. Bul. 689: 5, 12. — Ferriere, 1952. Ninth Internat. Cong. Ent. Amsterdam, Trans. v. 1, p. 594.
- Taxonomy: Ferriere, 1956. Lab. Zool. Gen. e. Agr. Portici, Bol. 33: 354.
- Biology: Sugonyayev, 1958. Ent. Rev. 37 (2): 260.
- Morphology: Hill and Pinckney, 1940. U. S. Dept. Agr., Tech. Bul. 715: 5-6, 11-13.
- inimicus** Compere. Fla. w. to Calif. Host: *Metaphycus lounsburyi* (How.), *M. physokermis* (Timb.).
Chiloneurus inimicus Compere, 1925. Calif. Univ., Pubs. Ent. 3 (3): 296, 197-302. ♂, ♀.
- Taxonomy: Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 71.
- Biology: McCoy and Selheim, 1970. Ent. Soc. Amer., Ann. 63 (2): 618. — Compere, 1925. Calif. Univ., Pubs. Ent. 3 (3): 301-302.
- lineascapus** Gahan. Md., La., Calif. Host: *Kermes* sp. on lilac, *K. sp.* on oak, *Saissetia oleae* (Oliv.), *Metaphycus lounsburyi* (How.).
Chiloneurus lineascapus Gahan, 1910. Canad. Ent. 42 (6): 207-208. ♀.
- Taxonomy: Compere, 1925. Calif. Univ., Pubs. Ent. 3 (3): 296.
- Biology: Smith, 1933. Ent. Soc. Amer., Ann. 26 (3): 525.
- Morphology: Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 115.
- noxius** Compere. Calif. Host: *Saissetia oleae* (Oliv.), *Metaphycus lounsburyi* How.
Chiloneurus noxius Compere, 1925. Calif. Univ., Pubs. Ent. 3 (3): 296, 302-303. ♀.
- Taxonomy: Smith and Compere, 1928. Calif. Univ., Pubs. Ent. 4 (9): 242, 272-274.
- Biology: Flanders, 1940. Ent. Soc. Amer., Ann. 33 (2): 252. — Lepelly, 1937. Bul. Ent. Res. 28 (2): 181-183. — Weseloh, 1969. Ent. Soc. Amer., Ann. 62 (2): 299-305. — Weseloh, 1971. Ent. Soc. Amer., Ann. 64 (3): 580-586. — Weseloh, 1971. Ent. Soc. Amer., Ann. 64 (6): 1188-1190. — Weseloh, 1972. Ent. Soc. Amer., Ann. 65 (1): 41-46. — Weseloh and Bartlett, 1971. Ent. Soc. Amer., Ann. 64 (6): 1259-1264.
- Morphology: Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 71.
- pulcher** (Girault). Ill. Host: *Kermes pubescens* Bogue.
Cristatithorax pulcher Girault, 1911. Canad. Ent. 43 (5): 170. ♀.
- pulvinariae** Dozier. D. C. s. to Fla. Host: *Metaphycus flavus* (How.) parasitic on *Pulvinaria* sp.
Chiloneurus pulvinariae Dozier, 1927 (1925). Puerto Rico Dept. Agr., Jour. 9 (4): 363-365. ♂, ♀.

swezeyi Ashmead. Conn., Ohio. Host: *Ormenis septentrionalis* (Spin.), *Psilodryinus typhlocybae* (Ashm.).

Cheiloneurus swezeyi Ashmead, 1903. Ent. News 14 (6): 193. ♂, ♀.

Biology: Swezey, 1903. Ohio Nat. 3: 446-447.

Genus CHRYSOPHAGUS Ashmead

Chrysopophagus Ashmead, 1894. U. S. Dept. Agr., Insect Life 7 (3): 245-246.

Type-species: *Chrysopophagus compressicornis* Ashmead. Monotypic.

Saronotum Perkins, 1906. Hawaii. Sugar Planters' Assoc. Expt. Sta., Div. Ent., Bul. 1 (8): 259-260.

Type-species: *Saronotum australiae* Perkins. Desig. by Gahan and Fagan, 1923.

Chrysopophagus consists of less than ten species.

Taxonomy: Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 331, 350-351. —Girault, 1924. Homo Perniciosus and New Hymen. not paged. (priv. pub.). —Subba Rao, 1957. Indian Acad. Sci., Proc. (B) 46 (6): 382-383.

amplicornis (Gahan). Tex. w. to Calif. Host: *Eriococcus* sp. on *Bouteloua*.

Cheiloneurus amplicornis Gahan, 1914. Ent. Soc. Amer., Ann. 7 (3): 247. ♀.

Biology: Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 115.

banksi Howard. Tex., N. Mex.

Chrysopophagus banksi Howard, 1898. U. S. Natl. Mus., Proc. 21: 247-248. ♀.

compressicornis Ashmead. N. C., S. C. w. to Iowa, Mo., Calif. Host: *Chrysopa californica* Coq., *C. majuscula* Banks, *C. plorabunda* Fitch, *C. ruflabris* Burm.

Chrysopophagus compressicornis Ashmead, 1894. U. S. Dept. Agr., Insect Life 7 (3): 246. ♂, ♀.

Biology: Clancy, 1946. Calif. Univ., Pubs. Ent. 7 (13): 432-440. —Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 72. —Muma, 1959. Fla. Ent. 42 (4): 150-152.

flaccus (Walker). N. C. s. to Fla., Ohio, Calif. Host: Dryinid.

Encyrtus (Cerchysius) Flaccus Walker, 1847. Ann. and Mag. Nat. Hist. 20 (130): 21. ♀.

Saronotum americanum Perkins, 1906. Hawaii. Sugar Planters' Assoc. Expt. Sta., Div. Ent., Bul. 1 (8): 260.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 147-148.

kansensis Girault. Kans.

Chrysopophagus kansensis Girault, 1917. U. S. Natl. Mus., Proc. 53: 447. ♀.

Genus DIVERSINERVUS Silvestri

Diversinervus Silvestri, 1915. Lab. Zool. Gen. e Agr. Portici, Bol. 9: 301-304.

Type-species: *Diversinervus elegans* Silvestri. Orig. desig.

Cheiloneuroides Girault, 1915. Queensland Mus., Mem. 4: 96, 122.

Type-species: *Cheiloneuroides bicristatus* Girault. Orig. desig. The type-species is considered a synonym of *Diversinervus elegans* Silvestri.

Diversinervus is predominantly an African genus consisting of fewer than ten species which parasitize lecaniine scale insects.

Taxonomy: Girault, 1917. Insecutor Inscitiae Menstruus 5: 37. —Compere, 1931. Calif. Univ., Pubs. Ent. 5 (11): 233-235. —Compere, 1940. Hilgardia 13 (7): 407. —Trjapitzin, 1961. Ent. Rev. 40 (3): 369.

elegans Silvestri. Calif. Host: *Saissetia oleae* (Oliv.).

Diversinervus elegans Silvestri, 1915. Lab. Zool. Gen. e Agr. Portici, Bol. Gen. e Agr., Bol. 9: 304-305. ♂, ♀.

Cheiloneuroides bicristatus Girault, 1915. Queensland Mus., Mem. 4: 96-97.

Diversinervus meridionalis Compere, 1931. Calif. Univ., Pubs. Ent. 5 (11): 237-239. ♂, ♀.

Biology: Compere, 1931. Calif. Univ., Pubs. Ent. 5 (11): 241-245, 249.

Genus PARASYRPOPHAGUS Girault

Parasyrpophagus Girault, 1915. Queensland Mus., Mem. 4: 105.

Type-species: *Parasyrpophagus funeralis* Girault. Orig. desig.

This genus has been recovered in India, Australia and the Holarctic Region. It contains four or five species. In North America it is represented by material from California under a manuscript name of Girault.

Taxonomy: Mercet, 1921. Fauna Iberica Himen., Encirtidos, pp. 58, 73, 82, 270. — Hoffer, 1957. Acta. Soc. Ent. Cechosl. 54 (4): 329-330.

Genus PROCHILONEURUS Silvestri

Prochiloneurus Silvestri, 1915. Lab. Zool. Gen. e Agr. Portici, Bol. 9: 350-351.

Type-species: *Prochiloneurus pulchellus* Silvestri. Orig. desig.

Achrysopophagus Girault, 1915. Queensland Mus., Mem. 4: 89.

Type-species: *Achrysopophagus oriductus* Girault. Orig. desig.

Approximately thirty species have been assigned to *Achrysopophagus* and *Prochiloneurus*. All of the species originally assigned to *Achrysopophagus* are hyperparasitic on mealybugs and perhaps soft scale insects. The genus is cosmopolitan.

Taxonomy: Mercet, 1919. Soc. Espan. de Hist. Nat., Bol. 19 (9-10): 473-474. — Mercet, 1929.

Eos 5 (4): 359. — Compere, 1938. Bul. Ent. Res. 29 (3): 325-327. — Domenichini, 1952. Zool.

Agr. Bach. Univ. Milano, Bol. 17 (3): 175-179. — Hoffer, 1957. Acta Soc. Ent. Cechosl. 54

(4): 329, 348-349. — Trjapitzin, 1968. Vses. Ent. Obsheh., Trudy 52: 116-122.

americanus (Girault). D. C.

Achrysopophagus americanus Girault, 1917. Descr. Stellarum Nov., p. 16. ♀.

dactylopii (Howard). D. C., N. Mex., Minn. Host: *Phenacoccus solenopsis* Tinsley, *Planococcus citri* (Risso).

Chiloneurus dactylopii Howard, 1885. U. S. Dept. Agr., Bur. Ent., Bul. 5: 17, 42. ♂, ♀.

Taxonomy: Kerrich, 1953. Bul. Ent. Res. 44 (4): 798-799.

Biology: Kirkpatrick, 1952. Rept. Cacao Res. 1952, p. 65.

modestus (Timberlake). Calif. Host: *Pseudococcus maritimus* (Ehrh.), *Agropyrum yuccae* (Coq.), *Zarhopalus corvinus* (Gir.).

Achrysopophagus modestus Timberlake, 1924. Calif. Univ., Pubs. Ent. 3 (2): 240-243. ♀.

Biology: Clausen, 1924. Calif. Univ., Pubs. Ent. 3 (2): 257-266, 284-286. — Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 55.

Genus TINEOPHOCTONUS Ashmead

Tineophoctonus Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 328, 351.

Type-species: *Phaenodiscus armatus* Ashmead. Orig. desig.

This is a Holarctic genus consisting of only a few species. The host associations of *Tineophoctonus* are not clear. *Armatus* has been reported as an anobiid parasite in Europe (its host still unknown in North America) whereas *tineaevorus* attacks tineid larvae.

Taxonomy: Viggiani, 1966. Doriana 4 (168): 1-5. — Mercet, 1932. Eos 8 (3): 311-316.

armatus (Ashmead). Fla. Host: *Anobium punctatum* (DeG.).

Phaenodiscus armatus Ashmead, 1888. Ent. Amer. 4 (1): 17. ♀.

Taxonomy: Mercet, 1932. Eos 8 (3): 312-316.

tineaevorus (Ashmead). Fla. Host: Tineid larva in gall of *Andricus pattoni* (Bass.).

Leptomastix tineaevorus Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 191. ♀.

Taxonomy: Ashmead, 1888. Ent. Amer. 4 (1): 16.

Genus TYNDARICHUS Howard

Tyndarichus Howard, 1910. U. S. Dept. Agr. Tech. Ser. Bur. Ent., Bul. 19: 5-6.

Type-species: *Tyndarichus navae* Howard. Orig. desig.

Tyndarichus has less than 10 described species some of which are apparently hyperparasitic on other chalcidoids that attack Lepidoptera eggs. An undetermined species is found from Wis. w. to Mont., s. to Nebr., Fla., Calif.

Taxonomy: Mercet, 1918. Rev. Mont. Madrid 42: 775-781. —Mercet, 1919. Rev. Appl. Ent. (A) 7: 229-230. —Nowicki, 1928. Ztschr. f. Wiss. Insektenbiol. 4 (1): 17, 24-25. —Eady, 1960. Bul. Ent. Res. 50 (4): 669-670. —Paine, 1964. So. Pacific Comm. Tech. Paper 145: 40.

TRIBE COMPERIINI

Genus COMPERIA Gomes

Comperia Gomes, 1942 (1941). Esc. Nac. Agron. Rio de Janeiro, Bol. 2 (1): 41-42.

Type-species: *Dicarnosis merceti* Compere. Orig. desig.

This genus consists of fewer than five described species and presumably has its origin in Africa. One species parasitizes cockroach oothecae.

Taxonomy: Annecke, 1969. Ent. Soc. So. Afr., Jour. 32 (2): 447.

merceti (Compere). Cosmopolitan. Host: *Supella longipalpa* (Serville).

Dicarnosis merceti Compere, 1938. Bul. Ent. Res. 29 (3): 317-319. ♀.

Comperia merceti var. *falsicornis* Gomes, 1942 (1941). Esc. Nac. Agron. Rio de Janeiro, Bol. 2 (1): 43-44. ♂, ♀.

Biology: Lawson, 1954. Kans. Ent. Soc., Jour. 27 (4): 128-142. —Gordh, 1973. Jour. Ent. (A) 47 (2): 115-123.

TRIBE COPIDOSOMATINI

Genus AGENIASPIS Dahlbom

Ageniaspis Dahlbom, 1857. Ofvers. Svenska Vetensk. Akad., Forh. 14 (8): 293. No species included.

Type-species: *Encyrtus fuscicollis* Dalman. Desig. by Ashmaed, 1904.

Holcothorax Mayr, 1876 (1875). Zool.-Bct. Gesell. Wien, Verhandl. 25: 691.

Type-species: (*Encyrtus*) *Holcothorax testaceipes* (Ratzeburg). Desig. by Gahan and Fagan, 1923.

Ageniaspis contains fewer than 10 species, most of which are parasites of Lepidoptera. One species, *fuscicollis* (Dalman), is polyembryonic. The genus appears to be cosmopolitan.

Taxonomy: Narayanan, 1960. Natl. Inst. Sci. India, Proc. (B) 26: 23. —Trjapitzin, 1967. Akad. Nauk SSSR Zool. Inst., Trudy 41: 180. —Trjapitzin, 1968. Vses. Ent. Obshch., Trudy 52: 100-101. —Graham, 1969. Polskie Pismo Ent. 39 (2): 292-293.

bucculatricis (Howard). Ont. s. to D. C., w. to Mo. Host: *Bucculatrix pomifoliella* Clem., galls of *Rhabdophaga cornuta* Walsh and *R. siliqua* Walsh.

Encyrtus bucculatrix Howard, 1883 (1882). In Lintner, Injurious Insects N. Y., Ann. Rept. 1: 160-161. ♀.

Genus COELOPENCYRTUS Timberlake

Coelopencyrtus Timberlake, 1919. Hawaii. Ent. Soc., Proc. 4 (1): 218-221.

Type-species: *Coelopencyrtus odyneri* Timberlake. Orig. desig.

Nesencyrtus Timberlake, 1919. Hawaii. Ent. Soc., Proc. 4 (1): 223-224.

Type-species: *Adelencyrtus kaalae* Ashmead. Orig. desig.

Batrachencyrtus Jansson, 1957. Ent. Tidskr. 78 (1): 71-74.

Type-species: *Batrachencyrtus callidii* Jansson. Orig. desig.

Coelopencyrtus contains about ten species, all of which are parasites of aculeate Hymenoptera. The genus appears throughout the world, with the possible exception of South America. With more thorough investigations of aculeate biology *Coelopencyrtus* may become a larger genus.

- Taxonomy: Timberlake, 1922. Hawaii. Ent. Soc., Proc. 5 (1): 135-139. — Burks, 1958. Wash. Acad. Sci., Jour. 48 (1): 22-26. — Trjapitzin, 1960. Ent. Rev. 39 (2): 500-502. — Annecke, 1968. Ent. Soc. So. Afr., Jour. 31 (2): 249-258. — Hedqvist, 1973. Ent. Tidskr. 94 (1-2): 94-96.
- hylaiei* Burks. Md., Nebr. Host: *Hylaeus cressoni* (Ckll.), *Hylaeus* sp.
Coelopenegyrtus hylaiei Burks, 1958. Wash. Acad. Sci., Jour. 48 (1): 25-26. ♂, ♀.
- Biology: Brandhorst, 1962. Ent. Soc. Amer., Ann. 55 (4): 477.
- hylaeoleter* Burks. Ont., Idaho, Utah, Calif. Host: *Hylaeus* sp., *H. ellipticus* (Kirby).
Coelopenegyrtus hylaeoleter Burks, 1958. Wash. Acad. Sci., Jour. 48 (1): 24-25. ♂, ♀.
- Biology: Krombein, 1967. Trap-nesting wasps and bees, p. 433 (host, life history).

Genus COPIDOSOMA Ratzeburg

Copidosoma Ratzeburg, 1844. Ichn. d. Forstins. v. 1, table facing p. 40, p. 157.

Type-species: *Copidosoma boucheanum* Ratzeburg. Monotypic.

Litomastix Thomson, 1876 (1875), Hym. Scand., v. 4, pp. 118, 171.

Type-species: *Eucyrtus chalconotus* Dalman. Desig. by Ashmead, 1900.

Berecynthus Howard, 1898. U. S. Natl. Mus., Proc. 21: 237-238.

Type-species: *Berecynthus bakeri* Howard. Monotypic.

Copidosomopsis Girault, 1915. Queensland Mus., Mem. 4: 94.

Type-species: *Copidosomopsis perminutus* Girault. Monotypic.

Paracopidosomopsis Girault, 1916. Psyche 23 (2): 49.

Type-species: *Berecynthus floridanus* Ashmead. Orig. desig. The type-species is considered a synonym of *Copidosoma truncatellum* (Dalman).

Verdunia Mercet, 1917. Soc. Espan. de Hist. Nat., Bol. 17 (3): 203-204.

Type-species: *Verdunia gloriosa* Mercet. Orig. desig.

Litomastiellus Mercet, 1921. Fauna Iberica, Himen., Encirtidos, p. 443.

Type-species: *Litomastix (Litomastiellus) claviger* Mercet. Desig. by Peck, 1951.

Limastotix Mercet, 1921. Fauna Iberica, Himen., Encirtidos, p. 443.

Type-species: *Litomastix (Limastotix) hispanicus* Mercet. Monotypic.

Neocopidosoma Ishii, 1923. Japan Dept. Agr. and Com., Imp. Plant Quar. Sta., Bul. 3: 101.

Type-species: *Neocopidosoma komabae* Ishii. Orig. desig.

Berecynthus Ghesquiere, 1946. Rev. Zool. Bot. Africaines 34: 368. N. name for

Berecynthus Howard.

Arrenoclavus Doutt, 1948. Pan-Pacific Ent. 24 (3): 145-148.

Type-species: *Copidosoma koehleri* Blanchard. Orig. desig.

This is a large, cosmopolitan genus whose members are polyembryonic parasites of Lepidoptera. Polyembryony in this instance seems to be an evolutionary strategy whereby a parasite of comparatively low reproductive potential has succeeded in maximizing its efficiency by completely consuming a host sometimes thousands of times larger than its own body size.

Taxonomy: Masi, 1911. Lab. Zool. Agr. Portici, Bol. 5 (4): 163-169. — Mercet, 1923. Soc.

Espan. de Hist. Nat., Bol. 23 (1): 51, 54. — Ferriere, 1949. Schweiz. Ent. Gesell., Mitt. 22

(4): 374. — Graham, 1958. Ent. Tidskr. 79 (3-4): 167-169. — Graham, 1969. Polskie Pismo

Ent. 39 (2): 300-305.

bakeri (Howard). Cosmopolitan. Host: *Chorizagrotis* sp., *C. auxiliaris* (Grote), *C. thanatologia*

Dyar, *Agrotis venerabilis* Wlkr., *Euxoa flavicollis* (Smith), *E. detersa* (Wlkr.), *E.*

tristicula (Morr.), *Cynodes devastator* (Brace), *Feltia duceus* Wlkr., *F.* sp.

Berecynthus bakeri Howard, 1898. U. S. Natl. Mus., Proc. 21: 238. ♀.

Berecynthus bakeri var. *arizonensis* Girault, 1916. Psyche 23 (2): 50. ♀.

Berecynthus bakeri var. *gemma* Girault, 1916. Psyche 23 (2): 49-50. ♂, ♀.

Berecynthus bakeri var. *euxoae* Strickland, 1916. Canad. Dept. Agr., Ent. Branch, Bul. 13: 21-22. ♀.

Biology: Gibson, 1915. Canada Dept. Agr., Ent. Branch, Bul. 10: 11. — Snow, 1925. Jour. Econ.

Ent. 18 (4): 606. — King and Atkinson, 1928. Ent. Soc. Amer., Ann. 21 (2): 174. — Huffaker,

1971. Biol. Control, p. 267.

- celaenae** Howard. Que., s. to Conn., w. to Mo., s. to Miss. Host: *Euroa scolastica* McD., *Lacinipolia venigera* (Steph.).
Copidosoma celaenae Howard, 1885. U. S. Dept. Agr., Bur. Ent., Bul. 5: 11-12, 42. ♀.
- deceptor** Miller. Cosmopolitan. Host: *Epinotia nanana* (Treit.), *Acleris variana* (Fern.), *Duvita vittella* Busck, *Eucordylia huntella* Kief., *Recurvaria apictripunctella* Clem., *R. cannella* Free., *R. milleri* Busck, *R. moreonella* Hein., *R. nanella* (Hbn.), *R. starki* Freem., *R. thujacella* Kearf., *Exoteleia dodecella* (L.), *E. pinifoliella* (Chamb.), *Argyresthia aureoargentella* Brower.
Copidosoma deceptor Miller, 1958. Pan-Pacific Ent. 34 (2): 58-60. ♀, ♂.
- Biology: Stark, 1961. Canad. Jour. Zool. 39 (6): 893-905. —Telford, 1961. Jour. Econ. Ent. 54 (2): 348. —Richards, 1963. Canad. Ent. 95 (5): 519.
- gelechia** Howard. N. H. s. to N. C., Ont., Minn. s. to Mo., Ariz. Host: *Epiblema scudderiana* (Clem.), *Gnorimoschema gallaeasterella* (Kell.), *G. gallaesolidaginis* (Riley), *G. salinaris* Busck.
Copidosoma gelechia Howard, 1885. U. S. Dept. Agr., Bur. Ent., Bul. 5: 10-11, 42. ♂, ♀.
Psilophrys hyalinipennis Howard, 1885. U. S. Dept. Agr., Bur. Ent., Bul. 5: 21, 42. ♂.
Psilophrys pallipes Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App. p. V. ♀.
Psilophrys pallidipes Schulz, 1906. Spolia Hym., p. 146. Unjustified emend.
Copidosoma gelechia var. *saga* Girault, 1920. U. S. Natl. Mus., Proc. 58: 188-189. ♂, ♀.
- Biology: Patterson, 1919. Jour. Hered. 10: 346. —Barber, 1938. N. Y. Ent. Soc., Jour. 46 (2): 169-171, 174-175. —Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 737: 37, 86. —Miller, 1963. Ohio Jour. Sci. 63: 71.
- Morphology: Leiby, 1922. Jour. Morph. 37 (1): 195-285.
- geniculatum** (Dalman). Ont., Mass., N. Y., Conn. Host: *Rhyacionia buoliana* (Schiff.).
Encyrtus geniculatus Dalman, 1820. Svenska Vetensk. Akad., Handl. 41: 361. ♂.
- Taxonomy: Mayr, 1876 (1875). Zool.-Bot. Gesell. Wien, Verhandl. 25: 734, 735, 736-737.
- Biology: Dowden, 1934. Ent. Soc. Amer., Ann. 27 (4): 600.
- intermedium** Howard. N. J., Mo., Kans. Host: *Gnorimoschema gallaeasterella* (Kell.).
Copidosoma intermedium Howard, 1885. U. S. Dept. Agr., Bur. Ent., Bul. 5: 12, 42. ♂, ♀.
- lymani** Howard. Ont. Host: *Anacampsis lupinella* Busck, *Rhyacionia buoliana* (Schiff.).
Copidosoma Lymani Howard, 1907. Canad. Ent. 39 (3): 103. ♀.
- melanocerus** (Ashmead). D. C., N. C., Iowa, Kans. Host: *Feltia* sp. (Haw.).
Liothorax melanocera Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 363. ♀.
- truncatellum** (Dalman). Que. to Fla., w. to Tex. and Ariz. Host: *Anomis erosa* Hbn., *Autographa* sp., *Spodoptera ornithogalli* (Guen.), *Trichoplusia ni* (Hbn.), *Zeuzera pyrina* (L.).
Encyrtus truncatellus Dalman, 1820. Svenska Vetensk. Akad., Handl. 41: 168-169.
Berecyrntus floridanus Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 365. ♀.
- Taxonomy: Mercet, 1921. Fauna Iberica, Himen., Encirtidos, pp. 456-457.
- Biology: Silvestri, 1906. Lab. Zool. Agr. Portici, Bol. 6: 3-51. —Silvestri, 1937. Harvard Univ., Mus. Compar. Zool., Bul. 81: 472-487. —Stoner and Weeks, 1974. Environm. Ent. 3 (6): 957-960. —Hunter and Bartlett, 1975. Ent. Soc. Amer., Ann. 68 (1): 61-62 (karyotype). —Hunter and Stoner, 1975. Environm. Ent. 4 (3): 381-382.
- turni** (Packard). N. H., Conn., N. J. Host: *Papilio glaucus* L.
Encyrtus turni Packard, 1881 (1880). Boston Soc. Nat. Hist., Proc. 21: 32-33. ♂, ♀.
- Taxonomy: Howard, 1889. In Scudder, Butterflies of Eastern U. S. and Canada, pp. 1872, 1888.
- vagum** Howard. Que., N. J., Mo. Host: *Filistima pseudoacaciella* (Chamb.).
Copidosoma vagum Howard, 1885. U. S. Dept. Agr., Bur. Ent., Bul. 5: 11, 31, 42. ♂, ♀.

Genus PARABLASTOTHRIX Mercet

- Parablastothrix* Mercet, 1917. Soc. Espan. de Hist. Nat., Bol. 17 (9): 538-540.
 Type-species: *Parablastothrix vespertinus* Mercet. Monotypic.

Parablastothrix contains only a few species and is Holarctic in distribution. The type-species has been reported as a parasite of buprestid larvae whereas the North American representative of the genus has been recorded from small Lepidoptera.

Taxonomy: Mercet, 1932. Soc. Ent. France, Liv. Cent., pp. 685-686. — Miller, 1965. Canad.

Ent. 97 (7): 750-753. — Erdos, 1955. Budapest Magyar Nemz. Muz., Ann. Hist. Nat. (n. s.) 6: 292-294. — Erdos, 1963. Beitr. zur Ent. 13 (3-4): 285.

nearctica Miller, Mich., W. Va., Miss. Host: *Obrussa* sp., *Coptodisca* sp. on *Vaccinium arboreum*.

Parablastothrix nearctica Miller, 1965. Canad. Ent. 97 (7): 750, 751-753. ♂, ♀.

Genus PARALITOMASTIX Mercet

Paralitomastix Mercet, 1921. Fauna Iberica, Himen., Encirtidos, pp. 8, 27, 58, 70, 438.

Type-species: *Encyrtus varicornis* Nees. Orig. desig.

Pseudolitomastix Risbec, 1954. Inst. Fr. Afr. Noire, Bul. 16: 1068.

Type-species: *Litomastix creona* Risbec. Orig. desig.

A cosmopolitan genus consisting of about a dozen species. *Paralitomastix* attacks Lepidoptera larvae.

Taxonomy: Risbec, 1952. Mem. Inst. Sci. Madagascar, Ser. E, Ent. 2: 6, 38-40. — Risbec, 1954.

Inst. Fr. Afr. Noire, Bul. 16 (4): 1067-1068. — Trjapitzin, 1967. Akad. Nauk SSSR Zool.

Inst., Trudy 41: 206-207. — Graham, 1969. Polskie Pismo Ent. 39 (2): 294-295.

pyralidis (Ashmead). Ont., Mich., Md. s. to Fla., w. to Utah, Calif. Host: *Anarsia lineatella* Zell., *Trichotaphe flavocostella* Clem., *T. setosella* Clem.

Encyrtus(?) *pyralidis* Ashmead, 1888. Ent. Amer. 4 (1): 15. ♀. Generic name is a lapsus for *Encyrtus*.

Copidosoma variegatum Howard, 1888. U. S. Dept. Agr., Insect Life 1 (8): 197. ♀.

Taxonomy: Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 366-367.

Biology: Pack, 1930. Utah Agr. Expt. Sta., Bul. 216: 15-16. — Maple, 1947. Calif. Univ., Pubs.

Ent. 8 (2): 109. — Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, p. 22.

Genus PENTALITOMASTIX Eady

Pseudolitomastix Eady, 1960. Bul. Ent. Res. 50 (4): 667-668. Preocc. by *Pseudolitomastix* Risbec.

Type-species: *Pseudolitomastix nacoleiae* Eady. Monotypic.

Pentalitomastix Eady, 1960. Bul. Ent. Res. 51 (1): 173. N. name for *Pseudolitomastix* Eady.

This genus has not been recorded from Africa or South America, but it probably occurs there also. *Pentalitomastix* presently consists of fewer than five species of polyembryonic parasites of Lepidoptera larvae.

Taxonomy: Eady, 1960. Bul. Ent. Res. 51 (1): 173. — Hoffer, 1960. Mus. Nat. Pragae, Acta

Faun. Ent. 6: 105-108. — Paine, 1964. So. Pacific Comm., Tech. Paper 145, p. 29.

— Trjapitzin, 1967. Akad. Nauk SSSR Zool. Inst., Trudy 41: 207-208.

plethoricus Caltagirone. Calif. Introduced, possibly established. Host: *Laspeyresia carayana* on pecan, *Paramyelois transitella* (Walk.) on pod of *Tamarindus indica*.

Pentalitomastix plethoricus Caltagirone, 1966. Pan-Pacific Ent. 42 (2): 145-149. ♂, ♀.

Biology: Caltagirone, 1971 (1970). Lab. Ent. Agr. Filippo Silvestri Portici, Bol. 28: 98-112.

Genus PENTACNEMUS Howard

Pentacnemus Howard, 1892. U. S. Natl. Mus., Proc. 15: 362, 366-367.

Type-species: *Pentacnemus bucculatricis* Howard. Monotypic.

This monotypic genus is known only from North America. The type-species is a parasite of lepidopterous larvae.

- bucculatricis** Howard. Cosmopolitan. Host: *Coleotechnites thujaella* Kearf., *Argyresthia thuella* (Pack.), *Argyresthia libocedrella* Busck on *Libocedrus decurrens*.
Pentacnemus bucculatricis Howard, 1892. U. S. Natl. Mus., Proc. 15: 366-367. ♂, ♀.
 Biology: Underhill, 1943. Va. Agr. Expt. Sta., Bul. 349: 22.

TRIBE DISCODINI

Genus DISCODES Foerster

- Discodes* Foerster, 1856. Hym. Stud., v. 2, pp. 32, 34, 144.
 Type-species: *Encyrtus aeneus* Dalman. Orig. desig.
Phaenodiscus Foerster, 1856. Hym. Stud., v. 2, p. 144. N. name for *Discodes*, thought to be too much like *Discoidea* Gray and *Discoides* Klein.
 This genus presently contains fewer than ten species. It is Holarctic in distribution and parasitizes Coccidae. There is an undescribed species in California and Washington which feeds on *Asterolecanium arabidis* (Sign.).
 Taxonomy: Ashmead, 1900. U. S. Nat. Mus., Proc. 22: 376. — Hoffer, 1954 (1953). Acta. Soc. Ent. Cechosl. 50: 156-157, 167-174. — Trjapitzin, 1967. Akad. Nauk SSSR Zool. Inst., Trudy 41: 212-213. — Trjapitzin, 1968. Vses. Ent. Obshch., Trudy 52: 114. — Graham, 1969. Polskie Pismo Ent. 39 (2): 280-282.
arizonensis (Howard). Tex., Colo., N. Mex., Ariz.
Phaenodiscus arizonensis Howard, 1898. U. S. Natl. Mus., Proc. 21: 248. ♀.
unicolor (Ashmead). Va., Ga., Fla.
Aphycus unicolor Ashmead, 1888. Ent. Amer. 4 (1): 15. ♀.

TRIBE ENCYRTINI

Genus ENCYRTUS Latreille

- Encyrtus* Latreille, 1809. Gen. Crust. Ins., v. 4, p. 31.
 Type-species: *Chrysis infidus* Rossi. Desig. by Latreille, 1810.
Eucomys Foerster, 1856. Hym. Stud., v. 2, pp. 32, 34.
 Type-species: *Encyrtus swederi* Dalman. Orig. desig.
Comys Foerster, 1856. Hym. Stud., v. 2, pp. 144-145. N. name for *Eucomys* thought to be preocc. by *Eucomis* in Liliaceae.
Howardia Dalla Torre, 1897. Wien. Ent. Ztg. 16: 86. Preocc. by *Howardia* Berlese and Leonardi, 1896.
 Type-species: *Bothriothorax peckhami* Ashmead. Monotypic.
Howardiella Dalla Torre, 1898. Cat. Hym., v. 5, p. 228. N. name for *Howardia* Dalla Torre.
Allorhopoideus Brethes, 1916. Mus. Argentina Cient. Nat., An. 27: 425.
 Type-species: *Allorhopoideus mirabilis* Brethes. Orig. desig.
Prorhopoideus Brethes, 1921. Soc. Ent. de France, Bul. for 1921, p. 80.
 Type-species: *Prorhopoideus Baezi* Brethes. Monotypic.
Encyrtus contains over 40 species. It is cosmopolitan in distribution and parasitizes Coccidae.
 Taxonomy: Graham, 1969. Polskie Pismo Ent. 39 (2): 305-311.
albicoxa (Ashmead). Fla. w. to Calif. Host: *Coccus hesperidum* L., *Planococcus citri* (Risso), *Pseudococcus longispinus* (Targ.-Tozz.).
Comys albicoxa Ashmead, 1885. Amer. Ent. Soc., Trans. 12: Proc. pp. xvi-xvii. ♂, ♀.
atys (Girault). N. Y.
Eucomys atys Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. V, p. 2. ♀.
barbatus Timberlake. Calif.
Encyrtus barbatus Timberlake, 1919. Hawaii. Ent. Soc., Proc. 4 (2): 209-212. ♂, ♀.
 Biology: Ishii, 1932. Japan Dept. Agr. and Com., Imp. Agr. Expt. Sta., Bul. 3 (3): 181, 187-188, 194.

- bicolor** (Howard). Ont. s. to D. C., w. to Mich., La., Kans., Colo., Calif. Host: *Coccus hesperidum* L., *Lecanium corni* Bouche, *L. fletcheri* Ckll.
Comys bicolor Howard, 1881. U. S. Dept. Agr. Ann., Rept. for 1880, pp. 350, 362-363. ♂, ♀.
 Biology: Hubbard, 1885. Insects Affecting the Orange, p. 52. —Craw, 1894. Calif. State Bd. Hort., Bien. Rpt. 4: 97.
- californicus** (Girault). Calif. Host: *Lecanium corni* Bouche, *L. quercifex* Fitch.
Eucomys californicus Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. V, p. 2. ♀.
 Biology: Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 115.
- cycanocephalus** Dalman. Europe, Ont.? Host: *Lecanium caryae* Fitch, *L. corni* Bouche.
Encyrtus cycanocephalus Dalman, 1820. Svenska Vetensk. Akad., Handl. 41: 344. ♀.
 Biology: Jarvis, 1911 (1910). Ent. Soc. Ontario, Ann. Rpt. 41: 75.
- fuscus** (Howard). Ont., Que., N. Y., Mass., Conn., N. J., Ohio, Ala., Kans., Calif. Host: *Lecanium corni* Bouche, *L. nigrofasciatum* Perg., *L. pruinatum* Coq., *L. spp.* on laurel-leaved oak, on *Heteromeles* and on *Quercus nigra*, *Pulvinaria vitis* (L.), *Saissetia coffeae* (Walk.).
Comys fuscus Howard, 1881. U. S. Dept. Agr., Ann. Rpt. for 1880, p. 363. ♂, ♀.
Chiloneurus maculatipennis Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., pp. 203-304. ♀.
 Taxonomy: Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 360. —Burks, 1964 (1963). Canad. Ent. 95 (12): 1256.
 Biology: Isaac, 1905. Calif. State Comn. Hort., Bien. Rpt. 1: 99. —Smith, 1915. Calif. State Comn. Hort., Monthly Bul. 4: 269.
- gastron** Walker. Fla.
Encyrtus gastron Walker, 1847. Ann. and Mag. Nat. Hist. 20 (130): 21. ♀.
 Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 148.
- infelix** (Embleton). N. Y. Host: *Saissetia coffeae* (Walk.).
Comys infelix Embleton, 1902. Ent. Soc. London, Trans., p. 223-224. ♀.
 Taxonomy: Embleton, 1904. Linn. Soc. London, Trans., Zool. (2): 9: 231-254.
 Biology: Silvestri, 1920 (1919). Lab. Zool. Agr. Portici, Bol. 13: 127-192. —Thorpe, 1936. Parasitology 28 (4): 517-540. —Maple, 1937. Ent. Soc. Amer., Ann. 30 (1): 144, 148-151.
 —Maple, 1947. Calif. Univ. Pubs., Ent. 8 (2): 82-83, 86-87. —Hamlen, 1975. Environm. Ent. 4 (6): 972-974.
- infidus** (Rossi). Europe, No. Amer.?
Chrysist infida Rossi, 1790. Fauna Etrusca, v. 2, p. 80.
Ichneumon infidus Rossi, 1794. Mant. Insect., 2 Append.: 111-112.
Pteromalus Scutellatus Swederus, 1795. Svenska Vetensk. Akad., Handl. (2) 16: 218. ♂, ♀.
 Taxonomy: Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 360.
 Biology: Clausen, 1932. Ent. Soc. Amer., Ann. 25 (4): 670-687. —Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 84, 87-88. —Sugonyayev, 1958. Ent. Rev. 37 (2): 308-309. —Kon, 1974. Ent. Rev. 53 (4): 8-21.
- kansensis** (Girault). Kans.
Eucomys kansensis Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. V, p. 2. ♀.
- lecaniorum** (Mayr). Europe, No. Amer.?
Comys Lecaniorum Mayr, 1876 (1875). Zool.-Bot. Gesell. Wien, Verhandl. 25: 740, 741. ♀.
Allothopoides mirabilis Brethes, 1916. Mus. Nac. Hist. Nat. Buenos Aires, An. 27: 425.
 Taxonomy: Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 360.
- marilandicus alpinus** (Girault). N. Y.
Eucomys marilandicus var. *alpinus* Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. V, p. 2. ♀.

marilandicus marilandicus (Girault). Maine, Md., N. C.

Encomys marilandicus Girault, 1917. Deser. Hym. Chalcidoid. Variorum cum Observ. V, p. 2. ♀.

Encyrtus marylandicus Gahan, 1928. in: Crosby and Leonard, N. Y. (Cornell) Agr. Expt. Sta., Mem. 101: 979. Unjustified emend.

peckhamii (Ashmead). Que., Ont. s. to N. C., w. Wis., Tenn. Host: *Lecanium corni* Bouche, *L. quercifex* Fitch.

Bothriothorax Peckhamii Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 132. ♂, ♀.

Howardiella peckhami Ashmead, 1900. U. S. Nat. Mus., Proc. 22: 361.

Taxonomy: Girault, 1920. U. S. Natl. Mus., Proc. 58: 183.

reate Walker. Fla.

Encyrtus Reate Walker, 1847. Ann. and Mag. Nat. Hist. 20 (130): 22. ♂.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 148.

TRIBE HABROLEPIDINI

Genus ADELENCYRTUS Ashmead

Adelencyrtus Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 341, 400.

Type-species: *Encyrtus chionaspidis* Howard. Orig. desig.

Epiencyrtiodes Girault, 1915. Queensland Mus., Mem. 4: 108.

Type-species: *Epiencyrtiodes quadridentatus* Girault. Orig. desig.

Rotrencyrtus Risbec, 1959. Bul. Acad. Malgache 35: 39.

Type-species: *Rotrencyrtus depressus* Risbec. Monotypic.

Adelencyrtus presently holds about a dozen species. The genus is cosmopolitan in distribution and its members are parasites of scale insects.

Taxonomy: Tachikawa, 1956. Insecta Matsumurana 20 (3-4): 93. —Hoffer, 1960. Mus. Nat.

Pragae, Acta Ent. 6: 114-115. —Compere and Annecke, 1961. Ent. Soc. So. Afr., Jour. 24 (1): 47-58.

aulacaspidis (Brethes). Ill., Nebr., Calif. Host: *Aulacaspis rosae* (Bouche).

Prionomitus aulacaspidis Brethes, 1914. Ann. Zool. Applicada 1: 29-30. ♀.

Taxonomy: Ferriere, 1949. Schweiz. Ent. Gesell., Mitt. 22 (4): 371. —Ferriere, 1953. Rev. Path. Veg. d'Ent. Agr. France 32 (2): 116.

Biology: Benassy, 1958. Acad. Sci. Compt. Rend. 246 (1): 179. —Tshumakova, 1961. Ent. Rev. 40 (2): 170-179. —Sugonyayev, 1962. Akad. Nauk SSSR Izv. Ser. Biol. 5: 754-766.

—Tshumakova, 1965. Ent. Rev. 44 (3): 305-308. —Sorokina, 1973. Ent. Rev. 52 (3): 397-398.

odonaspidis Fullaway. Fla. w. to Tex. Host: *Odonaspis* sp., *Antonina graminis* (Mask.) (?).

Adelencyrtus odonaspidis Fullaway, 1913. Hawaii. Agr. Exp. Sta., Ann. Rept. for 1912. pp. 27, 28, 30, 31. ♀.

Taxonomy: Timberlake, 1919. Hawaii. Ent. Soc., Proc. 4 (1): 191. —Timberlake, 1924. Hawaii. Ent. Soc., Proc. 5 (3): 432.

Biology: Swezey, 1915. Jour. Econ. Ent. 8 (5): 452. —Beardsley, 1961. Hawaii. Ent. Soc., Proc. 17 (3): 327.

Genus ANABROLEPIS Timberlake

Anabrolepis Timberlake, 1920. Hawaii. Ent. Soc., Proc. 4 (2): 431-432.

Type-species: *Anabrolepis extranea* Timberlake. Orig. desig.

Anabrolepis has not yet been reported from Africa or South America, otherwise it is cosmopolitan in distribution. It includes less than 10 described species which are parasites of the Diaspididae.

Taxonomy: Ishii, 1928. Imp. Agr. Sta. Japan, Bul. 3 (2): 148-149. —Tachikawa, 1956. Insecta Matsumurana 20 (3-4): 94. —Subba Rao, 1957. Indian Acad. Sci., Proc. Sec. B. 46 (6): 382.

—Hoffer, 1960. Mus. Nat. Pragae, Acta Faun. Ent. 6: 114.

- zetterstedtii* (Westwood). Maine w. to Mich., B. C. Host: *Quadraspidiotus ostreaeformis* (Curt.), *Q. perniciosus* (Comst.), *Lepidosaphes ulmi* (L.).
Encyrtus Zetterstedtii Westwood, 1837. London, Edinb. and Dublin Phil. Mag. and Jour. Sci. (3) 10: 440.
Encyrtus dendripennis Ratzeburg, 1852. Ichn. Forstins., v. 3, p. 189. ♀.
Eupelmus pictipennis Six, 1867. Tijdschr. Ent. 2 (2): 219.
 Taxonomy: Girault, 1920. U. S. Nat. Mus., Proc. 58: 188. —Timberlake, 1920. Hawaii. Ent. Soc., Proc. 4 (2): 432. —Gahan, 1924. U. S. Natl. Mus., Proc. 65 (4): 2-3. —Ferriere, 1940. Bul. Ent. Res. 31 (2): 133. —Hoffer, 1960. Mus. Nat. Pragae, Acta Faun. Ent. 6: 114.
 —Compere and Annecke, 1961. Ent. Soc. So. Afr., Jour. 24 (1): 58. —Botoc, 1963. Cluj. U. Baes-Bolyai Studia, Biol. Ser. 8 (2): 82. —Graham, 1969. Polskie Pismo Ent., 39 (2): 291-292.
 Biology: Zak-Ogaza, 1961. Polskie Pismo Ent. 31 (2): 366. —Sugonyayev, 1962. Akad. Nauk SSSR Izv., Ser. Biol. 5: 754-766. —Bakkendorf, 1965. Ent. Meddel. 20 (2): 112.

Genus COCCIDENCYRTUS Ashmead

- Coccidencyrtus* Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 339, 345, 383.
 Type-species: *Encyrtus ensifer* Howard. Orig. desig.
Coccidencyrtoides Blanchard, 1940. Soc. Cient. Argent., An. 130: 107.
 Type-species: *Coccidencyrtoides annulipes* Blanchard. Desig. by De Santis, 1956.
 It is difficult to determine precisely the size of *Coccidencyrtus* because of the questioned generic placement of many species. The genus is cosmopolitan in distribution and parasitizes scale insects.
 Taxonomy: Risbec, 1952. Mem. Inst. Sci. Madagascar, Ser. E. Ent. 2: 46. —Compere and Annecke, 1961. Ent. Soc. So. Afr., Jour. 24 (1): 59-65. —Tshumakova, 1961. Ent. Rev. 40 (2): 323. —Trjapitzin, 1963. Ent. Rev. 42 (4): 479-480. —Hoffer, 1963. Mus. Nat. Pragae, Acta Ent. 35: 562. —De Santis, 1964. Com. Inv. Cient. Prov. Buenos Aires, An. 4: 229.
ensifer (Howard). Maine s. to Fla., Wis. Host: *Aspidiotus corticalis* (Ckll.), *Quadraspidiotus juglansregiae* (Comst.), *Q. perniciosus* (Comst.), *Rhizaspidiotus dearnessi* (Ckll.).
Encyrtus ensifer Howard, 1885. U. S. Dept. Agr., Bur. Ent., Bul. 5: 13, 31, 42. ♂, ♀.
 Taxonomy: Girault, 1915. Ent. Soc. Amer., Ann. 8 (3): 284. —Compere, 1928. Calif. Univ., Pubs. Ent. 4 (8): 212.
ochraceipes Gahan. N. Y. Host: *Diaspis boisduvali* Sign.
Coccidencyrtus ochraceipes Gahan, 1927. U. S. Natl. Mus., Proc. 71 (4): 18-19. ♀.

Genus COMPERIELLA Howard

- Comperiella* Howard, 1906. Ent. News 17 (4): 121-122.
 Type-species: *Comperiella bifasciata* Howard. Monotypic.
Pseudanusia Girault, 1915. Queensland Mus., Mem. 4: 155.
 Type-species: *Pseudanusia pia* Girault. Orig. desig.
Habrolepistia Mercet, 1921. Fauna Iberica, Himen., Encirtidos, pp. 7, 8, 12, 14, 15, 27, 60, 66, 668-669.
 Type-species: *Habrolepistia cerapterocera* Mercet. Orig. desig. The type-species is considered a synonym of *C. bifasciata*.
Comperiella contains fewer than five species and, with the exception of South America, has been recovered on every continent. It is composed of primary, internal parasites of armored scale insects.
 Taxonomy: Timberlake, 1923. Ent. Soc. Wash., Proc. 25 (3): 59. —Compere, 1926. Calif. Univ., Pubs. Ent. 4 (2): 44-50. —Mercet, 1926. Eos 2 (4): 320. —Ayyar, 1934. Indian Mus., Rec. 36 (2): 220. —Subba Rao, 1966. Mushi 39 (13): 135. —Prinsloo and Annecke, 1976. Ent. Soc. So. Afr., Jour. 39 (2): 185-188.
bifasciata Howard. Fla., Calif. Host: *Aonidiella aurantii* (Mask.), *A. citrina* (Coq.), *Chrysomphalus aonidium* (L.). There appear to be at least two distinct races of this species.
Comperiella bifasciata Howard, 1906. Ent. News 17 (4): 122. ♀.

Biology: Flanders, 1942. Jour. Econ. Ent. 35 (6): 834-835. —Smith, 1942. Jour. Econ. Ent. 35 (6): 809-812. —Flanders, 1943. Jour. Econ. Ent. 36 (2): 233-235. —Flanders, 1944. Ent. Soc. Amer., Ann. 37 (3): 365. —Swezey, 1923. Hawaii. Ent. Soc., Proc. 5 (2): 301. —Timberlake, 1924. Hawaii. Ent. Soc., Proc. 5 (3): 433. —Compere and Smith, 1927. Calif. Univ., Pubs. Ent. 4 (4): 64-70. —Moutia, 1934. Mauritius Dept. Agr., Ann. Rpt. for 1933, p. 27. —Coy, 1938. Calif. Dept. Agr., Bul. 27 (4): 445-446. —Swezey *et al.*, 1939. Hawaii. Ent. Soc., Proc. 10 (2): 351. —Smith, 1941. Calif. Citrog. 26 (3): 58, 76. —Campbell, 1943. Austral. Coun. Sci. Ind. Res., Jour. 16 (1): 41-42. —Woglum, *et al.*, 1947. Jour. Econ. Ent. 40 (6): 820. —Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 74, 76. —DeBach, 1948. Jour. Econ. Ent. 41 (6): 985. —DeBach, 1952. Calif. Citrog. 37 (4): 136. —Flanders, 1956. Lab. Zool. Gen. Agr. Fac. Agr. Portici, Bol. 33: 14. —Tshumakova, 1957. Ent. Oboz. 36 (3): 643-651. —Smith, 1957. Canad. Ent. 85 (5): 220. —Azim, 1961. Mushi 35 (14): 104. —Annecke, 1962. So. Afr. Jour. Agr. Sci. 5 (2): 281-282. —Rimes, 1962. West. Austral. Dept. Agr., Jour. 3 (11): 881. —DeBach, 1965. Canad. Ent. 97 (8): 859. —Subba Rao, 1966. Mushi 39 (13): 135-138. —Trjapitzin, 1968. Vses. Ent. Obshch., Trudy 52: 75. —DeBach, 1964. Biol. Control Insect Pests and Weeds, pp. 133, 288, 323, 350, 354, 451, 676. —Brewer, 1971. Austral. Jour. Zool. 19 (1): 53-63. —Huffaker, 1971. Biol. Control, pp. 74-75, 79, 181, 186. —DeBach, 1974. Biol. Control by Nat. Enem., pp. 179, 180, 181, 200, 203, 206. A more extensive bibliography is provided by Peck (1963).

Genus HABROLEPIS Foerster

Habrolepis Foerster, 1856. Hym. Stud., v. 2, pp. 34, 38.

Type-species: *Encyrtus nubilipennis* Walker. Orig. desig. The type-species is considered a synonym of *Encyrtus dalmanni* Westwood.

Gymnoneura Risbec, 1951. Mem. Inst. Fr. Afr. Noire 13: 157.

Type-species: *Gymnoneura bambeyi* Risbec. Monotypic.

Habrolepis contains about a dozen species which develop as primary internal parasites of scale insects. Some species have been used in biological control programs with varying degrees of success. The genus has not been reported from South America and one species, *H. rouxi*, was introduced into North America for biological control of the California red scale.

Taxonomy: Timberlake, 1921. Hawaii. Ent. Soc., Proc. 4 (2): 432. —Ferriere, 1953. Rev. Path. Veg. d'Ent. Agr. France 32 (2): 115. —Tachikawa, 1956. Insecta Matsumurana 20 (3-4): 95. —Hoffer, 1960. Mus. Nat. Pragae, Acta Faun. Ent. 6: 114. —Delucchi, 1965. Entomophaga 10 (3): 295-304. —Graham, 1969. Polskie Pismo Ent. 39 (2): 290-291. —Annecke and Mynhardt, 1970. Entomophaga 15 (2): 127-148.

dalmanni (Westwood). Mass., Conn., Ohio. Host: *Asterolecanium quercicola* (Bouche), *A. variolosum* (Ratz.), *Lepidosaphes ulmi* (L.).

Encyrtus Dalmanni Westwood, 1837. London. Edinb. and Dublin Phil. Mag. and Jour. Sci. 10 (3): 440.

Habrolepis Dalmani Mayr, 1876 (1875). Zool.-Bot. Gesell. Wien, Verh. 25: 751. ♂, ♀. Unjustified emend.

Biology: Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 90. —Balachowsky, 1929. Ann. Epiphy. 14 (4): 303, 304. —Nicholls, 1933. Tasmanian Jour. Agr. 4 (1): 24-26. —Gourlay, 1935. New Zeal. Jour. Sci. Tech. 16 (4): 216-235. —Nicholson, 1935. Austral. Council Sci. Indus. Res., Ann. Rpt. for 1934-1935, 9 (209): 33. —Evans, 1939. Tasmanian Jour. Agr. 10 (4): 202-203. —Evans, 1945. Ann. Appl. Biol. 32 (2): 179-180. —Tsalev and Vloheva, 1963. Gorskio Stopanstvo 19 (1): 23. —Tsaleff and Valcheva, 1963. Sofia. Rast. Zashch. 11 (9): 27. —Delucchi and Traboulsi, 1965. Soc. Ent. de France, Ann. (n. s.) 1 (2): 495-500.

rouxi Compere. Calif. Introduced. Host: *Aonidiella aurantii* Mask. on citrus.

Habrolepis rouxi Compere, 1936. Bul. Ent. Res. 27 (3): 493-496. ♀.

Biology: Compere, 1937. Calif. Citrog. 23 (2): 58, 88. —Flanders, 1942. Ecology 23 (1): 120-121. —Flanders, 1944. Jour. Econ. Ent. 37 (3): 444-445. —Flanders, 1945. Amer. Nat. 79 (781): 126, 131, 133-136. —Flanders, 1946. Pan-Pacific Ent. 22 (1): 35. —Omer-Cooper and Whitehead, 1950. Citr. Grower, no. 195, p. 3. —Flanders, 1956. Lab. Zool. Gen. Agr. Fac. Agr. Portici, Bol. 33: 55. —Smith, 1957. Canad. Ent. 89 (5): 219-230. —Weber, 1957. Hawaii.

Ent. Soc., Proc. 16 (2): 183. —Compere, 1961. *Hilgardia* 31 (7): 173-278. —Annecke, 1962. So. Afr. Jour. Agr. Sci. 5 (2): 281. —Annecke, 1963. Ent. Soc. So. Afr., Jour. 26 (1): 207, 220. —Delucchi and Troublouisi, 1965. Ent. Soc. de France, Ann. (n. s.) 1 (2): 499. —Huffaker, 1971. Biol. Control, p. 74.

Genus NEOCOCCIDENCYRTUS Compere

Neococcidencyrtus Compere, 1928. Calif. Univ., Pubs. Ent. 4 (8): 209-212.

Type-species: *Neococcidencyrtus aulula* Compere. Orig. desig. The type-species designation of *aulula* is a lapsus of *n. aulula*.

This small genus consists of a few species which are Neotropical and Holarctic in distribution. Its members are parasites of scale insects.

poutiersi (Mercet). Calif. Host: *Furchadaspis zamiae* (Morg.).

Coccidencyrtus poutiersi Mercet, 1922. Soc. Espan. de Hist. Nat., Bol. 22 (9): 399-402.

Neococcidencyrtus aulula Compere, 1928. Calif. Univ., Pubs. Ent. 4 (8): 213-214. ♂, ♀.

Genus PLAGIOMERUS Crawford

Plagiomerus Crawford, 1910. U. S. Natl. Mus., Proc. 38: 89.

Type-species: *Plagiomerus diaspidis* Crawford. Orig. desig.

This genus contains three species and it appears to be Nearctic in distribution. The occurrence of one species, *P. diaspidis*, in the Palearctic appears due to accidental introduction with parasitized host material.

Taxonomy: Gahan, 1924. U. S. Natl. Mus., Proc. 65 (4): 1. —Trjapitzin, 1968. Vses. Ent.

Obshch., Trudy 52: 76.

cyaneus (Ashmead). Fla.

Comys cyanea Ashmead, 1888. Ent. Amer. 4 (1): 17. ♀.

Taxonomy: Dozier, 1926. Puerto Rico Dept. Agr., Jour. 10 (3-4): 273-274.

diaspidis Crawford. Md. s. to Fla., w. to Calif. Host: *Diaspis echinocacti* (Bouche).

Plagiomerus diaspidis Crawford, 1910. U. S. Natl. Mus., Proc. 38: 90. ♀.

Biology: Gordh and Lacey, 1976. Ent. Soc. Wash., Proc. 78 (2): 132-144.

Genus PSEUDHOMALOPODA Girault

Pseudhomalopoda Girault, 1915. N. Y. Ent. Soc., Jour. 23 (3): 171.

Type-species: *Pseudhomalopoda prima* Girault. Orig. desig.

Pseudhomalopoda contains fewer than five species which are distributed in the Pacific and Holarctic regions. The species are parasites of scale insects.

Taxonomy: Tachikawa, 1956. Insecta Matsumurana 20 (3-4): 90-96. —Tachikawa, 1963. Mem.

Ehime Univ. Sec. 6 (Agr.) 9 (1): 17, 95, 101-102.

prima Girault. Fla. w. to Tex. Host: *Aleurocanthus woglumi* Ashby?, *Aonidiella aurantii* (Mask.), *Chrysomphalus aonidum* (L.).

Pseudhomalopoda prima Girault, 1915. N. Y. Ent. Soc., Jour. 23 (3): 171-172. ♀.

Biology: Griffiths and Stearns, 1947. Fla. Ent. 30 (1): 4-7. —Muma and Clancy, 1961. Fla.

State Hort. Soc., Proc. 74: 29-32. —Clancy *et al.*, 1963. Jour. Econ. Ent. 56 (5): 604.

—Anonymous, 1964. Fitofolo 17 (43): 28.

TRIBE HOMALOTYLINI

Genus ANISOTYLUS Timberlake

Anisotylus Timberlake, 1919. U. S. Natl. Mus., Proc. 56: 170-171.

Type-species: *Homalotylus similis* Ashmead. Orig. desig.

A small genus with fewer than five species, *Anisotylus* is found in North America and Japan. The species of this genus are parasitic on coccinellid beetle larvae.

pallentipes Timberlake. Mo., Ariz.

Anisotylus pallentipes Timberlake, 1919. U. S. Natl. Mus., Proc. 56: 171, 175-176. ♀.

similis similis (Ashmead). Fla. Host: *Scymnus cervicalis* Muls.

Homalotylus similis Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 190. ♀.

Taxonomy: Timberlake, 1919. U. S. Natl. Mus., Proc. 56: 171-173.

similis texanus Timberlake. Tex. Host: *Hyperaspis bigeminata* (Rand.).

Anisotylus similis texanus Timberlake, 1919. U. S. Natl. Mus., Proc. 56: 171, 173. ♀.

similis utahensis Timberlake. Utah, Calif. Host: *Scymnus americanus* Muls., *S. lacustris* Lec.

Anisotylus similis utahensis Timberlake, 1919. U. S. Natl. Mus., Proc. 56: 171, 174. ♂, ♀.

Genus HOMALOTYLUS Mayr

Homalotylus Mayr, 1876 (1875). Zool.-Bot. Gesell. Wien, Verhandl. 25: 752-753.

Type-species: *Encyrtus flaminus* Dalman. Desig. by Ashmead, 1900.

Nobrimus Thomson, 1876 (1875). Hym. Scand., v. 4, pp. 116, 137-138.

Type-species: *Encyrtus flaminus* Dalman. Desig. by Timberlake, 1919.

Mendozaniella Brethes, 1913. Buenos Aires Mus. Nac. de Hist. Nat., An. 24: 97-98.

Type-species: *Mendozaniella mirabilis* Brethes. Monotypic.

Hemaenasoidea Girault, 1916. Ent. Soc. Amer., Ann. 9 (3): 307.

Type-species: *Hemaenasoidea oculata* Girault. Monotypic.

Lepidaphycus Blanchard, 1936. Soc. Ent. Argentina, Rev. 8: 13-14.

Type-species: *Lepidaphycus bosqui* Blanchard. Orig. desig.

This cosmopolitan genus consists of about 35 described species. They are internal parasites of coccinellid beetle larvae.

Taxonomy: Timberlake, 1919. U. S. Natl. Mus., Proc. 56: 134-170. — Masi, 1919. Genova Mus.

Civ. Stor. Nat., Ann. (3) 48: 295-300. — Risbec, 1951. Inst. Fr. Afr. Noire, Mem. 13: 151-153.

— Risbec, 1952. Inst. Sci. Madagascar Ser. E, Ent., Mem. 2: 5, 6, 25. — Hoffer, 1959. Mus.

Nat. Prageae, Acta Ent. 33: 30. — Hoffer, 1963. Mus. Nat. Prageae, Acta Ent. 35: 582-591.

— De Santis, 1963. Com. Inv. Cient. Prov. Buenos Aires, An. 4: 162. — Graham, 1969.

Polskie Pismo Ent. 39 (2): 233-235.

Biology: Geyer, 1947. Ent. Soc. So. Afr., Jour. 10 (1): 102. — Zinna, 1961 (1960). Portici Lab.

Ent. Agr. Filippo Silvestri, Bol. 18: 260-261.

affinis Timberlake. Calif. Host: *Hyperaspis osculans* Lec.

Homalotylus affinis Timberlake, 1919. U. S. Natl. Mus., Proc. 56: 162, 165-166. ♀.

albitarsus Gahan. Md. Host: *Lecanium? nigrofasciatum* Perg. on peach; coccinellid.

Homalotylus albitarsus Gahan, 1910. Canad. Ent. 42 (6): 206-207. ♀.

cockerelli Timberlake. Tex. Host: *Dactylopius confusus* (Ckll.)?, *Pseudococcus* sp.?,

Hyperaspis trimaculatus (L.).

Homalotylus cockerelli Timberlake, 1919. U. S. Natl. Mus., Proc. 56: 162, 163-165. ♂, ♀.

flaminus (Dalman). La.

Encyrtus flaminus Dalman, 1820. Svenska Vetensk. Akad., Handl. 41: 340-346. ♂.

Lepidaphycus bosqui Blanchard, 1936. Rev. Soc. Ent. Argentina 8: 14-15.

Mendozaniella mirabilis Brethes, 1913. Buenos Aires Mus. Nac. de Hist. Nat., An. 24:

98-99.

Taxonomy: Masi, 1907. Lab. Zool. Portici, Bol. 1: 288-290. — Masi, 1919. Genova Mus. Civ.

Stor. Nat., Ann. 48: 296-298. — Mercet, 1921. Fauna Iberica, Himen., Encirtidos, pp.

519-522, 712. — Mercet, 1923. Soc. Espan. de Hist. Nat., Bol. 23 (3): 143. — Timberlake,

1924. Hawaii. Ent. Soc., Proc. 5 (3): 430. — Pruthi and Mani, 1940. Imp. Council Agr. Res.,

Misc. Bul. (India) 30: 14. — d'Araujo e Silva, 1945. Bol. Fitossan. 1 (1): 29-35. — Ferriere,

1949. Schweiz. Ent. Gesell., Mitt. 22 (4): 378-379. — Rogojanu, 1955. Bucharest Acad.

Repub. Romine, Fil. Cluj. Stud. Cercet. Sti., (2), 6 (3-4): 79. — Tawfik *et al.*, 1962. Soc. Ent.

Egypt, Bul. 46: 503. — Bakkenndorf, 1965. Ent. Meddel. 30 (2): 133-134. — Trjapitzin, 1968.

Vses. Ent. Obshch., Trudy 52: 68-69.

hyperaspidis Timberlake. Utah, Calif. Host: *Hyperaspis undulata* (Say).

Homalotylus hyperaspidis Timberlake, 1919. U. S. Natl. Mus., Proc. 56: 162, 167-169. ♂, ♀.

punctifrons Timberlake. Fla.

Homalotylus punctifrons Timberlake, 1919. U. S. Natl. Mus., Proc. 56: 162, 169-170. ♀.

terminalis californicus Girault. Mass., s. to S. C., Utah, Calif. Host: *Adalia bipunctata* (L.), *Coccinella novemnotata* Hbst., *C. quinque-notata* Kby., *C. transversoguttata* Fald., *Hippodamia convergens* Guer., *Disonycha* sp.

Homalotylus obscurus var. *californicus* Girault, 1915. Ent. Soc. Amer., Ann. 8 (3): 274. ♀.

terminalis terminalis (Say). Eastern U. S., Tex. Host: *Coleomegilla maculata* (Deg.), *C. sp.*, *Cycloneda sanguinea* (L.), *C. sanguinea immaculata* (F.); *Chilocorus similis* (Rossi); *Coccinella novemnotata* Hbst., *C. sanguinea* (L.); *Hippodamia convergens* Guer., *Neomysia pullata* (Say), *Psyllobora vigintimaculata* (Say); *Scymnus* sp.

Serlion(!) *terminalis* Say, 1828. Contrib. Maclur. Lyc. Phila. 1: 80. Generic name a *lapsus* for *Scelio*.

Eutelust scymnae Shimer, 1869. Amer. Ent. Soc., Trans. 2: 385. ♂.

Homalotylus obscurus Howard, 1885. U. S. Dept. Agr., Bur. Ent., Bul. 5: 22, 32, 43. ♀.

Genus ISODROMUS Howard

Isodromus Howard, 1887. U. S. Dept. Agr., Ann. Rept. for 1886. p. 488.

Type-species: *Isodromus iceryae* Howard. Monotypic.

Parataneostigma Girault, 1915. Ent. Soc. Amer., Ann. 8 (3): 275.

Type-species: *Parataneostigma nigriaxillae* Girault. Monotypic. The type-species is considered a synonym of *Isodromus iceryae* Howard.

Isodromus is a cosmopolitan genus consisting of 13 species that parasitize chrysopids and hemerobiids.

Taxonomy: Timberlake, 1919. U. S. Natl. Mus., Proc. 56: 176-190. —Annecke, 1962. Ent. Soc. So. Afr., Jour. 25 (2): 188-191. —Trjapitzin, 1968. Vses. Ent. Obshch., Trudy 52: 69.

atriventris Ashmead. Ont., Que. s. to Fla. Host: *Chrysopa lateralis* Guer.

Isodromus atriventris Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 379. ♀.

iceryae Howard. Cosmopolitan. Host: *Symphorobius angustus* (Banks), *S. californicus* (Banks), *Chrysopa californica* Coq., *C. lateralis* Guer., *C. rufilabris* Burm.

Isodromus iceryae Howard, 1887. U. S. Dept. Agr., Ann. Rept. for 1886. p. 488. ♀.

Parataneostigma nigriaxillae Girault, 1915. Ent. Soc. Amer., Ann. 8 (3): 275. ♀.

Isodromus pulcher Girault, 1917. Descr. Stellarum Nov., p. 16. ♀.

Biology: Riley, 1889. U. S. Dept. Agr., Ann. Rept. for 1888, pp. 85-86. —Clancy, 1946. Calif. Univ., Pubs. Ent. 7 (13): 426-432. —Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 91-92.

—Muma, 1959. Fla. Ent. 42 (3): 151, 152.

montanus Slosson. N. H., Colo. Host: *Chrysopa* sp. Type lost, but may be *Isodromus vinulus* (Dalman).

Isodromus montanus Slosson, 1895. Ent. News 6 (9): 278.

niger Ashmead. Mass. s. to D. C., w. to Wis., Calif. Host: *Symphorobius angustus* (Banks), *Chrysopa californica* Coq., *C. majuscula* Banks, *C. oculata* Say.

Isodromus niger Ashmead, 1900. U. S. Natl. Mus., Proc., 22: 379. ♀.

Biology: Clancy, 1946. Calif. Univ., Pubs. Ent. 7 (13): 418-426. —Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 91-92.

puncticeps (Howard). Eastern U. S., Calif. Host: *Chrysopa* sp.

Encyrtus puncticeps Howard, 1885. U. S. Dept. Agr., Bur. Ent., Bul. 5: 14, 42. ♀.

Aphyus chrysopae Ashmead, 1888. Ent. Amer. 4 (1): 15. ♀.

TRIBE IXODIPHAGINI

Genus HUNTERELLUS Howard

Hunterellus Howard, 1908. Canad. Ent. 40 (7): 240-241.

Type-species: *Hunterellus hookeri* Howard. Monotypic.

Hunterellus is worldwide in distribution and contains fewer than five species. They are parasites of tick nymphs.

Taxonomy: Howard, 1908. Canad. Ent. 40 (7): 239-241. — Risbec, 1954. Inst. Fr. Afr. Noire, Bul. Ser. A 16 (4): 1070-1071. — Oliver, 1964. Pan-Pacific Ent. 40 (4): 227-230.

Biology: Doube and Heath, 1975. Jour. Med. Ent. 12 (4): 443-447.

hookeri Howard. Mass. s. to Fla. w. to Mont., Idaho, Calif. Host: *Dermacentor andersoni* Stiles, *D. parumapterus* Neum., *D. variabilis* (Say), *Haemaphysalis leporispalustris* (Pack.), *Ixodes dentatus* Marx, *I. muris* B. and S., *I. scapularis* Say, *Rhipicephalus sanguineus* (Latr.).

Haemarellus Hookeri Howard, 1908. Canad. Ent. 40 (7): 241. ♂, ♀.

Ixodiphagus Caucurtei du Buysson, 1912. Arch. de Parasitol. 15: 246-247. ♂, ♀.

Habrolepis caniphila Risbec, 1951. Inst. Fr. Afr. Noire, Mem. 13: 170-172.

Taxonomy: Gahan, 1934. Ent. Soc. Wash., Proc. 36 (6): 89-97. — Quaraishi, 1958. Amer. Midland Nat. 59 (2): 489-504.

Biology: Wood, 1911. Jour. Econ. Ent. 4 (5): 425-431. — Cooley, 1927. Mont. State Bd. Ent., Bien. Rpt. 6: 15-17. — Cooley and Kohls, 1928. Science 67 (1748): 656. — Cooley, 1929 (1927-1928). Mont. State Bd. Ent., Bien. Rpt. 7: 10-16; 17-31. — Morton, 1929 (1927-1928). Mont. State Bd. Ent., Bien. Rpt. 7: 32-35. — Parker and Butler, 1929 (1927-1928). Mont. State Bd. Ent., Bien. Rpt. 7: 35-38. — Cooley, 1930. Mont. State Bd. Ent., Bien. Rpt. 8: 16-25. — Cooley and Kohls, 1934. Fifth Pacific Sci. Cong., Proc. B. 5: 3375-3381. — Bishopp, 1938. U. S. Dept. Agr., Cir. 478: 23. — Smith and Cole, 1943. Jour. Econ. Ent. 36 (4): 569-572. — Ushakova, 1962. Kazan Inst. Zool. Akad. Nauk SSSR, Trudy 16: 183-185.

Genus IXODIPHAGUS Howard

Ixodiphagus Howard, 1907. Ent. News 18 (9): 377.

Type-species: *Ixodiphagus texanus* Howard. Monotypic.

Ixodiphagus is apparently a monotypic genus distributed throughout the Holarctic Region. The type-species parasitizes tick nymphs.

Taxonomy: Hoffer, 1963. Mus. Nat. Pragae, Acta Ent. 35: 591.

texanus Howard. Mass., Minn. w. to Idaho, Tex. Host: *Dermacentor variabilis* (Say), *Haemaphysalis leporispalustris* (Pack.), *Ixodes cookei* Pack., *I. dentatus* Marx, *I. scapularis* Say, *Rhipicephalus sanguineus* (Latr.).

Ixodiphagus texanus Howard, 1907. Ent. News 18 (9): 376, 377-378. ♀.

Taxonomy: Gahan, 1934. Ent. Soc. Wash., Proc. 36 (6): 89-97. — Quaraishi, 1958. Amer. Midland Nat. 59 (2): 502.

Biology: Larson, 1937. Jour. Parasitol. 24: 496-498. — Larson and Green, 1938. Jour. Parasitol. 24: 363-368. — Smith *et al.*, 1946. U. S. Dept. Agr., Tech. Bul. 905: 72.

TRIBE MICROTERYINI

Genus AGROMYZAPHAGUS Gahan

Agromyzaphagus Gahan, 1912. Ent. Soc. Wash., Proc. 14 (1): 6-7.

Type-species: *Agromyzaphagus detrimentosus* Gahan. Orig. desig.

This monotypic genus is Holarctic. It parasitizes flies of the genus *Leucopis*.

Taxonomy: Mercet, 1926. Eos 2 (4): 317. — Trjapitzin, 1968. Vses. Ent. Obshch., Trudy 52: 65-66.

detrimentosus Gahan. Md. w. to Wis., Utah, Calif. Host: *Leucopis nigricornis* Egger?, *L. sp.* on plum.

Agromyzaphagus detrimentosus Gahan, 1912. Ent. Soc. Wash., Proc. 14 (1): 7. ♂, ♀.

Genus APHIDENCYRTUS Ashmead

Aphidencyrtus Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 340, 347, 398.

Type-species: *Encyrtus aphidiphagus* Ashmead. Orig. desig. The type-species is considered a synonym of *Encyrtus aphidivorus* Mayr.

This is a cosmopolitan genus consisting of about 20 species which are hyperparasites (and perhaps primary parasites) of aphids.

Taxonomy: Gahan, 1923. Ent. Soc. Wash., Proc. 25 (9): 187-188. —Narayanan, 1941. Indian Jour. Ent. 3 (1): 62. —Risbec, 1952. Inst. Sci. Madagascar Ser. E, Ent., Mem. 2: 6, 52.
—Alam, 1961. Beitr. zur Ent. 11 (7-8): 803-807. —Hoffer, 1965. Acta Ent. Bohemoslov. 62 (2): 110-128. —Trjapitzin, 1967. Akad. Nauk SSSR Zool. Inst., Trudy 41: 202-205.
—Graham, 1969. Polskie Pismo Ent. 39 (2): 252-255.

aphidivorus (Mayr). Maine, Conn. s. to Fla., w. to La., Idaho. Host: *Rhopalosiphonius solani* (Thos.), *Nearctaphis bakeri* (Cowen), *Carariella aquatica* (G. and B.), *Brevicoryne brassicae* (L.), *Acyrtosiphon cornelli* (Patch), *M. avenae* (F.), *M. liriiodendri* (Monell), *Myzus persicae* (Sulz.), *Schizaphis graminum* (Rond.), *Trialeurodes vaporariorum* (Westw.), *Aphelinus juncundus* Gahan, *A. sanborniae* Gahan, *A. semiflavus* How., *A. sp.*, *Aphidius testaceipes* (Cress.), *A. spp.*

Encyrtus aphidivorus Mayr, 1876 (1875). Zool.-Bot. Gesell. Wien, Verhandl. 25: 712-713, 724. ♂, ♀.

Eupelmus schizoneuræ Ashmead, 1885. Amer. Ent. Soc., Trans. 12: Proc. p. xvi. ♂, ♀ (under *Encyrtus*).

Encyrtus aphidiphagus Ashmead, 1887. U. S. Dept. Agr., Div. Ent., Bul. 14: 14. ♀.

Encyrtus megouræ Ashmead, 1887. U. S. Dept. Agr., Div. Ent., Bul. 14: 19. ♂, ♀.

Encyrtus Websteri Howard, 1890. U. S. Dept. Agr., Insect Life 2 (7-8): 247-248. ♂, ♀.

Microterys submetallicus Mercet, 1921. Fauna Iberica, Himen., Encirtidos, p. 354. Preocc. by Howard, 1896.

Syrphophagus silvestrinus Ghesquiere, 1956 Lab. Zool. Gen. e Agr. Portici, Bol. 33: 701. (n. name for *submetallicus* Mercet).

Syrphophagus merceti Erdos, 1957. Folia Ent. Hungarica (n. s.) 10 (1): 45 (n. name for *submetallicus* Mercet).

Taxonomy: Gahan, 1924 (1923). Ent. Soc. Wash., Proc. 25 (9): 187-188. —Gahan, 1927. U. S. Natl. Mus., Proc. 71 (4): 18. —Gahan, 1930. U. S. Natl. Mus., Proc. 77 (8): 6-7. —Mercet, 1932. Los paras. los ins. perjud. Barcelona, pp. 108-109. —Narayanan, 1941. Indian Jour. Ent. 3 (1): 62. —Ferriere, 1961. Entomophaga 6 (1): 48-49. —Bakkendorf, 1965. Ent. Meddel. 30 (2): 114-115. —Hoffer, 1965. Acta. Ent. Bohemoslov. 62 (2): 112-115.

Biology: Pashchenko, 1961. Kazakh. Akad. Sel'sk. Nauk. Nauch. Inst. Zash. Rast., Trudy 6: 218. —Szalay-Marzso and Solymosy, 1961-1962. Acta Agron. (Budapest). 11 (3-4): 329-342. —Akhvledinana, 1963. Akad. Nauk Gruzinskoi SSR, Soobshch. 30 (6): 781. —Hassan, 1963. United Arab Repub. Min. Agr., Agr. Ext. Dept., p. 5. —Grigorov, 1964. Rast. Zashch. 12 (4): 32. —Sharma, 1965. Paris Univ. Facul. Sci. Theses, Ser. A, 4510, p. 109. —Radev, 1968. Rast. Nauki (Sofia) 5 (10): 126.

lachni (Ashmead). Fla. Host: *Cinara australi* (Ashm.).

Eupelmus lachni Ashmead, 1885. Amer. Ent. Soc., Trans. Proc. p. xvi. ♀ (under *Encyrtus*).

Taxonomy: Gahan, 1927. U. S. Natl. Mus., Proc. 71 (4): 18.

Genus AVETIANELLA Trjapitzin

Avetianella Trjapitzin, 1968. Vses. Ent. Obshch., Trudy 52: 97-99.

Type-species: *Avetianella capnodiobia* Trjapitzin. Orig. desig.

An undetermined species has been taken in California on *Pinus lambertiana*.

Genus CERCHYSIUS Westwood

Cerchysius Westwood, 1832. London, Edinb. and Dublin Phil. Mag. and Jour. Sci. (3) 1: 127.

Type-species: *Encyrtus urocerus* Dalman. Desig. by Westwood, 1840. The type-species is considered a synonym of *Encyrtus subplanus* Dalman.

There are about twenty species of *Cerchysius* distributed throughout the world. Members of the genus are probably parasites of Diptera.

- Taxonomy: Girault, 1918. Ent. News 29 (2): 65-66. —Kerrich, 1954. Ann. and Mag. Nat. Hist. (12) 8: 371-379.
- elasmoceri** Ashmead, D. C., Va. Host: *Monophylla terminata* (Say).
Cerchysius elasmoceri Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 379-380. ♀.
- Taxonomy: Girault, 1917 (1916). Insecutor Inscitiae Menstruus 4 (10-12): 119-120. —Girault, 1918. Ent. News 29 (2): 65.
- hubbardii** Ashmead, Wash., Calif. Host: *Vrilletta hubbardi* Schwarz (?nomen nudum) infesting stems of *Alleuroffia occidentalis*.
Cerchysius hubbardi Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 380. ♀.
- marilandicus** Girault. Md., Wisc, Ind., N. H.
Cerchysius marilandicus Girault, 1917 (1916). Insecutor Inscitiae Menstruus 4 (10-12): 119-120. ♀.
- Cerchysius marylandicus* Peck, 1951. U. S. Dept. Agr., Agr. Monog. 2: 483. Unjustified emendation.
- pallipes** (Provancher). Ont.
Copidosoma pallipes Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 205. ♀.
Copidosoma pallidipes Dalla Torre, 1898. Cat. Hym. v. 5, p. 243. Unjustified emend.
- Taxonomy: Burks, 1964 (1963). Canad. Ent. 95 (12): 1257.

Genus MICROTERYS Thomson

- Sceptrophorus* Foerster, 1856. Hym. Stud., v. 2, pp. 34, 38.
 Type-species: *Encyrtus sceptriger* Foerster. Desig. by Ashmead, 1900.
- Microterys* Thomson, 1876 (1875). Hym. Scand. v. 4, pp. 118, 155.
 Type-species: *Encyrtus sylvius* Dalman. Desig. by Ashmead, 1900.
- Apentilicus* Fullaway, 1913. Hawaii Agr. Expt. Sta., Rpt. for 1912, p. 26.
 Type-species: *Apentelicus kotinskyi* Fullaway. Orig. desig.
- The names *Microterys* and *Sceptrophorus* have been used interchangeably in the literature. Rosen (1973, Bul. Zool. Nomencl. 30 (2): 108-111) proposed that *Sceptrophorus* be suppressed. The actual number of *Microterys* spp. can only be speculated at this time. Currently we recognize over 170 names in the genus, some of which are undoubtedly junior synonyms. The genus probably contains over 100 valid species. The New World fauna is poorly known.
- This genus is important to biological control because many species are primary parasites of soft scale insects. Representatives of *Microterys* have been reported on all families of scale insects except the Diaspididae and Asterolecanidae.
- Taxonomy: Girault, 1917. Descr. Stellarum Nov., p. 13. —Mercet, 1917. Soc. Espan. de Hist. Nat., Bol. 17 (2): 128-139. —Timberlake, 1923. Ent. Soc. Wash., Proc. 25 (3): 58-59.
 —Compere, 1926. Calif. Univ., Pubs. Ent. 4 (2): 34. —Ishii, 1928. Imp. Agr. Sta. Japan, Bul. 3 (2): 130. —Compere, 1939. Bul. Ent. Res. 30 (1): 16. —Erdos, 1957. Acta. Zool. (Budapest). 3 (1-2): 37. —Annecke, 1962. Ent. Soc. So. Afr., Jour. 25 (2): 30. —Bakkendorf, 1965. Ent. Meddel. 30 (2): 144. —Pilipyuk and Sugonyayev, 1971. Ent. Rev. 50 (1): 78-84.
 —Rosen, 1973. Ent. Soc. Austral., Jour. 12 (4): 248-252. —Prinsloo, 1975. Ent. Soc. So. Afr., Jour. 38 (1): 19-37. —Prinsloo and Rosen, 1975. Ent. Soc. So. Afr., Jour. 38 (1): 85-88.
 —Rosen, 1976. Ent. Soc. Amer., Ann. 69 (3): 479-485.
- cincticornis** Ashmead, N. H., Mass., Ill. Host: *Kermes pubescens* Bogue.
Microterys cincticornis Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 390.
- claripennis** Compere. Calif., N. C., Pa. Host: *Lecanium corni* Bouche.
Microterys claripennis Compere, 1928. Calif. Univ., Pubs. Ent. 4 (8): 216-217. ♂, ♀.
- dubiosus** (Dalla Torre). Calif. Host: *Icerya purchasi* Mask.
Encyrtus dubius Howard, 1889. U. S. Dept. Agr., Insect Life 1 (9): 270. ♂. Preocc. by Fonscolombe, 1840.
Encyrtus dubiosus Dalla Torre, 1898. Cat. Hym., v. 5, p. 257. N. name.
- flavus** (Howard). Ont., N. J., Ohio, Ill., Fla., Calif. Host: *Coccus hesperidum* L., *C. pseudomagnoliarum* (Kuw.), *Lecanium corni* Bouche, *L. fletcheri* Ckll., *Pulvinaria vitis* (L.), *Saissetia coffeae* (Walk.).
Encyrtus flavus Howard, 1881. U. S. Dept. Agr., Ann. Rpt. for 1880, p. 367. ♂, ♀.

- Biology: Isaac, 1905. Calif. State Commr. Hort., Bien. Rpt. 1: 99, 102. —Timberlake, 1913. Jour. Econ. Ent. 6 (3): 298. —Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 98-100, 102-103. —Bartlett and Lagace, 1961. Ent. Soc. Amer., Ann. 54 (2): 222-227. —Rubtsov, 1963. Zashch. Rast. Vred. Boleznei 8 (10): 58. —Bartlett, 1964. Ent. Soc. Amer., Ann. 57 (3): 344. —Bartlett and Ball, 1964. Ent. Soc. Amer., Ann. 57 (4): 496-503. —Gogua, 1965. Zashch. Rast. Vred. Boleznei 19 (1): 47. —Huffaker, 1971. Biol. Control, p. 463. —Sorokina, 1973. Ent. Rev. 52 (3): 396-397.
- fuscicornis** (Howard). Md., Minn. Host: *Toumeyella parvicornis* (Ckll.).
Encyrtus fuscicornis Howard, 1885. U. S. Dept. Agr., Div. Ent., Bul. 5: 13, 42. ♀.
- interpunctus** (Dalman). Europe, Greenland, No. Amer.?
Encyrtus interpunctus Dalman, 1820. Svenska Vetensk. Akad., Handl. 41: 157-158. ♀.
- luchni** (Ashmead). Fla. Host: *Cinara australi* (Ashm.).
Hemulotylus luchni Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 132. ♀.
- lunatus** (Dalman). Europe, No. Amer.?
Encyrtus lunatus Dalman, 1820. Svenska Vetensk. Akad., Handl. 41: 156. ♀.
- marginatus** Ashmead. N. Mex.
Microterys marginatus Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 292. ♀.
- marilandicus** (Girault). Md.
Sceptrophorus marilandicus Girault, 1917. Ent. News 28 (6): 256-257.
Sceptrophorus marylandicus Peck, 1951. U. S. Dept. Agr., Agr. Monog. 2: 483. Unjustified emend.
- mazzinini** Girault. Calif. Host: *Physokermes insignicola* (Craw).
Microterys mazzinini Girault, 1917. Descr. Stellarum Nov., pp. 12, 13. ♂, ♀.
- montinus** (Packard). N. H. Host: *Lecanium* sp.?
Encyrtus Montinus Packard, 1874. In Hitchcock and Huntington, Geol. of N. H., v. 1, p. 347. ♀.
- Taxonomy: Howard, 1888. Ent. Soc. Wash., Proc. 1 (2): 91-92.
- physokermis** Compere. Calif. Host: *Physokermes insignicola* (Craw).
Microterys physokermis Compere, 1926. Calif. Univ., Pubs. Ent. 4 (1): 43-44. ♀.
- speciosissimus** Girault. Ill. Host: *Kermes pubescens* Bogue.
Microterys speciosissimus Girault, 1911. Canad. Ent. 43 (5): 175. ♀.
- sublestus** (Howard). Conn., Fla. Host: *Lecanium* sp.? on *Pinus palustris*, L. sp.
Encyrtus sublestus Howard, 1885. U. S. Dept. Agr., Bur. Ent., Bul. 5: 12-13, 42. ♂.
- sylvius** (Dalman). Europe, No. Amer.?
Encyrtus sylvius Dalman, 1820. Svenska Vetensk. Akad., Handl. 41: 154. ♀.
- Taxonomy: Mercet, 1921. Fauna Iberica, Himen., Encirtidos, pp. 394-397. ♂, ♀.
- tessellatus** (Dalman). Greenland, No. Amer.?
Encyrtus tessellatus Dalman, 1820. Svenska Vetensk. Akad., Handl. 41: 342-344. ♀.
- Taxonomy: Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 393. —Carpenter, 1938. Ann. and Mag. Nat. Hist. (11) 1 (5): 542. —Bakkendorf, 1965. Ent. Meddel. 30 (2): 151.
- titiani** Girault. Calif. Host: *Lecanium corni* Bouche.
Microterys titiani Girault, 1917. Descr. Stellarum Nov., p. 13. ♂, ♀.
- Biology: DeBach, 1939. Jour. Econ. Ent. 32 (5): 728-729.
- xanthopsis** Compere. Utah, Ariz., Calif. Host: *Lecanium corni* Bouche, *L. persicae* (F.).
Microterys xanthopsis Compere, 1926. Calif. Univ., Pubs. Ent. 4 (2): 39, 41-42. ♀.
- yolandae** Compere. Calif. Host: *Kermes cockerelli* Ehrh.
Microterys yolandae Compere, 1926. Calif. Univ., Pubs. Ent. 4 (2): 39-41. ♀.

Genus OOBIUS Trjapitzin

- Oobius* Trjapitzin, 1963. Mus. Nat. Pragae, Acta Ent. 35: 543, 544-545.
Type-species: *Tyndarichus rudneri* Nowicki. Orig. desig.

Oobius is a small genus, consisting of about five species, and is Holarctic and Ethiopian in distribution. These insects are parasites in the eggs of buprestid beetles. An undetermined species is found in Arizona and California. It has been taken from *Pinus muricata*, *Libocedrus decurrens*, and reared from *Melanophila californica* Van Dyke on *P. ponderosa*.

Genus OOENCYRTUS Ashmead

Ooencyrtus Ashmead 1900. U. S. Natl. Mus., Proc. 22: 338, 345, 381.

Type-species: *Encyrtus clisiocampae* Ashmead. Orig. desig.

Schedius Howard, 1910. U. S. Dept. Agr., Bur. Ent., Tech. Ser. 19 (1): 2-3.

Type-species: *Schedius kuvanae* Howard. Orig. desig.

Ooencyrtus is another cosmopolitan genus the size of which is difficult to determine. All species are egg parasites of other insects.

Taxonomy: Timberlake, 1923. Ent. Soc. Wash., Proc. 25 (3): 59. — Mercet, 1925. Eos 1 (3): 324-328. — Ferrière, 1931. Bul. Ent. Res. 22 (2): 281-286. — Hoffer, 1963. Mus. Nat. Pragae, Acta Ent. 35: 560-580. — Bakkendorf, 1965. Ent. Meddel. 30 (2): 158-159. — Trjapitzin, 1967. Akad. Nauk Zool. Inst., Trudy. 41: 198-202.

Biology: Chu, 1934. Chekiang Prov., China, Bur. Ent. Yearbook (Hangechow) 3: 169. — Sasamoto, 1939. Zool. Mag. (Tokyo) 51 (1): 24-33. — Phillips, 1941. Roy. Ent. Soc. London, Trans. 91 (5): 136-143. — Wolcott and Martorell, 1944. Puerto Rico Univ., Jour. Agr. 27 (2): 93. — Geyer, 1947. Ent. Soc. So. Afr., Jour. 10 (1): 100-102. — Anderson and Kaya, 1974. Ent. Soc. Amer., Ann. 67 (6): 845-849. — Kaya and Anderson, 1974. Environ. Ent. 3 (3): 659-663.

anabrivorus Gahan. Wyo. Host: *Anabrus simplex* Hald.

Ooencyrtus anabrivorus Gahan, 1942. U. S. Natl. Mus., Proc. 92: 49-51. ♂, ♀.

anasae (Ashmead). N. C., Fla., La., Kans. Host: *Solubea pugnax* (F.), *Anasa tristis* (Deg.).

Encyrtus anasae Ashmead, 1887. U. S. Dept. Agr., Div. Ent., Bul. 14: 23-24. ♀.

Biology: Ingram, 1927. U. S. Dept. Agr., Farmers' Bul. 1543: 4. — Douglas and Ingram, 1942. U. S. Dept. Agr., Cir. 632: 6.

californicus Girault. Calif. Host: *Anasa tristis* (Deg.).

Oenocirtus californicus Girault, 1917. Descr. Stellarum Nov. p. 22. ♀. Generic name a lapsus for *Ooencyrtus*.

Biology: Maple, 1947. Calif. Univ., Pubs., Ent. 8 (2): 104-105.

chrysopae Crawford. Fla. Host: *Chrysopid*.

Ooencyrtus chrysopae Crawford, 1913. U. S. Natl. Mus., Proc. 46: 347. ♀.

clisiocampae (Ashmead). Cosmopolitan. Host: *Malacosoma americanum* (F.), *M. dissidia* Hbn., *M. fragile* (Str.).

Encyrtus clisiocampae Ashmead, 1893. Ohio Agr. Expt. Sta., Tech. Ser., Bul. 1: 163. ♀.

Biology: Hodson, 1939. Ent. Soc. Amer., Ann. 32 (1): 131-136. — Kaya and Anderson, 1972. Environ. Ent. 1 (4): 523-524. — Anderson and Kaya, 1973. Environ. Ent. 2 (4): 705-711.

johnsoni (Howard). Md., Va., N. C., Fla., Tex., Calif. Host: *Arilus cristatus* (L.), *Chlorochroa sayi* Stal, *Murgantia histrionica* (Hahn), coccinellid eggs.

Encyrtus Johnsoni Howard, 1898. Canad. Ent. 30: 18. ♂, ♀.

Biology: Drake, 1920. Fla. State Plant Bd., Quart. Bul. 1: 81. — Essig, 1922. Jour. Ent. and Zool. 14 (4): 76. — White and Brannon, 1933. U. S. Dept. Agr., Farmers' Bul. 1712: 5.

— Maple, 1937. Ent. Soc. Amer., Ann. 30 (1): 123-154. — Huffaker, 1941. Jour. Econ. Ent. 34 (1): 117-118. — DeBach, 1942. Jour. Econ. Ent. 35 (5): 787. — Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 105-107.

kuvanae (Howard). New England. Host: *Nygmia phaeorrhoea* (Donov.), *Porthetria dispar* (L.), *Stilpnotia salicis* (L.), *Apanteles melanoscelus* (Ratz.).

Schedius kuvanae Howard, 1910. U. S. Dept. Agr., Bur. Ent., Tech. Bul. 19 (1): 3-5. ♂, ♀.

Ooencyrtus kuvanae Peck, 1951. In Muesebeck et al., U. S. Dept. Agr., Agr. Monog. 2: 496. Unjustified emend.

- Biology: Howard and Fiske, 1911. U. S. Dept. Agr., Bur. Ent., Bul. 91: 86, 176-188, 307.
 —Crossman, 1925. Jour. Agr. Res. 30: 643-675. —Muesebeck and Dohanian, 1927. U. S. Dept. Agr., Bul. 1487: 25. —Burgess and Crossman, 1929. U. S. Dept. Agr., Tech. Bul. 86: 31-38. —Parker, 1933. Jour. Agr. Res. 46: 23-34. —Lloyd, 1935. Nature 135 (3412): 472-473.
 —Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 107-109. —Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139: 116-118. —Templado, 1957. Inst. Biol. Barcelona, Apl. Pubs. 25: 119.
 —Hitchcock, 1959. Jour. Econ. Ent. 52 (4): 764-765. —Tadic *et al.*, 1959. Zast. Bilja 52-53: 47-52. —Dowden, 1961. Jour. Econ. Ent. 54 (5): 876. —Bjegovic, 1963. Zast. Bilja 14 (75): 544. —Weseloh, 1971. Ent. Soc. Amer., Ann. 64 (5): 1050-1057.

monilemae Gahan. Tex. Host: *Moneilema crassa* Lec.

Ooencyrtus monilemae Gahan, 1925. Ent. Soc. Wash., Proc. 27 (8): 167-168. ♂, ♀.

Genus PLATENCYRTUS Ferriere

Platencyrtus Ferriere, 1955. Soc. Ent. de France, Bul. 60 (1-2): 11-12.

Type-species: *Platencyrtus parkeri* Ferriere. Orig. desig.

Platencyrtus Erdos and Novicky, 1955. Beitr. zur Ent. 5 (1-2): 197.

Type-species: *Platencyrtus esuriens* Erdos and Novicky. Orig. desig.

Interestingly, both Ferriere and Erdos and Novicky selected the same generic name for identical species. Ferriere's publication date precedes that of Erdos and Novicky and therefore has priority. This monotypic genus parasitizes mealybugs on *Phragmites*.

parkeri Ferriere. N. Y.

Platencyrtus parkeri Ferriere, 1955 (Jan.). Soc. Ent. de France, Bul. 60 (1): 11-12. ♂, ♀.

Platencyrtus esuriens Erdos and Novicky, 1955 (June). Beitr. zur Ent. 5: 197, ♂, ♀.

Genus PSEUDENCYRTUS Ashmead

Pseudencyrtus Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 340, 346, 396.

Type-species: *Encyrtus cecidomyiae* Howard. Orig. desig.

A small genus consisting of approximately nine species, *Pseudencyrtus* is Holarctic in distribution and parasitizes Diptera.

Taxonomy: Erdos, 1957. Acta. Zool. (Budapest). 3 (1-2): 39. —Graham, 1958. Ent. Tidskr. 79 (3-4): 158. —Bakkendorf, 1965. Ent. Meddel. 30 (2): 162-163. —Graham, 1969. Polskie Pismo Ent. 39 (2): 250-252.

bolus (Walker). Ont.

Encyrtus Bolus Walker, 1844. Ann. and Mag. Nat. Hist. (1) 14: 17. ♀.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 147-148.

cecidomyiae (Howard). Que., Ont. s. to Fla., w. to Mich. Host: *Mayetiola rigidae* (O. S.), *Rhabdophaga strobiloides* (O. S.).

Encyrtus cecidomyiae Howard, 1885. U. S. Dept. Agr., Bur. Ent., Bul. 5: 16, 32, 42. ♂, ♀.

Taxonomy: Girault, 1916. Ent. News 27 (9): 402.

pleuralis (Ashmead). Ohio. Host: *Atomaria* sp.(?).

Encyrtus pleuralis Ashmead, 1893. Ohio Agr. Expt. Sta., Tech. Ser., Bul. 1: 163. ♀.

Genus PSEUDENCYRTOIDES Gordh and Trjapitzin

Pseudencyrtoides Gordh and Trjapitzin, 1975. Ent. Rev. 54 (4): 872-873.

Type-species: *Pseudencyrtoides cupressi* Gordh and Trjapitzin. Orig. desig.

cupressi Gordh and Trjapitzin. Calif. Host: Cecidomiid galls on *Cupressus*.

Pseudencyrtoides cupressi Gordh and Trjapitzin, 1975. Ent. Rev. 54 (4): 873-875. ♀, ♂.

Genus SYRPHOPHAGUS Ashmead

Syrphophagus Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 340, 346, 397.

Type-species: *Encyrtus mesograptae* Ashmead. Orig. desig. The type-species is considered to be a synonym *Pteromalus quadrimaculatus* Ashmead.

Syrphophagus is a cosmopolitan genus of fly parasites and is related to *Pseudencyrtus*. About 25 species are recognized.

Taxonomy: Graham, 1958. Ent. Tidskr. 79 (3-4): 160. — Agarwal, 1962. Indian Jour. Ent. 24 (4): 244-251. — Hoffer, 1965. Mus. Nat. Pragae, Acta Ent. 36: 364-369. — De Santis, 1966. Com. Inv. Cient. Prov. Buenos Aires, Notas 3 (9): 7-8. — Erdos, 1957. Acta. Zool. (Budapest) 3 (1-2): 37-39. — Yasumatsu, 1963. Mushi 37 (10): 124. — Ghesquiere, 1956. Lab. Zool. Gen. Agr. Fac. Agr. Portici, Bol. 33: 701.

quadrinaculatus (Ashmead). S. C. s. to Fla., w. to La. Host: *Syrphus ribesii* (L.), *Roxomerus polita* (Say).

Pteromalus 4-maculatae Ashmead, 1881. Canad. Ent. 13 (8): 171-172. ♂, ♀.

Encyrtus mesograptae Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 232. ♀.

Taxonomy: Girault, 1916. Canad. Ent. 48 (10): 344.

smithi Kamal. Calif. Host: *Syrphus nitens* Zett., *S. opinator* O. S.

Syrphophagus smithi Kamal, 1926. Canad. Ent. 58 (12): 284. ♀.

Biology: Kamal, 1939. Egypt Min. Agr., Tech. and Sci. Serv., Ent. Sect., Bul. 207: 34, 46, 48.

Genus TACHINAEPHAGUS Ashmead

Tachinaephagus Ashmead, 1904. Carnegie Mus., Mem. 1 (4): 304.

Type-species: *Tachinaephagus zealandicus* Ashmead. Orig. desig.

Australencyrtus Johnson and Tiegs, 1921. Roy. Soc. Queensland, Proc. 33 (6): 118-123.

Type-species: *Australencyrtus giraulti* Johnson and Tiegs. Orig. desig.

Tachinaephagus Girault, 1917. Insecutor Inscitiae Menstruus 5 (7-9): 142.

Type-species: *Tachinaephagus australiensis* Girault. Orig. desig.

Stenoterys Dodd, 1921. In Froggatt, Agric. Gaz. N. S. Wales 32 (10): 728. Unjustified emend. of *Stenoterys* Thomson.

Australomalotylus Risbec, 1956. Ann. Parasit. Hum. Comp. 30 (1-2): 169.

Type-species: *Australomalotylus Rageai* Risbec. Monotypic.

Tachinaephagus is cosmopolitan in distribution and contains fewer than five species. Apparently all species are parasites of fly pupae.

Taxonomy: Girault, 1924. Homo Perniciosus and New Hymenoptera p. 4. — Ghesquiere, 1960. Rev. Zool. Bot. Africaines 62 (1-2): 53-58.

Biology: Hardy, 1924. Queensland Agr. Jour. 22 (5): 349-350.

zealandicus Ashmead. Calif. No. Car. Adventive. Host: Diptera pupae.

Tachinaephagus zealandicus Ashmead, 1904. Carnegie Mus., Mem. 1 (4): 304 ♀.

Tachinaephagus australiensis Girault, 1917. Insecutor Inscitiae Menstruus 5 (7-9): 142-143.

Stenoterys fulvoventralis Dodd, 1921. Agr. Gaz. N. S. Wales 32 (10): 730-731.

Australencyrtus giraulti Johnson and Tiegs, 1921. Roy. Soc. Queensland, Proc. 33 (6): 118-123.

Australomalotylus rageai Risbec, 1956. Ann. Parasitol. Hum. Comp. 30 (1-2): 170-173.

Taxonomy: Gahan, 1938. Ent. Soc. Wash., Proc. 40 (8): 210-211. — Ghesquiere, 1960. Rev. Zool. Bot. Africaines 62 (1-2): 55-56. — Timberlake, 1941. B. P. Bishop Mus., Occas. Papers 16 (9): 216, 226-227.

Biology: Johnson and Tiegs, 1921. Roy. Soc. Queensland, Proc. 33 (6): 107-110, 117.

Genus TRICHOMASTHUS Thomson

Trichomasthus Thomson, 1876 (1875). Hym. Scand., v. 4, pp. 117, 142-143.

Type-species: *Encyrtus cyaneus* Dalman. Desig. by Gahan and Fagan, 1923.

Coccidozenus Crawford, 1913. U. S. Natl. Mus., Proc. 45: 248.

Type-species: *Coccidozenus portoricensis* Crawford. Orig. desig.

Stenoteropsis Girault, 1915. Queensland Mus., Mem. 4: 176, 181.

Type-species: *Stenoteropsis abjectus* Girault. Orig. desig.

Tetracnemella Girault, 1915. Queensland Mus., Mem. 4: 170, 182.

Type-species: *Tetracnemella australiensis* Girault. Orig. desig.

Trichomasthus is a cosmopolitan genus containing over forty described species, most of which are apparently parasites of soft-scale insects.

- Taxonomy: Trjapitzin, 1964. Zool. Zhur. 43 (10): 1457-1462. — Alam, 1957. Roy. Ent. Soc. London, Trans. 109 (15): 446-450. — Annecke, 1964. Ent. Soc. So. Afr., Jour. 26 (2): 390-410. — Trjapitzin, 1968. Ent. Rev. 47 (1): 125. — Graham, 1969. Polskie Pismo Ent. 39 (2): 267-269. — Girault, 1924. Homo Perniciosus and New Hymenoptera, p. 10. — Compere, 1937. Bul. Ent. Res. 28 (1): 44-45. — Risbec, 1952. Mem. Inst. Sci. Madagascar Ser. E., Ent. 2: 30-35. — Robinson, 1960. Ent. Soc. So. Afr., Jour. 23 (2): 371-374. (as *Coccidoxenus*).
- albimanus** Thomson. N. H., Minn., Kans. Host: *Eriopeltis festucae* (Fonsc.).
Trichomasthus albimanus Thomson, 1876 (1875). Hym. Scand., v. 4, 144.
- Taxonomy: Masi, 1926. Soc. Ent. Ital., Bol. 58 (9-10): 162. — Rubtzov, 1954. Vses. Ent. Obsheh., Trudy 44: 217.
- Biology: Tshumakova, 1961. Ent. Rev. 40 (2): 177. — Zag-Ozaga, 1961. Polskie Pismo Ent. 31 (2): 362, 367. — Sugonyayev, 1962. Akad. Nauk SSSR Izv., Ser. Biol. 5: 760.
- cyanifrons** (Dalman). N. H., Va., Calif. Host: *Lecanium corni* Bouche.
Eucyrtus cyanifrons Dalman, 1820. Svenska Vetensk. Akad., Handl. 41: 159.
- Taxonomy: Mercet, 1923. Soc. Espan. de Hist. Nat., Bol. 23 (1): 49-50. — Alam, 1957. Roy. Ent. Soc. London, Trans. 109 (15): 447.
- Biology: Flanders, 1952. Jour. Econ. Ent. 45 (6): 1078. — Zag-Ozaga, 1961. Polskie Pismo Ent. 31 (2): 362. — Sugonyayev, 1962. Akad. Nauk SSSR Izv., Ser. Biol. 5: 754-766.
- mexicanus** (Girault). Fla. w. to Ariz.
Coccidoxenus mexicanus Girault, 1917. Descr. Stellarum Nov. p. 21. ♀.
- niloticus** Compere. Calif. Released, possibly established. Host: *Saissetia oleae* (Oliv.).
Coccidoxenus niloticus Compere, 1940. Hilgardia 13 (7): 395, 405-407. ♂, ♀.
- nubilipennis** (Girault). Va. w. to Ill.
Anagyrus nubilipennis Girault, 1909. Psyche 16 (4): 76-77. ♂, ♀.

TRIBE MIRAINI

Genus BAEOCHARIS Mayr

- Baeocharis* Mayr, 1876 (1875). Zool.-Bot. Gesell. Wien, Verhandl. 25: 767-768.
Type-species: *Baeocharis pascuorum* Mayr. Monotypic.
- Sphaeropisthus* Thomson, 1876 (1875). Hym. Scand., v. 4, pp. 116, 131-132.
Type-species: *Sphaeropisthus pascuorum* Thomson. Monotypic. The type-species may be a junior synonym of *Baeocharis pascuorum* Mayr, but see Ferriere (1955).
- This genus consists of three Holarctic species that are parasites of scale insects.
- Taxonomy: Ruschka, 1912. Zool.-Bot. Gesell. Wien, Verhandl. 62 (7): 240. — Ferriere, 1955. Ent. Schweiz. Gesell., Mitt. 26 (1): 7.
- annulicornis** (Ashmead). Fla.
Sphaeropisthus annulicornis Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 369. ♂.
- auriceps** (Ashmead). Fla.
Sphaeropisthus auriceps Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 369-370. ♀.
- pascuorum** Mayr. N. H. Host: *Eriopeltis festucae* (Fonsc.).
Baeocharis pascuorum Mayr, 1876 (1875). Zool.-Bot. Gesell. Wien, Verhandl. 25: 768. ♂, ♀.
Eucyrtus flavoscutatus Six, 1876. Tijdschr. Ent. 19: 135.
- Taxonomy: Trjapitzin, 1968. Vses. Ent. Obsheh., Trudy 52: 51.

Genus MAYRIDIA Mercet

- Mayridia* Mercet, 1921. Fauna Iberica, Himen., Encirtidos, pp. 426-427.
Type-species: *Mayridia pulchra* Mercet. Orig. desig.

This is a Holarctic genus containing 13 species. Host records for this genus are incomplete, but at least two species have been associated with *Aclerda* and *Trionymus*. These host genera belong to different coccoid families and are associated with grasses.

Taxonomy: Mercet, 1921. Fauna Iberica, Himen., Encirtidos pp. 426-436. — Erdos, 1957. Acta Zool. (Budapest). 3 (1-2): 47, 48-54. — Bakkendorf, 1965. Ent. Meddel. 30 (2): 138-139. — Trjapitzin, 1967. Akad. Nauk SSSR Zool. Inst., Trudy 41: 205-206. — Graham, 1969. Polskie Pismo Ent. 39 (2): 272-273.

americana Timberlake. N. Dak., S. Dak., Utah. Host: *Trionymus utahensis* (Ckll.).

Mayridia americana Timberlake, 1926. U. S. Natl. Mus., Proc. 69 (2629): 28-33. ♂, ♀.

ferrierei Burks. N. J. Host: *Aclerda xalapenseae* McCon. on *Panicum xalapense*.

Mayridia ferrierei Burks, 1964. Entomophaga 9 (1): 17-18. ♂, ♀.

Genus MIRA Schellenberg

Mira Schellenberg, 1803. Genres de Mouches Dipteres, p. 68.

Type-species: *Mira macrocera* Schellenberg. Monotypic.

Dicelloceras Menzel, 1855. Stettin. Ent. Ztg. 17: 270.

Type-species: *Dicelloceras vibrans* Menzel. Monotypic.

Euryscapus Foerster, 1856. Hym. Stud., v. 2, pp. 32, 35.

Type-species: *Encyrtus platycerus* Dalman. Orig. desig.

Lonchoceras Dahlbom, 1857. Ofvers. K. Vetensk. Akad., Forh. 14 (8): 292.

Type-species: *Encyrtus platycerus* Dalman. Subsequent monotypy (Thomson, 1876 (1875)).

Enzkadia Mercet, 1921. Fauna Iberica, Himen., Encirtidos, pp. 14, 28, 45, 48, 59, 71, 81, 552-553.

Type-species: *Enzkadia integralis* Mercet. Orig. desig.

Mira is a small genus and is Holarctic in distribution.

Taxonomy: Mercet, 1921. Fauna Iberica, Himen., Encirtidos, pp. 181-183. — Mercet, 1922. Soc. Espan. de Hist. Nat., Bol. 22 (5): 264-267. — Erdos, 1957. Acta Zool. (Budapest). 3 (1-2): 24-25.

macrocera Schellenberg. Idaho.

Mira macrocera Schellenberg, 1803. Genres de Mouches Dipteres, pp. 68-69.

TRIBE NEOCLADINI

Genus CARABUNIA Waterston

Carabunia Waterston, 1928. Bul. Ent. Res. 19 (3): 249.

Type-species: *Carabunia myersi* Waterston. Orig. desig.

Carabunia is a monotypic genus found in the neotropics. It has been employed in biological control of the spittle bug *Clastoptera undulata* Uhler.

Biology: Myers, 1930. Bul. Ent. Res. 21 (3): 341-351. — Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 70. — Dustan, 1960. Burmuda Dept. Agr., Bul. 33: 1-11.

myersi Waterston. Fla. Host: *Clastoptera undulata* Uhler.

Carabunia myersi Waterston, 1928. Bul. Ent. Res. 19 (3): 249-251. ♂, ♀.

Biology: Bennett and Hughes, 1963. Entomophaga 8 (1): 49-66.

Genus ZARHOPALUS Ashmead

Zarhopalus Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 342, 406.

Type-species: *Zarhopalus sheldoni* Ashmead. Orig. desig.

Anagyrella Girault, 1915. N. Y. Ent. Soc., Jour. 23 (3): 168-169.

Type-species: *Anagyrella corvina* Girault. Monotypic.

A genus consisting of six species, *Zarhopalus* is Nearctic and Ethiopian in distribution. One species has been described from the Caribbean. These insects are mealybug parasites.

- Taxonomy: Timberlake, 1924. Calif. Univ., Pubs. Ent. 3 (2): 235-236. —Joubert, 1943. Union So. Africa, Dept. Agr. Forestry, Bul. 243, p. 4. —Bennett, 1957. Canad. Ent. 89 (12): 571-572.
- corvinus** (Girault). Que., Calif. Host: *Pseudococcus maritimus* (Ehrh.), *P. sp.*
Anagyrella corvina Girault, 1915. N. Y. Ent. Soc., Jour. 23 (3): 169. ♀.
- Biology: Clausen, 1924. Calif. Univ., Pubs. Ent. 3 (2): 256-271. —Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 55, 115.
- inquisitor** (Howard). Md. s. to Fla., w. to Ariz. Host: *Planococcus citri* (Risso).
Encyrtus inquisitor Howard, 1881. U. S. Dept. Agr., Ann. Rept. for 1880, p. 367. ♀.
- sheldoni** Ashmead. N. Y., Calif. Host: *Pseudococcus maritimus* (Ehrh.).
Zarhopalus sheldoni Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 406. ♀.
- Biology: Clausen, 1924. Calif. Univ., Pubs. Ent. 3 (2): 257-265. —Clancy and Pollard, 1947. Jour. Econ. Ent. 40 (4): 578-579.

TRIBE PRIONOMASTICINI

Genus HEXACLADIA Ashmead

- Hexacladia* Ashmead, 1891. U. S. Dept. Agr., Insect Life 3 (11-12): 456.
Type-species: *Hexacladia smithii* Ashmead. Desig. by Ashmead, 1900.
Sopheucyrtus Crawford, 1911. U. S. Natl. Mus., Proc. 41: 275-276.
Type-species: *Sopheucyrtus townsendi* Crawford. Orig. desig.
- Hexacladia* is a New World genus composed of six species. They are parasites of true bugs of the families Coreidae, Pyrrhocoridae and Pentatomidae.
- Taxonomy: Howard, 1892. U. S. Natl. Mus., Proc. 15: 364-366. —Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 337, 377. —Timberlake, 1926. U. S. Natl. Mus., Proc. 96 (3): 12. —De Santis, 1965. Com. Inv. Cien. Prov. Buenos Aires, An. 4: 114. —Burks, 1972. Ent. Soc. Wash., Proc. 74 (4): 363-371.
- hilaris** Burks. Ohio w. to Kans. Host: *Acrosternum hilare* (Say).
Hexacladia hilaris Burks, 1972. Ent. Soc. Wash., Proc. 74 (4): 363, 367-368. ♂, ♀.
- smithi** Ashmead. Fla. Host: *Euschistus crenator* (F.).
Hexacladia smithi Ashmead, 1891. U. S. Dept. Agr., Insect Life 3 (11-12): 455, 457. ♂, ♀.

TRIBE PSEUDORHOPINI

Genus PSEUDORHOPUS Timberlake

- Pseudorhopus* Timberlake, 1926. U. S. Natl. Mus., Proc. 69 (3): 9.
Type-species: *Encyrtus testaceus* Ratzeburg. Orig. desig.
- Apparently some authors have confused this genus with *Rhopus*. *Pseudorhopus* is Holarctic and contains four species. They parasitize *Physokermes*, but also have been reported attacking *Lecanium*, *Lepidosaphes*, and other armored scale insect genera.
- Taxonomy: Ghesquiere, 1956. Lab. Zool. Gen. Agr. Fac. Agr. Portici, Bol. 33: 686. —Alam, 1957. Roy. Ent. Soc. London, Trans. 109 (15): 423, 459-462. —Hoffer, 1960. Mus. Nat. Pragae, Acta Faun. Ent. 6: 94.
- Biology: Zak-Ogaza, 1961. Polskie Pismo Ent. 31 (2): 357. —Sugonyayev, 1962. Akad. Nauk. SSSR Izv., Ser. Biol. 5: 754-766. —Schmutterer, 1965. Ztschr. f. Angew. Ent. 56 (4): 305.
- fuscus** (Girault). Que., Ont. The host is apparently a coccid, not *Choristoneura fumifera* (Clem.) as previously recorded.
Rhopoideus fuscus Girault, 1912. Canad. Ent. 44 (1): 5-8. ♀.
- Biology: Girault, 1920. U. S. Natl. Mus., Proc. 58: 184.
- hartmani** Timberlake. Tex. Host: *Lecanium* sp.
Pseudorhopus hartmani Timberlake, 1926. U. S. Natl. Mus., Proc. 69 (3): 10-12. ♂, ♀.
- Taxonomy: Alam, 1957. Roy. Ent. Soc. London, Trans. 109 (15): 460.

TRIBE PSILOPHRYDINI

Genus PSILOPHRYS Mayr

Psilophrys Mayr, 1876 (1875). Zool.-Bot. Gesell. Wien, Verhandl. 25: 727.

Type-species: *Encyrtus longicornis* Walker. Monotypic.

Psilophrys is another small, Holarctic genus composed of three or four species. One species has been reported attacking *Kermes*. Material in the U. S. National Museum Collection indicates that *armata* may parasitize *Aroga*.

Taxonomy: Trjapitzin, 1968. Vses. Ent. Obsch., Trudy 52: 69. —Graham, 1969. Polskie Pismo Ent. 39 (2): 235.

armata Ashmead, N. J., Fla. Host: *Aroga triablamaculella* (Chambers).

Psilophrys armatus Ashmead, 1888. Ent. Amer. 4 (1): 16. ♂, ♀.

TRIBE THOMSONISCINI

Genus QUAYLEA Timberlake

Quaylea Timberlake, 1919. Hawaii. Ent. Soc., Proc. 4 (1): 214-216.

Type-species: *Cerchysius whittieri* Girault. Orig. desig.

This is a monotypic genus from Australia. *Quaylea whittieri* was introduced along with other parasites of the Black scale complex in the belief that it was a primary parasite. It is actually a hyperparasite, as suspected by foreign-explorer George Compere.

whittieri (Girault). Calif. Introduced. Host: *Saissetia oleae* (Oliv.), *Aphycus lounsburyi* How.,

Scutellista cyanea Mots., *Tomocera californica* How.

Cerchysius whittieri Girault, 1918. Ent. News 29 (2): 66. ♀.

Hemencyrtus crawii Timberlake, 1919. Hawaii. Ent. Soc., Proc. 4 (1): 216.

Quaylea aliena Timberlake, 1919. Hawaii. Ent. Soc., Proc. 4 (1): 216-218. ♂, ♀.

Taxonomy: Girault, 1918. Ent. News 29 (2): 65-66. —Timberlake, 1922. Hawaii. Ent. Soc., Proc. 5 (1): 166-167. —Timberlake, 1924. Hawaii. Ent. Soc., Proc. 5 (3): 430. —Smith and Compere, 1928. Calif. Univ. Pubs., Ent. 4 (9): 292-295.

Biology: Flanders, 1943. Jour. Econ. Ent. 36 (6): 922-925. —Flanders, 1944. Ent. Soc. Amer., Ann. 37 (3): 365.

Taxonomy: Maple, 1947. Calif. Univ., Pubs. Ent. 8 (2): 74, 76.

Biology: Woglum *et al.*, 1947. Jour. Econ. Ent. 40 (6): 820. —Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139, pp. 125-126.

TRIBE TRECHNITINI

Genus PRIONOMITUS Mayr

Prionomitus Mayr, 1876 (1875). Zool.-Bot. Gesell. Wien, Verhandl. 25: 701.

Type-species: *Encyrtus chlorinus* Dalman. Monotypic. The type-species is considered a synonym of *Encyrtus mitratus* Dalman.

Prionomitus is Holarctic in distribution and contains about six species. All the species are probably parasites of psyllids.

Taxonomy: Brethes, 1914. Ann. Zool. Aplic. Chile 1: 29-30. —Masi, 1919. Genova Mus. Civ.

Stor Nat., Ann. Ser. 3, 8 (48): 154-155. —Mercet, 1926. Eos 2 (4): 313-315. —Ferriere, 1961.

Entomophaga 6 (1): 41-42. —Erdos, 1963. Beitr. zur Ent. 13 (3-4): 285. —Hoffer, 1963. Mus.

Nat. Pragae, Acta Ent. 35: 553-556. —Graham, 1969. Polskie Pismo Ent. 39 (2): 245-246.

Biology: Ferriere, 1926. Soc. Ent. de France, Ann. 95 (2): 189-192.

mitratus (Dalman). Wis., Utah, B. C. s. to Calif. Host: Psyllid nymphs.

Encyrtus mitratus Dalman, 1820. Svenska Vetensk. Akad., Handl. 41: 352. ♀.

Encyrtus chlorinus Dalman, 1820. Svenska Vetensk. Akad., Handl. 41: 352. ♂.

Encyrtus conferae Walker, 1837. Ent. Mag. 4: 461. ♂, ♀.

Biology: Jensen, 1957. *Hilgardia* 27 (2): 71-99. — Ferriere, 1926. *Soc. Ent. de France, Ann.* 95 (2): 189-193. — Lal, 1934. *Parasitology* 26 (3): 327-328. — Bonnemaison and Missonier, 1956. *Ann. Epiphyt., Ser. C* 7 (2): 310-314. — McMullen, 1964. *Wash. State Hort. Assoc., Proc.* 60, p. 81. — Harizanov, 1966. *Priroda (Sofia)* 15 (3): 68-69. — McMullen, 1966. *Canad. Ent.* 98 (3): 236-237.

tiliariis (Dalman). No. Amer.(?).

Encyrtus tiliariis Dalman, 1820. *Svenska Vetensk. Akad., Handl.* 41: 171.

Encyrtus subcupratus Walker, 1837. *Ent. Mag.* 4: 460. ♂, ♀.

Encyrtus subcupratus var. *E.* Walker, 1837. *Ent. Mag.* 4: 461.

Taxonomy: Masi, 1919. *Genova Mus. Civ. Stor. Nat., Ann. Ser.* 38 (48): 154-155. — Ferriere, 1961. *Entomophaga* 6 (1): 42.

Genus PSYLLAEPHAGUS Ashmead

Psyllaephagus Ashmead, 1900. *U. S. Natl. Mus., Proc.* 22: 339, 345, 382.

Type-species: *Encyrtus pachypsyllae* Howard. Orig. desig.

Metaprimonitus Mercet, 1921. *Fauna Iberica, Himen., Encirtidos*, pp. 27, 58, 70, 81, 260-261.

Type-species: *Metaprimonitus intermedius* Mercet. Orig. desig.

Shakespeareia Girault, 1928. *Some New Hexapods Stolen from Authority*, p. 3 (priv. publ.).

Type-species: *Shakespeareia flabellata* Girault. Monotypic.

Calluniphilus Erdos, 1961. *Acta. Zool. (Budapest)* 7 (3-4): 413-414.

Type-species: *Calluniphilus vendicus* Erdos. Orig. desig.

Mercetia Bakkendorf, 1965. *Ent. Meddel.* 30 (2): 139-140.

Type-species: *Copidosoma lusitanica* Mercet. Orig. desig.

Psyllaephagus is a genus with over 100 described species. It is probably cosmopolitan, but has not been reported from the Neotropical Region. As the name implies, species of *Psyllaephagus* are parasites of psyllids. However, some species apparently are hyperparasites of other species of *Psyllaephagus*.

Taxonomy: Ashmead, 1902. *Canad. Ent.* 34 (11): 302. — Waterston, 1922. *Bul. Ent. Res.* 13 (1): 42-47. — Ferriere, 1926. *Soc. Ent. France, Ann.* 95 (2): 191-192. — Gahan and Waterston, 1926. *Bul. Ent. Res.* 16 (4): 373-375. — Mercet, 1926. *Eos* 2 (4): 313-315. — Alam, 1957. *Roy. Ent. Soc. London, Trans.* 109 (15): 423, 456-459. — Ferriere, 1961. *Entomophaga* 6 (1): 42-48. — Riek, 1962. *Austral. Jour. Zool.* 10 (4): 684-757. — Trjapitzin, 1967. *Akad. Nauk SSSR Zool. Inst., Trudy* 41: 190-194. — Trjapitzin, 1968. *Vses. Ent. Obsheh., Trudy* 52: 54. — Graham, 1969. *Polskie Pismo Ent.* 39 (2): 248-249.

arbuticola Gahan and Waterston. Calif. Host: *Euphyllura arbuti* Schwarz.

Psyllaephagus arbuticola Gahan and Waterston, 1926. *Bul. Ent. Res.* 16 (4): 373-375. ♂, ♀.

pachypsyllae (Howard). Md. s. to N. C., w. to Kans., Calif. Host: *Pachypsylla celtidisgemma* Riley, *P. venusta* (O. S.), *Trioza beameri* Tuthill.

Encyrtus pachypsyllae Howard, 1885. *U. S. Dept. Agr., Bur. Ent., Bul.* 5: 15, 32, 42. ♂, ♀.

Biology: Jensen, 1957. *Hilgardia* 27: 79, 95. — Waterston, 1922. *Bul. Ent. Res.* 13 (1): 43.

— Appleby and Neiswander, 1962. *Ohio Agr. Expt. Sta., Res. Cir.* 111, pp. 13. — Moser, 1965. *N. Y. State Mus. Sci. Serv., Bul.* 402, p. 18.

trioziphagus (Howard). Md. s. to N. C., w. to Ohio, Calif. Host: *Trioza diospyri* (Ashm.), *Kuwayama medicaginis* (Cwfd.).

Encyrtus trioziphagus Howard, 1885. *U. S. Dept. Agr., Bur. Ent., Bul.* 5: 14, 32, 42. ♂, ♀.

Biology: Eddy, 1927. *Ohio Jour. Sci.* 27 (4): 196-197. — Cazier, 1964. *Pan-Pacific Ent.* 40 (2): 73.

vectius (Walker). Florida. Host: *Trioza magnoliae* (Ashm.).

Encyrtus Vectius Walker, 1847. *Ann. and Mag. Nat. Hist.* (1) 20: 21. ♂.

Encyrtus solus Howard, 1885. *U. S. Dept. Agr., Bur. Ent., Bul.* 5: 15, 32, 42. ♀.

Taxonomy: Gahan and Waterston, 1926. *Bul. Ent. Res.* 16 (4): 375. — Burks, 1975. *Brit. Mus. (Nat. Hist.) Ent., Bul.* 32 (4): 148-149.

Genus TRECHNITES Thomson

Trechnites Thomson, 1876 (1875). Hym. Scand. v. 4, pp. 118, 169-170.

Type-species: *Metallon fuscitarsis* Thomson. Monotypic.

Psylledontus Crawford, 1910. U. S. Natl. Mus., Proc. 38: 88-89.

Type-species: *Psylledontus insidiosus* Crawford. Orig. desig.

Metallonella Girault, 1915. Queensland Mus., Mem. 4: 77.

Type-species: *Metallonella australiensis* Girault. Orig. desig.

Metallon Thomson, 1876 (1875). In Thomson, Hym. Scand. v. 4., pp. 169-170. Lapsus for *Trechnites* Thomson.

Trechnites is a Holarctic genus consisting of nine described species. The North American representative of the genus has been recovered from pear psylla.

Taxonomy: Hoffer, 1960. Mus. Nat. Pragae, Acta Faun. Ent. 6: 109-114. — Ferriere, 1961.

Entomophaga 6 (1): 39-41. — Graham, 1969. Polskie Pismo Ent. 39 (2): 243-245.

insidiosus (Crawford). Oreg., Calif. Host: "pear psylla."

Psylledontus insidiosus Crawford, 1910. U. S. Natl. Mus., Proc. 38: 89. ♂, ♀.

Biology: Madsen *et al.*, 1963. Canad. Ent. 95 (8): 842-843. — McMullen, 1966. Canad. Ent. 98

(3): 236-239. — Westigard *et al.*, 1968. Jour. Econ. Ent. 61 (3): 740-743.

UNPLACED TAXA OF SUBFAMILY ENCYRTINAE

The following genera have not been placed in the tribal classification of the Encyrtinae.

Genus ATROPATES Howard

Atropates Howard, 1898. U. S. Natl. Mus., Proc. 21: 236.

Type-species: *Atropates collinsi* Howard. Monotypic.

A genus with only two described species, one from India and one from North America, *Atropates* parasitizes *Pulvinaria* and Lac insects.

Taxonomy: Ferriere, 1935. Bul. Ent. Res. 26 (3): 400-401. — Mani, 1938. Cat. Indian Ins., pt.

23, p. 95. — Mahdihassan, 1957. Ztschr. f. Angew. Ent. 40 (1): 80.

collinsi Howard. N. Y., Wash. Host: *Pulvinaria* sp.

Atropates collinsi Howard, 1898. U. S. Natl. Mus., Proc. 21: 236-237. ♂, ♀.

Genus APHYCOIDEUS Williams

Aphycoideus Williams, 1916. Psyche 23 (5): 153.

Type-species: *Aphycoideus io* Williams. Monotypic.

io Williams. Mass. Host: *Malacosoma americanum* (F.).

Aphycoideus io Williams, 1916. Psyche 23 (5): 153. ♀.

Aphycoideus io Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. V, p. 5.

Genus BLEPYRUS Howard

Blepyrus Howard, 1898. U. S. Natl. Mus., Proc. 21: 233-234.

Type-species: *Blepyrus mexicanus* Howard. Desig. by Ashmead, 1900.

Coccophoctonus Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 337, 344, 375.

Type-species: *Coccophoctonus dactylopii* Ashmead. Orig. desig. The type-species is considered a synonym of *Blepyrus mexicanus*.

Blepyrus contains five species which are mealybug parasites. Species in the genus are known from North America, Africa and the Pacific.

Taxonomy: Timberlake, 1922. Hawaii. Ent. Soc., Proc. 5 (1): 168-173. — Gahan, 1942. U. S.

Natl. Mus., Proc. 92: 47-49. — Kerrich, 1967. Brit. Mus. (Nat. Hist.) Ent., Bul. 29 (5): 225-226.

insularis (Cameron). Miss., Tex. Host: *Ferrisia virgata* (Ckll.).

Encyrtus(?) *insularis* Cameron, 1886. In Blackburn and Cameron, Manchester Lit. and Phil. Soc., Mem. and Proc. (3) 10: 243.

Blepyrus mexicanus Howard, 1898. U. S. Natl. Mus., Proc. 21: 234. ♂, ♀.

- Blepypyrus marsdeni* Howard, 1898. U. S. Natl. Mus., Proc. 21: 234-235. ♀.
Blepypyrus texanus Howard, 1898. U. S. Natl. Mus., Proc. 21: 235. ♀.
saccharicola Gahan. Fla., La. Host: *Pseudococcus* sp. on sugarcane.
Blepypyrus saccharicola Gahan, 1942. U. S. Natl. Mus., Proc. 92: 47-49. ♂, ♀.

Genus CERAPTROCEROIDEUS Girault

- Ceraptroceroideus* Girault, 1916. Psyche 23 (2): 47.
 Type-species: *Ceraptroceroideus cinctipes* Girault. Orig. desig.
 A monotypic genus known only from the type-locality.
cinctipes Girault. Kans. (Wellington). Host: *Rhizaspidiotus dearnessi* (Ckll.).
Ceraptroceroideus cinctipes Girault, 1916. Psyche 23 (2): 47-48. ♂, ♀.

Genus CHESTOMORPHA Ashmead

- Chestomorpha* Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 335, 343, 370.
 Type-species: *Chestomorpha biformis* Ashmead. Orig. desig.
biformis Ashmead. N. Mex., Ariz.
Chestomorpha biformis Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 370. ♀.

Genus EPAENASOMYIA Girault

- Epaenasomyia* Girault, 1917. Chalcidoidea Nova Marilandensis iii, p. 3.
 Type-species: *Epaenasomyia varicornis* Girault. Orig. desig.
varicornis Girault. Maryland.
Epaenasomyia varicornis Girault, 1917. Chalcidoidea Nova Marilandensis III. p. 3.

Genus FORCIPESTRICIS Burks

- Forcipestricis* Burks, 1968. Ent. News 79 (9): 237-238.
 Type-species: *Forcipestricis gazeaui* Burks. Orig. desig.
Forcipestris presently consists of two species, one from Puerto Rico and the other from Eastern North America. Both are larval-pupal parasites of ceratopogonid midges.
 Taxonomy: Gordh, 1975. Fla. Ent. 58 (4): 239-241.
gazeaui Burks. Md. Host: *Forcipomyia simulata* Walley.
Forcipestricis gazeaui Burks, 1968. Ent. News 79 (9): 238-240. ♂, ♀.

Genus GAHANIELLA Timberlake

- Gahaniella* Timberlake, 1926. U. S. Natl. Mus., Proc. 69: 23-26.
 Type-species: *Gahaniella californica* Timberlake. Orig. desig.
Gahaniella only has three species which are found in Australia, North and South America. All three are presumably hyperparasitic on other encyrtids that attack soft scale-insects and mealybugs.
 Taxonomy: Kerrich, 1953. Bul. Ent. Res. 44 (4): 800-802.
californica Timberlake. Calif. Host: *Lecanium corni* Bouche.
Gahaniella californica Timberlake, 1926. U. S. Natl. Mus., Proc. 69 (3): 26-27. ♂, ♀.
 Taxonomy: Kerrich, 1953. Bul. Ent. Res. 44 (4): 800-802.
saissetia Timberlake. Fla. Host: *Coccus hesperidum* L., *Saissetia oleae* (Oliv.).
Gahaniella saissetiae Timberlake, 1926. U. S. Natl. Mus., Proc. 69 (3): 27-28. ♂, ♀.
 Taxonomy: Compere, 1939. Calif. Univ., Pubs. Ent. 7 (5): 89.

Genus HEXACNEMUS Timberlake

- Hexacnemus* Timberlake, 1926. U. S. Natl. Mus., Proc. 69 (3): 12-15.
 Type-species: *Hexacnemus armitagei* Timberlake. Monotypic.

This monotypic genus has been found only in North America. The type-species has been reported to parasitize mealybugs as well as *Symphorobius*.

armitagei Timberlake. Fla., Calif. Host: *Symphorobius californicus* Banks, S. sp., mealybug on citrus.

Hexacnemus armitagei Timberlake, 1926. U. S. Natl. Mus., Proc. 69 (3): 15-16. ♂, ♀.

Genus CAENOCERCUS Thomson

Caenocercus Thomson, 1876 (1875). Hym. Scand., v. 4, p. 145.

Type-species: *Caenocercus puncticollis* Thomson. Monotypic.

Bothriencyrtus Timberlake, 1919 (1918). Hawaii. Ent. Soc., Proc. 4 (1): 185, 212-213.

Type-species: *Bothriothorax planifrons* Howard. Orig. desig. The type-species name is a lapsus for *Bothriothorax planiformis* Howard.

A small genus with a Holarctic distribution, *Caenocercus* probably parasitizes Neuroptera.

Taxonomy: Erdos, 1963. Beitr. zur Ent. 13 (3-4): 286-287.

planiformis (Howard). N. C., Miss., Wash., Calif. Host: Hemerobiid.

Bothriothorax planiformis Howard, 1895. U. S. Natl. Mus., Proc. 17: 611. ♀.

Genus EPICERCHYSIUS Girault

Epicerchysius Girault, 1915. N. Y. Ent. Soc., Jour. 23 (3): 167-168.

Type-species: *Epicerchysius xanthipes* Girault. Monotypic.

xanthipes Girault. Tex.

Epicerchysius xanthipes Girault, 1915. N. Y. Ent. Soc., Jour. 23 (3): 168. ♀.

Genus FORMICENCYRTUS Girault

Formicencyrtus Girault, 1916. Psyche 23 (2): 45.

Type-species: *Formicencyrtus thoreauini* Girault. Orig. desig.

thoreauini Girault. N. Mex., Ariz. Host: *Dactylopius confusus* (Ckll.).

Formicencyrtus thoreauini Girault, 1916. Psyche 23 (2): 45-46. ♀.

Genus EPANUSIA Girault

Epanusia Girault, 1913. Arch. f. Naturgesch. 79 (A) (6): 91.

Type-species: *Epanusia bifasciatus* Girault. Orig. desig.

albiclava Girault. D. C., Okla.

Epanusia albiclava Girault, 1916. Psyche 23 (2): 44. ♀.

xerophila (Brues). Kans., Tex.

Anusia xerophila Brues, 1906. Ent. News 17 (2): 61-62. ♂.

Genus EPIENCYRTUS Ashmead

Epiencyrtus Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 340, 346, 396-397.

Type-species: *Encyrtus thyreodontis* Ashmead. Orig. desig.

A genus of about five species that are hyperparasitic in Lepidoptera. *Epiencyrtus* appears cosmopolitan in distribution, but it has not been reported from Africa.

Taxonomy: Graham, 1958. Ent. Tidskr. 79 (3-4): 152-153.

artaceae (Howard). Fla. Host: Ophionine ichneumonid.

Encyrtus artaceae Howard, 1881. U. S. Dept. Agr., Ann. Rept. for 1880, pp. 252-253. ♂, ♀.

Taxonomy: Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 397.

thyreodontis (Ashmead). Mass. Host: *Thyreodon atricolor* (Oliv.).

Encyrtus thyreodontis Ashmead, 1898. Ent. Soc. Wash., Proc. 4 (2): 156. ♀.

Biology: Dimmock, 1898. Ent. Soc. Wash., Proc. 4 (2): 149.

Genus EURYHOPALUS Howard

Euryhopalus Howard, 1898. U. S. Natl. Mus., Proc. 21: 237.

Type-species: *Euryhopalus schwarzi* Howard. Monotypic.

Synaspidia Timberlake, 1923. Hawaii. Ent. Soc., Proc. 5 (3): 397-399.

Type-species: *Synaspidia pretiosa* Timberlake. Orig. desig.

Taxonomy: Gahan, 1942. U. S. Natl. Mus., Proc. 92: 49. — Kerrich, 1967. Brit. Mus. (Nat. Hist.) Ent., Bul. 20 (5): 190, 235, 246.

schwarzi Howard. Fla.

Euryhopalus schwarzi Howard, 1898. U. S. Natl. Mus., Proc. 21: 237. ♀.

Genus HABROLEOPTERYX Ashmead

Habrolepteryx Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 330, 359.

Type-species: *Psilophrys pulchripennis* Ashmead. Orig. desig.

marilandia Girault. Md.

Habrolepteryx marilandia Girault, 1917. Chalcidoidea Nova Marilandensis I, p. 1. ♀.

Habrolepteryx marylandia Peck, 1951. U. S. Dept. Agr., Agr. Monog. 2: 479. Unjustified emendation.

pulchripennis aeneiscapus Girault. Fla.

Habrolepteryx pulchripennis var. *aeneiscapus* Girault, 1916. Ent. News 27 (5): 225. ♀.

pulchripennis pulchripennis (Ashmead). Fla., N. C., N. J. Host: *Eriococcus carolinae* Williams.

Psilophrys pulchripennis Ashmead, 1888. Ent. Amer. 4 (1): 16. ♀.

Taxonomy: Girault, 1916. Ent. News 27 (5): 225.

Genus HABROLEPOIDEA Howard

Habrolepoidea Howard, 1894. Linn. Soc. London, Jour., Zool. 25: 89-90.

Type-species: *Habrolepoidea glauca* Howard. Monotypic.

Zarhopaloides Girault, 1915. Queensland Mus., Mem. 4: 99.

Type-species: *Zarhopaloides axillaris* Girault. Orig. desig.

Habrolepoidea contains about 8 species, at least some of which are parasitic on bruchid eggs. The genus is found in North America, the Caribbean, and possibly Australia.

depressa Girault. Ill. Host: *Megacyllene robiniae* (Forst.).

Habrolepoidea depressa Girault, 1916. Canad. Ent. 48 (10): 343-344. ♂, ♀.

perplexa Girault. Pa.

Habrolepoidea perplexa Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. V, p. 8. ♀.

Taxonomy: Girault, 1920. U. S. Natl. Mus., Proc. 58: 185-187.

tarsalis Girault. Ind.

Habrolepoidea tarsalis Girault, 1916. Canad. Ent. 48 (10): 344. ♀.

Genus HAMBLETONIA Compere

Hambletonia Compere, 1936. Hawaii. Ent. Soc., Proc. 9 (2): 172-173.

Type-species: *Hambletonia pseudococcina* Compere. Orig. desig.

This monotypic genus is found in tropical habitats. It has not been reported from Africa.

pseudococcina Compere. Fla. Host: *Dysmicoccus brevipes* (Ckll.).

Hambletonia pseudococcina Compere, 1936. Hawaii. Ent. Soc., Proc. 9 (2): 173-174. ♂, ♀.

Biology: Carter, 1937. Jour. Econ. Ent. 30 (2): 370-372. — Plank, 1938. Puerto Rico Agr. Expt. Sta., Rpt. for 1937. pp. 98-99. — Bartlett, 1939. Puerto Rico Univ., Jour. Agr. 23: 67-71.

— Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139: 106.

Genus HEMAENASIUS Ashmead

Hemaenasius Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 336, 374.

Type-species: *Hemaenasius confusus* Ashmead. Orig. desig.

Hemiaenasius Schulz, 1906. Spolia Hym., p. 146. Unjustified emend.

confusus Ashmead. D. C.

Hemaenasius confusus Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 374. ♀.

Taxonomy: Girault, 1920. U. S. Natl. Mus., Proc. 58: 183.

Genus HOLCENCYRTUS Ashmead

Holcencyrtus Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 339, 346, 394.

Type-species: *Aphycus niger* Ashmead. Orig. desig.

Holcencyrtus contains four species that are New World and Ethiopian in distribution. These insects are parasites of soft scale insects.

niger (Ashmead). Fla.

Aphycus niger Ashmead, 1888. Ent. Amer. 4 (1): 15. ♂.

physokermis Girault. Me., N. H., Wis., Oreg. Host: *Physokermes piceae*, (Schr.).

Holcencyrtus physokermis Girault, 1916. Ent. News 27 (5): 226-227. ♂, ♀.

Genus HENICOPYGUS Ashmead

Henicopygus Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 329, 355-356.

Type-species: *Henicopygus subapterus* Ashmead. Orig. desig.

subapterus Ashmead. Mont., Colo., Tex.

Henicopygus subapterus Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 356. ♀.

Biology: Brues and Melander, 1903. Biol. Bul. 5: 21.

Genus MEROMYZOBIA Ashmead

Meromyzobia Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 328, 349.

Type-species: *Ericydnus maculipennis* Ashmead. Orig. desig.

Meromyzobia presently is known only from North and South America. It contains seven species, one of which has been reported to be a parasite of Orthoptera eggs.

Taxonomy: Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 349-350.

americana (Ashmead). Fla.

Prionomastix americana Ashmead, 1888. Ent. Amer. 4 (1): 16. ♂.

bifasciata (Ashmead). Colo.

Homalotylus bifasciatus Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 28, 46. ♀.

flava Ashmead. D. C.

Meromyzobia flava Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 350. ♂.

flavicincta (Ashmead). Fla.

Choreia flavicincta Ashmead, 1888. Ent. Amer. 4 (1): 17. ♀.

maculipennis (Ashmead). N. J., Ohio. Host: *Anthrachophaga ingrata* (Will.), *Meromyza americana* Fitch.

Ericydnus maculipennis Ashmead, 1893. Ohio Agr. Expt. Sta., Tech. Ser., Bul. 1: 162-163. ♂.

unifasciata Ashmead. Miss.

Meromyzobia unifasciata Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 350. ♀.

Genus NEBAOCHARIS Girault

Nebaocharis Girault, 1916. Psyche 23 (2): 43.

Type-species: *Nebaocharis hemipterus* Girault. Orig. desig.

hemiptera Girault. Colo.

Nebaocharis hemipterus Girault, 1916. Psyche 23 (2): 43.

Genus PARAPHAENODISCUS Girault

Paraphaenodiscus Girault, 1915. Queensland Mus., Mem. 4: 93, 123.

Type-species: *Paraphaenodiscus verus* Girault. Orig. desig.

Aschitus Mercet, 1921. Fauna Iberica, Himen., Encirtidos pp. 59, 71, 599-600.

Type-species: *Aschitus incertus* Mercet. Orig. desig.

Paraphaenodiscus presently holds about 17 names. These parasites are predominantly Palearctic and Ethiopian in distribution and attack acleridids and mealybugs.

Taxonomy: Risbec, 1951. Inst. Fr. Noire, Mem. 13: 147-151. —Hoffer, 1954 (1953). Acta Soc.

Ent. Cechosl. 50: 156-157, 162-167. —Hoffer, 1953. Ochr. Prirody 8 (4): 88. —Ferriere, 1956.

Schweiz. Ent. Ges., Mitt. 29 (4): 391-396. —Hoffer, 1958. Acta. Soc. Ent. Cechosl. 55 (3):

250-263.

subterraneus Ferriere. Tex.(?).

Paraphaenodiscus subterraneus Ferriere, 1956. Schweiz. Ent. Gesell., Mitt. 29 (4): 391-393, 395. ♂, ♀.

Genus PARAPSILOPHRYS Howard

Parapsilophrys Howard, 1898. U. S. Natl. Mus., Proc. 21: 232-233.

Type-species: *Parapsilophrys gelechiae* Howard. Monotypic.

gelechiae Howard. Wis. w. to Wyo., Utah. Host: *Gelechia* sp. on cottonwood, *Gelechia lynceella* Zeller.

Parapsilophrys gelechiae Howard, 1898. U. S. Natl. Mus., Proc. 21: 233. ♂, ♀.

Genus PENTELICUS Howard

Pentelicus Howard, 1895. U. S. Natl. Mus., Proc. 17: 606, 611-612.

Type-species: *Pentelicus aldrichi* Howard. Monotypic.

aldrichi Howard. N. H., S. Dak., Nebr.

Pentelicus aldrichi Howard, 1895. U. S. Natl. Mus., Proc. 17: 612. ♀.

Taxonomy: Girault, 1920. U. S. Natl. Mus., Proc. 58: 183.

Genus PHEIDOLOXENUS Ashmead

Pheidoloxenus Ashmead, 1904. Carnegie Mus., Mem. 1 (4): 328, 385.

Type-species: *Pheidoloxenus wheeleri* Ashmead. Orig. desig.

Pheidoloxenus Girault, 1915. Ent. Soc. Amer., Ann. 8 (3): 273. Preocc. by Ashmead, 1904.

Type-species: *Pheidoloxenus wheeleri* Girault. Monotypic.

Pheidoloxenusiscus Ghesquiere, 1946. Rev. Zool. Bot. Africanes 34 (4): 369. N. name for

Pheidoloxenus Girault.

wheeleri Ashmead. Tex. Ecology: Nest of *Pheidole tepicana* Perg.

Pheidoloxenus wheeleri Ashmead, 1904. Carnegie Mus., Mem. 1 (4): 328, 385. ♀.

Pheidoloxenus wheeleri Girault, 1915. Ent. Soc. Amer., Ann. 8 (3): 273. Preocc. by Ashmead, 1904.

Taxonomy: Wheeler, 1907. Amer. Mus. Nat. Hist., Bul. 23: 17-18.

Genus PSILOPHRYOIDEA Compere

Psilophryoidea Compere, 1928. Calif. Univ. Pubs., Ent. 4 (8): 214-215.

Type-species: *Psilophryoidea comesor* Compere. Orig. desig.

comesor Compere. Calif. Host: *Kermes cockerelli* Ehrh.

Psilophryoidea comesor Compere, 1928. Calif. Univ., Pubs. Ent. 4 (8): 215. ♀.

Genus RHYTIDOTHORAX Ashmead

Rhytidothorax Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 337, 344, 377.

Type-species: *Rhytidothorax marlatti* Ashmead. Orig. desig.

marlatti Ashmead. Kans.

Rhytidothorax marlatti Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 377. ♀.

Genus TETRALOPHIELLUS Ashmead

Tetralophiellus Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 330, 357.

Type-species: *Tetralophiellus brevicollis* Ashmead. Orig. desig.

brevicollis Ashmead. Fla., Mo.

Tetralophiellus brevicollis Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 357. ♂.

Genus TETRALOPHIDEA Ashmead

Tetralophidea Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 327, 348.

Type-species: *Tetralophidea bakeri* Ashmead. Orig. desig.

bakeri Ashmead. Mo., Mont. s. to N. Mex.

Tetralophidea bakeri Ashmead, 1900. U. S. Natl. Mus., Proc. 22: 348-349. ♂.

Genus THYSANOMASTIX Perkins

Thysanomastix Perkins, 1907. Hawaii. Sugar Planters' Assoc. Expt. Sta., Div. Ent., Bul. 4: 55.

Type-species: *Thysanomastix koebelei* Perkins. Monotypic.

koebelei Perkins. Ariz. Host: *Cuernia lateralis* (F.).

Thysanomastix koebelei Perkins, 1907. Hawaii. Sugar Planters' Assoc. Expt. Sta., Div. Ent., Bul. 4: 55. ♀.

Genus ZAOMMOENCYRTUS Girault

Zaommoencyrtus Girault, 1916. Psyche 23 (2): 46.

Type-species: *Zaommoencyrtus submicans* Girault. Orig. desig.

submicans Girault. Pa. Host: *Alobates pennsylvanica* (Deg.).

Zaommoencyrtus submicans Girault, 1916. Psyche 23 (2): 46-47. ♀.

Family EULOPHIDAE

By B. D. BURKS

Taxonomy: Boucek, 1957. In Kratochvil, Klic Zvireny CRS 2: 269-278 (key to Central European genera; English translation, 1964, Ent. Soc. Canada, Mem. 34: 91-104). —Graham, 1959. Soc. Brit. Ent., Trans. 13: 169-204 (British fauna). —Boucek, 1959. Mus. Natl. Pragae, Acta Ent. 33: 117-194 (Central European fauna). —Boucek, 1963. Beitr. z. Ent. 13: 257-281. —Boucek, 1965. Mus. Natl. Pragae, Acta Ent. 36: 5-90. —Boucek and Askew, 1968. Index of Entomophagous Insects, Eulophidae (excl. Tetrastichinae), Le Francois, 254 pp. (Catalog of European fauna).

SUBFAMILY EULOPHINAE**TRIBE EULOPHINI**

Taxonomy: Graham, 1959. Soc. Brit. Ent., Trans. 13: 173-185 (Eulophinae; keys to British genera and species). —Boucek, 1959. Mus. Natl. Pragae, Acta Ent. 33: 117-120 (Eulophinae; key to genera). —Boucek, 1965. Ent. Soc. Canada, Mem. 34: 91-96 (Eulophinae; key to genera). —Yoshimoto, 1965. Pacific Insects 7: 670 (Eulophinae; key to Hawaiian genera). —Miller, 1970. Ent. Soc. Canada, Mem. 68: 5-10 (Eulophinae; key to genera).

Genus PNIGALIO Schrank

Pnigalio Schrank, 1802. Fauna Boica 2, pt. 2, p. 315.

Type-species: *Ichneumon pectinicornis* Linnaeus. Monotypic.

Notanisomorphomyia Girault, 1913. Queensland Mus., Mem. 2: 289.

Type-species: *Notanisomorphomyia albicoxa* Girault. Orig. desig.

Revision: Miller, 1970. Ent. Soc. Canada, Mem. 68: 11-31.

Taxonomy: Ferriere, 1952. Soc. Veneziana Storia Nat., Bol. 6: 175. —Erdos, 1954. Mus. Nat. Hung., Ann. Hist.-Nat. (n. s.) 5: 325 (= *Eulophus* Geoffroy).

coloni (Girault). Calif. (Walnut Creek). Ecology: From leaf miner in *Convolvulus*.

Sympiesis coloni Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 2. ♀.

flavipes (Ashmead). N. B., Que., Maine, s. to Va., w. to B. C., Wash., Oreg., Calif. Ecology:

Prefers hosts making blotch or tentiform mines in the leaves of deciduous plants. Host:

Antispila isabella Clem., *Argyresthia aureoargentella* Brower, *A. thuiella* (Pack.), *Coleophora pruniella* Clem., *Gracillaria* sp., *Lithocolletis* sp., *L. celtisella* Chamb., *L. gaultthiella* Wlsh., *L. malinalifoliella* Braun, *L. pictarella* Braun, *L. populiella* Chamb., *L. salicifoliella* Chamb., *Nepticula* sp., *Tischeria* sp., *T. castanaeella* Chamb.; *Caliroa cerasi* (L.), *Fenusa pusilla* (Lep.), *Heterarthrus nemoratus* (Fallen), *Metallus rohweri* MacG.; *Agromyza* sp., *Lirionmyza* sp.

Sympiesis flavipes Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 133. ♀.

Sympiesis tischeriae Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App. p. VI. ♀.

Sympiesis quercicola Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App. p. VII. ♀.

Biology: Lindquist, 1962. Canad. Ent. 94: 530 (*tischeriae*).

kukakensis (Ashmead). Alaska (Kukak Bay).

Eulophus kukakensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 147. ♂.

maculipes (Crawford). N. B., Que., Maine, s. to Va., w. to Alaska, B. C., Ariz. Ecology: Prefers

leaf-mining hosts on broad leaved deciduous plants and some evergreens; hosts make blotch or tentiform mines. Host: *Octotoma plicatulum* (F.); *Argyresthia aureoargentella* Brower, *A. thuiella* (Pack.), *Bucculatrix ainsliella* Murtf., *B. packardella* Chamb., *Cameraria hamadryadella* (Clem.), *C. hamameliella* (Busck), *Chrysopora* sp., *Coptodisca splendroferella* (Clem.), *Leucanthiza dircella* Braun, *Lithocolletis* sp., *L. cincinnatiella* Chamb., *L. crataegella* Clem., *L. malinalifoliella* Braun, *L. ostensackenella* (Fitch), *L. ostryaefoliella* Clem., *L. tremuloidella* Braun, *Nepticula* sp., *Paraclemensia acerifoliella* (Fitch), *Phyllocnistis populiella* Chamb., *Tischeria* sp., *T. ambrosiaella* Chamb., *T. malifoliella* Clem.; *Agromyza* sp., *A. aristata* Mall., *Lirionmyza melanopyga* (Loew), *Phytomyza* sp., *P. populicola* (Walk.); *Fenusa ulmi* Sund., *Heterarthrus nemoratus* (Fallen), *Metallus rohweri* MacG.

Sympiesis maculipes Crawford, 1913. U. S. Natl. Mus., Proc. 45: 258. ♀, ♂.

Sympiesis dandolini Girault, 1917. New Chalcid Flies, p. 1. ♀, ♂.

Biology: Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 81. — Gibbons and Butcher, 1961.

Jour. Econ. Ent. 54: 684. — Cheng and LaRoux, 1966. Ent. Soc. Quebec, Ann. 11: 89.

metacomet (Crawford). N. B., Que., Maine, Vt., Conn., Ont., N. Y., Ohio, La., Wis., Mo., Tex., B.

C., Calif. Ecology: Prefers as hosts insects making blotch mines in the leaves of deciduous plants. Host: *Rhynchaenus pallicornis* (Say); *Antispila nyssaefoliella* Clem., *Cameraria caryaefoliella* (Clem.), *C. hamadryadella* (Clem.), *Coleophora* sp., *C. pruniella* Clem., *Lithocolletis* sp., *L. aceriella* (Clem.), *L. picturatella* Braun, *Lyonetia salicella* Busck, *Parornix geminatella* (Pack.), *Tischeria* sp.; *Fenusa ulmi* Sund., *Nematus* sp., *Pontania* sp., *P. s-desmodioides* (Walsh).

Sympiesis metacomet Crawford, 1913. U. S. Natl. Mus., Proc. 45: 257. ♀.

Eulophus lineaticoxa Girault, 1916. Soc. Ent. 31: 37. ♀.

nemati (Westwood). Ont.; Europe. Host: *Pontania* sp.

Eulophus nemati Westwood, 1838. Mag. Nat. Hist. (n. s.) 2: 392.

Eulophus Tischbeinii Ratzeburg, 1848. Ichn. d. Forstins., v. 2, p. 154. ♂, ♀.

Taxonomy: Graham, 1963. Soc. Brit. Ent., Trans. 15: 183.

Biology: Askew, 1965. Roy. Ent. Soc. London, Proc. (B) 34: 4.

minio (Walker). N. B., Que., s. to Fla., w. to Man., N. Dak., Nebr., Tex. Ecology: An ectoparasite of hosts that form blotch mines on the leaves of deciduous plants. Host:

Brachys sp., *Erema* sp., *Mantura floridana* Cr., *Rhynchaenus pallicornis* (Say); *Antispila* sp., *Argyresthia thuiella* (Pack.), *Chrysopora* sp., *Coptodisca* sp., *C. splendroferella* (Clem.), *Leucanthiza amphiarpeaefoliella* Clem., *Lithocolletis* sp., *L. celtisella* Chamb., *L. crataegella* Clem., *Nepticula* sp., *Ornix* sp., *Parornix geminatella* (Pack.), *P. kalmiella* (Dietz), *Protolithocolletis lathyri* Braun, *Tischeria* sp., *T. malifoliella* Clem.; *Agromyza melanopyga* Loew, *A. parvicornis* Loew, *Lirionmyza* sp., *Phytomyza populicola* (Walk.), *Phytomyza* sp., *P. ilicicola* Loew, *P. ilicis* Curtis.

Eulophus Minio Walker, 1847. Ann. and Mag. Nat. Hist. 20: 26. ♀.

- Elachistus proximus* Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 340. ♀.
Eulophus guttiventris Girault, 1906. Ent. News 17: 305. ♀, ♂.
Sympiesis felti Crawford, 1911. U. S. Natl. Mus., Proc. 40: 448. ♀.
Sympiesis agromyzae Gahan, 1913. U. S. Natl. Mus., Proc. 46: 440. ♀.
Sympiesis agromyzae var. *pennsylvanicus* Girault, 1917. Descr. Stellarum Nov., p. 7. ♀.
Sympiesis wordsworthi Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 10. ♀.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 175 (synonymy; lectotype designated).

pallipes (Provancher). Ont.

- Caccophagus(!) pallipes* Provancher, 1887. Addit. Corr. Faune. Ent. Canada Hym., p. 206. ♀.
Coccophagus pallilipes Dalla Torre, 1898. Cat. Hym., v. 5, p. 226. Emend.

Taxonomy: Burks, 1964 (1963). Canad. Ent. 95: 1257.

uropatae (Howard). N. B., Que., Maine, s. to Fla., w. to Utah, Ariz., Oreg., Calif. Ecology:

- Prefers hosts that are leaf-miners forming blotch mines on deciduous plants. Host:
Baliosus ruber (Web.), *Microthopala vittata* (F.), *Odontota suturalis* Thunb.,
Rhynchaenus palliicornis (Say), *Xenochalepus dorsalis* (Thunb.); *Ancylys comptana fragariae* (W. and R.), *Antispila* sp., *Cameraria hamadryadella* (Clem.), *Coleophora* sp.,
C. salmani Hein., *Gracillaria belfrageella* Chamb., *Leucanthiza dircella* Braun,
Lithocolletis sp., *L. celtisella* Chamb., *L. cincinnatiella* Chamb., *Neurobathra strigifinitella* (Clem.), *Tischeria malifoliella* Clem.
Sympiesis uropatae Howard, 1885. Ent. Amer. 1: 117. ♂.
Sympiesis unicarinatus Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 343. ♀.

Taxonomy: Girault, 1916. Soc. Ent. 31: 37.

Biology: Chittenden, 1902. U. S. Dept. Agr., Div. Ent. Bul. 38: 82.

Genus SYMPIESIS Foerster

- Sympiesis* Foerster, 1856. Hym. Stud., v. 2, pp. 74, 76.
Type-species: *Eulophus sericeicornis* Nees. Orig. desig.
Teleognus Foerster, 1856. Hym. Stud., v. 2, pp. 72, 74.
Type-species: *Teleognus orbitalis* Foerster. Monotypic.
Sympiezus Thomson, 1878. Hym. Scand., v. 5, p. 208. Emend.
Pseudophelminus Girault, 1913. Queensland Mus., Mem. 2: 286.
Type-species: *Pseudophelminus longiventris* Girault. Orig. desig.
Notanisomorphella Girault, 1913. Queensland Mus., Mem. 2: 287.
Type-species: *Notanisomorphella australiensis* Girault. Orig. desig.
Moroceras Erdos, 1954. Mus. Nat. Hung., Ann. Hist. Nat. (n. s.) 5: 323.
Type-species: *Moroceras biro* Erdos. Orig. desig.
Sympiesis subg. *Cladosympiesis* Graham, 1959. Soc. Brit. Ent., Trans. 13: 182.
Type-species: *Eulophus gordius* Walker. Orig. desig.

Revision: Boucek, 1959. Mus. Natl. Pragae, Acta Ent. 33: 121-138 (Central European species, with subgenera). — Miller, 1970. Ent. Soc. Canada, Mem. 68: 31-121.

Taxonomy: Boucek, 1959. Mus. Natl. Pragae, Acta Ent. 33: 121. — Delucchi, 1962. Awamia 5: 60. — Graham, 1963. Soc. Brit. Ent., Trans. 15: 187.

acrobasis Miller. Va., Fla., Miss., Tex. *Acrobasis* sp., *A. caryvorella* Rag., *A. indigenella* (Zell.), *A. juglandis* (LeB.).

Sympiesis acrobasis Miller, 1970. Ent. Soc. Canada, Mem. 68: 76. ♀, ♂.

ancyllae Girault. N. B., Que., Ont., N. Y., Md., Va., N. C., Ohio, Tenn., Ill., Minn., Iowa, Ark., Kans., Alta., Calif. Ecology: Parasitizes hosts that roll leaf margins of deciduous plants. Host: *Ancylys comptana fragariae* (W. and R.), *Gelechia* sp., *Sparganothis sulphureana* (F.).

Sympiesis ancyllae Girault, 1917. U. S. Natl. Mus., Proc. 53: 448. ♀.

Biology: Lewis, 1925. Jour. Econ. Ent. 18: 609-612. — Balduf, 1959. Ill. Biol. Monog. 26: 146.

- argenticoxae** Girault. Que., Ont., Md., Va., W. Va., Ohio, Tenn., Ill., Mo., Man. Ecology: Parasitizes hosts living in rolled leaves or between leaves tied together with silk. Host: *Ancylys divisana* Walk., *Coleophora malivorella* Riley, *Psilocorcis quercicella* Clem. *Sympiesis argenticoxae* Girault, 1917 (1916). Insector Inscitiae Menstruus 4: 120. ♀.
- bimaculatipennis** (Girault). N. B., Que., Maine, s. to Va., w. to Alaska, s. to Calif. Ecology: Prefers lepidopterous hosts that make blotch mines or skeletonize leaves of deciduous plants; has been recorded as parasitizing leaf rollers. Host: *Agonopterix posticella* (Wlsm.), *Ancylys comptana fragariae* (W. and R.), *Lithocolletis* sp., *L. blanchardella* (F.), *Ornix* sp., *Parornix geminatella* (Pack.), *Spilonota lariciana* (Hein.), *S. ocellana* (D. and S.), *Tischeria malifoliella* (Clem.).
Astichus bimaculatipennis Girault, 1912. Canad. Ent. 44: 8. ♀.
Sympiesis bimaculata Crawford, 1913. U. S. Natl. Mus., Proc. 45: 259. ♀.
Sympiesis meteori Girault, 1916. Soc. Ent. 31: 37. ♀.
- Biology: Sadava and Miller, 1967. Canad. Ent. 99: 436-442.
- conica** (Provancher). N. B., Que., Maine, s. to Fla., w. to N. W. T., B. C., Wash., Oreg., Calif. Ecology: Parasitizes hosts that make blotch or tentiform mines in the leaves of deciduous plants; ectoparasitic on host larvae. Host: *Bucculatrix* sp., *Caloptilia rhombifoliella* (Chamb.), *Cameraria caryaefoliella* (Clem.), *C. hamadryadella* (Clem.), *Choristoneura conflictana* (Walk.), *Coleophora pruniella* Clem., *Coleotechnites milleri* (Busck), *Epinotia laracana* Kft., *Gracillaria alnivorella* Chamb., *G. azaleae* Brants, *G. negundella* Chamb., *Lithocolletis* sp., *L. albicoella* Wlsm., *L. blanchardella* (F.), *L. cincinnatiella* (Chamb.), *L. crataegella* Clem., *L. lucetiella* Clem., *L. salicifoliella* Chamb., *L. tremuloidella* Braun, *Nepticula* sp., *Parornix geminatella* (Pack.), *Phyllocnistis* sp., *Tischeria malifoliella* Clem.; *Sciaphila* sp.; *Apanteles* sp.
Metacolus conicus Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 200. ♀.
Cocophagus compressicornis Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 206. ♀.
Sympiesis nigripes Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App. p. VII. ♀, ♂.
Sympiesis massasoit Crawford, 1913. U. S. Natl. Mus., Proc. 45: 258. ♀, ♂.
- Taxonomy: Burks, 1964 (1963). Canad. Ent. 95: 1257, 1259.
- Biology: Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 81. — Miller, 1970. Ent. Soc. Canada, Mem. 68: 42.
- dolichogaster** Ashmead. Que., Ont., Maine, s. to Fla., w. to Kans., B. C., Idaho; Europe. Ecology: Prefers lepidopterous hosts that mine deciduous leaves in early development and then live in leaf rolls in later development. Host: *Caloptilia fraxinella* (Ely), *Episimus argutannus* (Clem.), *Gracillaria* sp., *G. belfrageella* Chamb., *G. cuculipennella* (Hbn.), *G. negundella* Chamb., *G. perseae* Busck, *G. sassafrasella* Chamb., *Hydriomena rennunctia* (Wlkr.).
Sympiesis dolichogaster Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App. p. VII. ♀.
Sympiesis nowickii Szelenyi 1941. Frag. Faun. Hung. 4: 27. ♀.
- Taxonomy: Girault, 1916. Soc. Ent. 31: 36-37. — Boucek, 1959. Mus. Natl. Pragae, Acta Ent. 33: 130.
- enargiae** Miller. N. B., Que., Ont., N. W. T., B. C. Ecology: Parasitic on lepidopterous larvae that hide between leaves tied with silk or in rolled or curled leaves. Host: *Enargia decolor* (Walk.).
Sympiesis enargiae Miller, 1970. Ent. Soc. Canada, Mem. 68: 42. ♀, ♂.
- fragariae** Miller. Conn., Pa., Del., Md., Va., W. Va., Ga., Ohio, Wis., Kans. Ecology: Parasitizes lepidopterous larvae that live within rolled leaves or within cases. Host: *Ancylys comptana fragariae* (W. and R.), *Anthophila pariana* (Clerck), *Argyrotaenia velutinana* (Walk.), *Coleophora malivorella* Riley, *Tetralopha robustella* Zell.
Sympiesis fragariae Miller, 1970. Ent. Soc. Canada, Mem. 68: 68. ♀, ♂.
- marylandensis** Girault. N. B. and Que., s. to Va., w. to B. C., s. to Calif. Ecology: Parasitizes lepidopterous hosts that make blotch mines in deciduous leaves. Host: *Caloptilia elongella* (L.), *Coleotechnites thujaella* Kearf., *Lithocolletis* sp., *L. basistrigella* Clem., *L. blanchardella* (F.), *L. celtisella* Chamb., *L. crataegella* Clem., *L. felinella* Hein., *L.*

- lucidicostella* Clem., *L. malimalifoliella* Braun, *L. propinquella* Braun, *L. robiniella* Clem., *L. salicifoliella* Chamb., *Parornix geminatella* (Pack.), *Peronea chalybeana* Fern., *Phyllocnistis populiella* Chamb.; *Heterarthrus nemoratus* (Fallen).
- Sympiesis marylandensis* Girault, 1917 (Feb.). Entomologist 50: 37. ♀.
- Sympiesis rex* Girault, 1917 (March). New Chalcid Flies, p. 2.
- Sympiesis miltoni* Girault, 1917 (May). Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 7. ♀.
- Sympiesis lexingtonensis* Girault, 1917 (Aug.). Descr. Hym. Chalcidoid. Variorum cum Observ. V, p. 6. ♀.
- marylandia** Girault. Que., Ont., N. H., Md., Minn. Ecology: Has been reared from oak leaves, probably from leaf miners.
- Sympiesis marilandia* Girault, 1917. Chalcidoidea Nova Marilandensis, p. 1. ♀.
- Sympiesis marylandia* Peck, 1951. In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 427. Emend.
- stigmata** Girault. Ill., Sask., Wyo., Alta., Idaho, Ariz., B. C., Oreg., Calif. Ecology: Parasitizes leaf miners or case bearers on deciduous leaves. Host: *Coleophora pruniella* Clem., *Gracillaria negundella* Chamb., *Lithocolletis felinella* Hein., *Tischeria omissa* Braun.
- Sympiesis stigmatus* Girault, 1917 (May). Descr. Stellarum Nov., p. 15. ♀.
- Sympiesis substigmatus* Girault, 1917 (Aug.). U. S. Natl. Mus., Proc. 53: 447. ♀.
- stigmatipennis** Girault. N. B., Que., Ont., s. to S. C., w. to B. C., s. to Calif. Ecology: Parasitic on lepidopterous larvae mining foliage of coniferous plants as well as others having deciduous foliage; it is possible these are alternate hosts. Host: *Argyresthia thuella* (Pack.), *Argyrotaenia citrana* (Fern.), *Chrysoesthia sexguttella* (Thunb.), *Coleophora eleagnisella* Kearf., *Coleotechnites apicitripunctella* (Clem.), *C. gibsonella* (Freem.), *C. milleri* (Busck), *C. starki* (Freem.), *Exroteleia dodecella* (L.), *E. pinifoliella* (Chamb.), *Keiferia lycopersicella* (Wlsm.), *Ocnerosoma pinariella* Zell., *Phthorimaea operculella* (Zell.), *Polyhymno luteostrigella* Chamb., *Rhyacionia buoliana* (Schiff.), *R. frustrana* (Comst.).
- Sympiesis stigmatipennis* Girault, 1917. Descr. Stellarum Nov., p. 14. ♀, ♂.
- Sympiesis guttatipennis* Girault, 1917. Descr. Stellarum Nov., p. 15. ♀.
- Biology: Graf, 1917. U. S. Dept. Agr., Bul. 427: 33-38.
- trieladus** (Provancher). Ont.
- Eulophus trieladus* Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 208. ♀, ♂.
- Taxonomy: Burks, 1964 (1963). Canad. Ent. 95: 1258.
- viridula** (Thomson). N. B., Que., Ont., N. Y., Pa., Ohio, Mich., Ind., Wis., Ill., Minn., Iowa, Mo., N. Dak., S. Dak., Nebr., Wyo., Colo., Alta.; Europe. Ecology: Parasitizes host in its burrow within stalk. Introduced from Europe for biological control; liberated in 1930, and occasional specimens recovered. First found in established colonies in 1938, in Ohio and Michigan. Host: *Ostrinia nubilalis* (Hbn.), *O. obumbratalis* (Led.), *O. penitalis* (Grote), *Papaipema nebris* (Guen.).
- Eulophus viridulus* Thomson, 1878. Hym. Scand., v. 5, p. 233. ♀.
- Taxonomy: Ellinger and Sachtleben, 1928. Internatl. Corn Borer Invest., Sci. Rpt. (1): 126-129. —Boucek, 1959. Mus. Natl. Pragae, Acta Ent. 33: 123, 125, 134.
- Biology: Dudich, 1928. Internatl. Corn Borer Invest., Sci. Rpt. (1): 188. —Thompson and Parker, 1928. U. S. Dept. Agr., Tech. Bul. 59: 17. —Sachtleben, 1930. Internatl. Corn Borer Invest., Sci. Rpt. 3: 52, 108-111. —Parker and Smith, 1933. Ent. Soc. Amer., Ann. 26: 21-39. —Baker and Bradley, 1940 (1939). Sixth Pacific Sci. Cong., Proc. 4: 332-333. —Wishart, 1943. Ent. Soc. Ontario, Ann. Rpt. 73: 28-29. —Arbuthnot, 1953. North Central States Br. Ent. Soc. Amer., Proc. 8th Ann. Meet., pp. 30-31. —Blickenstaff *et al.*, 1953. Iowa State Col., Jour. Sci. 27: 360. —York *et al.*, 1955. Jour. Econ. Ent. 48: 765. —Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139: 129-130. —Rolston *et al.*, 1958. Ohio Agr. Expt. Sta., Res. Bul. 819: 20. —Peters *et al.*, 1961. Mo. U. Coll. Agr., Res. Bul. 757: 14. —Hazardstevic, 1961. Zast. Bilja 65-66: 107. —Goos, 1965. Polskie Pismo Ent. (B) 37-38: 66. —Hudon, 1965. Phytoprotection 46: 113. —Frye, 1971. N. Dak. Res. Rpt. 27: 1-16.

Genus **NECREMNUS** Thomson

Necremnus Thomson, 1878. Hym. Scand., v. 5, pp. 208, 234.

Type-species: *Eulophus leucarthros* Nees. Desig. by Ashmead, 1904.

Revision: Gahan, 1941. Wash. Acad. Sci., Jour. 31: 196-203. —Boucek, 1959. Mus. Natl. Pragae, Acta Ent. 33: 147-155 (Central European spp.). —Graham, 1959. Soc. Brit. Ent., Trans. 13: 184 (British spp.).

breviramulus Gahan. Ill., Mo., Kans. Host: *Hypera compta* (Say), *H. eximia* (LeC.).

Necremnus breviramulus Gahan, 1941. Wash. Acad. Sci., Jour. 31: 197, 199. ♀, ♂.

californicus (Girault). N. Dak., Calif.

Eulophus californicus Girault, 1917. U. S. Natl. Mus., Proc. 53: 446. ♀.

comptus Gahan. Calif.

Necremnus comptus Gahan, 1941. Wash. Acad. Sci., Jour. 31: 197, 198. ♀.

Taxonomy: Boucek, 1959. Mus. Natl. Pragae, Acta Ent. 33: 150 (? syn. of *artynes* Walker).

cyriades (Walker). Fla., D. C. Host: *Hedra ochroleucana* (Hbn.).

Eulophus Cyriades Walker, 1847. Ann. and Mag. Nat. Hist. (1) 20: 25. ♂.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 142.

duplicatus Gahan. Idaho, Wash. Host: *Centorhynchus assimilis* (Payk.).

Necremnus duplicatus Gahan, 1941. Wash. Acad. Sci., Jour. 31: 197, 198, 201. ♀, ♂.

Taxonomy: Boucek, 1959. Mus. Natl. Pragae, Acta Ent. 33: 152 (? syn. of *tidius* Walker).

Biology: Hanson, Carlson, and Breakley, 1948. Wash. Agr. Expt. Sta., Bul. 498: 14-15. —Walz, 1957. Ent. Soc. Amer., Ann. 50: 220.

iphinoe (Walker). Fla.

Eulophus Iphinoe Walker, 1847. Ann. and Mag. Nat. Hist. (1) 20: 25. ♂.

Eulophus Gobryas Walker, 1847. Ann. and Mag. Nat. Hist. (1) 20: 26. "♂" = ♀.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 145 (synonymy; lectotype designated).

oregonensis Gahan. Oreg. Host: *Hypera ramicis* (L.).

Necremnus oregonensis Gahan, 1941. Wash. Acad. Sci., Jour. 31: 197, 200. ♀, ♂.

Biology: Chamberlin, 1933. Ent. Soc. Wash., Proc. 35: 107 (*Necremnus* sp.).

Genus **HEMIPTARSENUS** Westwood

Hemiptarsenus Westwood, 1833. Mag. Nat. Hist. 6: 122.

Type-species: *Hemiptarsenus fulvicollis* Westwood. Desig. by Westwood, 1840.

Hemiptarsenoideus Girault, 1916. Queensland Mus., Mem. 5: 220.

Type-species: *Hemiptarsenoideus semialbiclava* Girault. Desig. by Gahan and Fagan, 1923.

Cleolophus Mercet, 1924. R. Soc. Esp. Hist. Nat., Bol. 24: 461.

Type-species: *Cleolophus autonomus* Mercet. Orig. desig.

Taxonomy: Boucek, 1959. Mus. Natl. Pragae, Acta Ent. 33: 144. —Hedqvist, 1963. Stud. Forest. Suecia 11: 142.

americanus (Girault). N. Y., D. C., Md., Va., Colo.

Hemiptarsenoideus americanus Girault, 1916. U. S. Natl. Mus., Proc. 51: 47. ♀.

Genus **PARDIAULOMELLA** Girault

Pardiaulomella Girault, 1915. Queensland Mus., Mem. 3: 295.

Type-species: *Pardiaulomella consonus* Girault. Orig. desig.

ibseni Girault. D. C., Va., Fla., Ohio, Iowa, Ark., Tex. Host: *Desmia funeralis* (Hbn.).

Pardiaulomella ibseni Girault, 1916. U. S. Natl. Mus., Proc. 51: 50. ♀, ♂.

Biology: Strauss, 1916. U. S. Dept. Agr., Bul. 419: 9-12.

Genus DIAULOMORPHA Ashmead

Diaulomorpha Ashmead, 1900. Linn. Soc. N. S. Wales, Proc. 25: 347.

Type-species: *Diaulomorpha australiensis* Ashmead. Monotypic.

borrowi (Girault). Calif. This species is represented only by a fragmentary type specimen.

Eulophus borrowi Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 9.

♀.

Taxonomy: Girault, 1920. U. S. Natl. Mus., Proc. 58: 201.

Genus DIGLYPHUS Walker

Diglyphus Walker, 1844. Ann. and Mag. Nat. Hist. 14: 409.

Type-species: *Cirrospilus chabrias* Walker. Monotypic.

Solenotus Foerster, 1856. Hym. Stud., v. 2, pp. 74, 76.

Type-species: *Solenotus viridis* Foerster. Monotypic.

Diaulus Ashmead, 1904. Carnegie Mus., Mem. 1: 356, 357. Preocc. by Mueller, 1879.

Type-species: *Diaulus begini* Ashmead. Monotypic.

Solenonotus Schulz, 1906. Spolia Hym., p. 143. Emend. Preocc. by Reuter, 1871.

Revision: Crawford, 1912. U. S. Natl. Mus., Proc. 43: 183-185 (*Diaulinus*).

Taxonomy: Gahan and Fagan, 1923. U. S. Natl. Mus., Bul. 124: 43. —Ferriere, 1952. Soc.

Veneziana Storia Nat., Bol. 6: 176. —Graham, 1959. Soc. Brit. Ent., Trans. 13: 178. —Peck, 1963. Canad. Ent., Sup. 30: 102-104.

begini (Ashmead). Que., N. H., N. Y., Md., Ind., Kans., Wyo., N. Mex., Idaho, Calif.; Mexico.

Host: *Agromyza parvicornis* Loew, *Phytomyza albiceps* Meig., *P. atricornis* Meig.

Diaulus begini Ashmead, 1904. Carnegie Mus., Mem. 1: 356, 372. ♀.

Taxonomy: Gahan and Peck, 1946. Wash. Acad. Sci., Jour. 36: 315.

Biology: Webster and Parks, 1913. Jour. Agr. Res. 1: 78. —Sweetman, 1936. Biol. Control of Insects, pp. 146-147. —Doutt, 1957. Jour. Econ. Ent. 50: 373.

intermedius (Girault). R. I., Fla., Ill., Calif. Host: *Liriomyza propepusilla* Frost, *Phytomyza atricornis* Meig.

Diaulinus intermedius Girault, 1916. Canad. Ent. 48: 265. ♀.

Diaulinus carlylei Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 6. ♀.

Taxonomy: Girault, 1920. U. S. Natl. Mus., Proc. 58: 203.

Biology: Michelbacher *et al.*, 1952. Jour. Econ. Ent. 45: 473.

pulchripes (Crawford). Ont., N. Y., Md., Ind., Ill., Mich. Host: *Agromyza parvicornis* Loew, *Liriomyza melampyga* (Loew), *Phytobia posticata* (Meig.), *Sargus lucens* Loew.

Diaulinus pulchripes Crawford, 1912. U. S. Natl. Mus., Proc. 43: 184. ♀.

websteri (Crawford). Maine, Mass., N. Y., Kans., Utah, Ariz., Nev., Calif. Host: *Agromyza parvicornis* Loew, *Cerodontha dorsalis* (Loew), *Meoneura obscuraria* (Fall.), *Phytobia artemisiae* (Kalt.).

Diaulinus websteri Crawford, 1912. U. S. Natl. Mus., Proc. 43: 184. ♂, ♀.

Biology: Webster and Parks, 1913. Jour. Agr. Res. 1: 78-79. —Hills and Taylor, 1951. Jour. Econ. Ent. 44: 760.

Genus NOTANISOMORPHA Ashmead

Notanisomorpha Ashmead, 1904. Carnegie Mus., Mem. 1: 356, 357.

Type-species: *Notanisomorpha collaris* Ashmead. Orig. desig.

ainsliei Crawford. N. Y., Del., Ind., La., Colo., Utah. Host: *Agromyza parvicornis* Loew, *Phytobia angulata* (Loew).

Notanisomorpha ainsliei Crawford, 1912. U. S. Natl. Mus., Proc. 43: 185. ♂, ♀.

calavius (Walker). Md., Fla.

Eulophus Calavius Walker, 1847. Ann. and Mag. Nat. Hist. (1) 20: 24. ♀, ♂.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 141 (lectotype designated).

collaris Ashmead. Que., N. Y., Md., Ga., Tex., Idaho.

Notanisomorpha collaris Ashmead, 1904. Carnegie Mus., Mem. 1: 356, 382. ♀.

Taxonomy: Crawford, 1912. U. S. Natl. Mus., Proc. 43: 185. — Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 2. — Gahan and Peck, 1946. Wash. Acad. Sci., Jour. 36: 316.

longifasciata Girault. Que., Ont., N. J., Ind. Host: *Phytobia angulata* (Loew).

Notanisomorpha longifasciata Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 2. ♀.

meromyzae Gahan. Ind., N. Dak., S. Dak., Kans. Host: *Meromyza americana* Fitch.

Notanisomorpha meromyzae Gahan, 1917. U. S. Natl. Mus., Proc. 53: 216. ♀, ♂.

nevadensis Girault. Nev.

Notanisomorpha nevadensis Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 1. ♀.

noncarinata Girault. Ariz.

Notanisomorpha noncarinata Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 1. ♀.

particola Girault. Fla.

Notanisomorpha particola Girault, 1916. Soc. Ent. 31: 42. ♀.

Genus EULOPHUS Olivier

Eulophus Geoffroy, 1762. Hist. Abrege des Insectes, v. 2, p. 312. Not available, *teste* Opinion 228, Internatl. Comn. Zool. Nomencl., 1954.

Type-species: *Ichneumon ramicornis* Fabricius. Desig. by Latreille, 1810.

Eulophus Olivier, 1791. Encycl. Meth., v. 6, p. 454.

Type-species: *Ichneumon ramicornis* Fabricius. Monotypic.

Comedo Schrank, 1802. Fauna Boica 2, pt. 2, p. 315.

Type-species: *Ichneumon larvarum* Linnaeus. Monotypic.

Cratotechus Thomson, 1878. Hym. Scand., v. 5, pp. 208, 219.

Type-species: *Ichneumon larvarum* Linnaeus. Desig. by Ashmead, 1904.

Cratotechus Dalla Torre, 1898. Cat. Hym., v. 5, p. 55. Emend.

Comedo subg. *Onychocomedo* Graham, 1959. Soc. Brit. Ent., Trans. 13: 183.

Type-species: *Eulophus thespius* Walker. Orig. desig.

Revision: Crawford, 1912. U. S. Natl. Mus., Proc. 43: 186-188 (*comedo*).

Taxonomy: Boucek, 1959. Mus. Natl. Pragae, Acta Ent. 33: 160. — Gijswijt, 1964. Ent. Ber. 24: 31 (*Eulophus* Muller, 1764).

anomocerus (Crawford). Que., Ont., Conn., N. Y., N. J., Va., W. Va., Mich., N. Dak. Host:

Anthophila pariana (Clerck), *Schizura unicornis* (Smith).

Comedo anomocerus Crawford, 1912. U. S. Natl. Mus., Proc. 43: 187. ♀, ♂.

Biology: Schaffner and Griswold, 1934. U. S. Dept. Agr., Misc. Pub. 188: 81, 154. — Raizenne, 1952. Canad. Dept. Agr., Forest Lep. and Par., p. 91.

basalis Say. Ind., Mo.

Eulophus basalis Say, 1836. Boston Jour. Nat. Hist. 1: 273. ♀.

Comedo omari Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 9. ♀.

brevicapitatus (Cook and Davis). Que., Mass., Mich., La. Host: *Euplexia benesimilis* McD.,

Heterocampa bilineata (Pack.), *H. manteo* (Dbldy.), *Symmerista albifrons* (Smith).

Cratotechus brevicapitatus Cook and Davis, 1891. Mich. Agr. Expt. Sta., Bul. 73: 12. ♀, ♂.

Biology: Dimmock, 1898. Ent. Soc. Wash., Proc. 4: 150. — Schaffner and Griswold, 1934. U. S. Dept. Agr., Misc. Pub. 188: 154.

koebeleii (Crawford). Calif. Host: *Orygia vetusta* (Bdvl.).

Comedo koebeleii Crawford, 1912. U. S. Natl. Mus., Proc. 43: 187. ♀.

magnisulcatus Girault. Maine, s. to W. Va. Host: *Coleophora laricella* (Hbn.) *C. malivorella* Riley, *C. pruniella* Clem.

Eulophus magnisulcatus Girault, 1916. Ent. News 27: 404. ♀.

Biology: Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 43, 81.

nebulosus (Provancher). Ont., Mass., s. to Fla., w. to Wis. Host: *Amphipyra pyramidoides*

Guen., *Lithophane* sp.

Miotropis nebulosa Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 208. ♀.

Comedo hookeri Crawford, 1912. U. S. Natl. Mus., Proc. 43: 188. ♀.

Biology: Schaffner and Griswold, 1934. U. S. Dept. Agr., Misc. Pub. 188: 49, 154.

neomexicanus (Girault). N. Mex.

Comedo neomexicanus Girault, 1917. New Chalcid Flies, p. 4.

Taxonomy: Girault, 1920. U. S. Natl. Mus., Proc. 58: 201.

orgyiae (Fitch). Que., Ont., N. Y., N. J., Pa., N. C., Miss., Wis., Wash., Oreg., Calif. Host:

Acronicta grisea Walk., *Alsophila pometaria* (Harris), *Caloptilia rhoifoliella* (Chamb.),

Gluphisia septentrionis Walk., *Orgyia leucostigma* (J. E. Smith), *O. plagiata* (Walk.),

Orthosia hibisci (Gn.), *Stenomoma algidella* (Walk.).

Trichogramma? *orgyiae* Fitch, 1856. Country Gentleman 7: 235.

Taxonomy: Fitch, 1856. N. Y. State Agr. Soc., Trans. 15: 448-449. —Howard, 1897. U. S.

Dept. Agr., Div. Ent., Tech. Ser. 5: 28. —Girault, 1920. U. S. Natl. Mus., Proc. 58: 201.

Biology: Raizenne, 1952. Canad. Dept. Agr., Forest Lep. and Par., pp. 39, 49, 92, 97, 109, 257.

smerinithi (Ashmead). Ont., N. H., Mass., Md. Host: *Alsophila pometaria* (Harris), *Amphipyra pyramidoides* Guen., *Paonias excaecata* (Smith).

Cratotechus smerinithi Ashmead, 1898. Ent. Soc. Wash., Proc. 4: 158. ♀, ♂.

Taxonomy: Girault, 1920. U. S. Natl. Mus., Proc. 58: 201. —Burks, 1964 (1963). Canad. Ent. 95: 1257.

Biology: Dimmock, 1898. Ent. Soc. Wash., Proc. 4: 150. —Schaffner and Griswold, 1934. U. S. Dept. Agr., Misc. Pub. 188: 52, 154.

Genus DAHLBOMINUS Hincks

Microplectron Dahlbom, 1857. Ofvers. Svenska Vetensk.-Akad., Forh. 14: 292 (no species).

—Thomson, 1878. Hym. Scand., v. 5, p. 222. One species. Preocc. by Streubel, 1842.

Type-species: *Entedon fuscipennis* Zetterstedt. Included by Thomson, 1878.

Dahlbominus Hincks, 1945. Entomologist 78: 90. N. name.

fuscipennis (Zetterstedt). Newfoundland, Que., Ont., Maine, N. Y., Conn., Pa., N. J., Del., Md.,

Va., N. C., Mich., Wis., Ill., Minn., Mo.; Europe. Introduced for biological control from

Europe in 1933 in Eastern Canada and in 1935 in Northeastern U. S. Recovered

promptly and much subsequent spread by natural dissemination. Host: *Diprion similis*

(Htg.), *Gilpinia frutetorum* (F.), *G. hercyniae* (Htg.), *Neodiprion lecontei* (Fitch), *N.*

nanulus Schedl., *N. pinetum* (Nort.), *N. pratti* (Dyar), *N. sertifer* (Geof.), *N. swaini*

Midd., *N. tsugae* Midd., *Pristiphora erichsonii* (Htg.).

Entedon fuscipennis Zetterstedt, 1838. Insecta Lapponica, p. 427 [recte 429]. ♀.

Taxonomy: Boucek, 1959. Mus. Natl. Pragae, Acta Ent. 33: 145. —Finlayson, 1960. Canad. Ent. 92: 37-44 (immature stages).

Biology: Morris and Cameron, 1935. Bul. Ent. Res. 26: 407-418. —Ullyett, 1936. Bul. Ent.

Res. 27: 195-217. —Ullyett, 1936. Roy. Ent. Soc. London, Proc. (B) 120: 253-291. —Dowden,

1939. Jour. Econ. Ent. 32: 623. —Miller, 1940. U. S. Bur. Ent. Plant Quar. ET-161: 1-5.

—Balch, 1941 (1940). N. S. Dept. Lands and Forests, Rpt., pp. 72-74. —Wilkes, 1942. Roy.

Ent. Soc. London, Proc. (B) 130: 400-415. —Wilkes, 1947. Roy. Ent. Soc. London, Proc. (B)

134: 227-245. —Burnett, 1951. Amer. Nat. 85: 337. —Reeks, 1953. Canad. Jour. Agr. Sci. 33:

408. —Burnett, 1953. Ecology 34: 322. —Coppel, 1954. Canad. Ent. 86: 168. —Burnett,

1956. Ent. Soc. Amer., Ann. 49: 55. —Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139:

101-102. —Riordan, 1957. Canad. Jour. Zool. 35: 603. —Burnett, 1958. Canad. Ent. 90: 279.

—Finlayson and Finlayson, 1958. Canad. Ent. 90: 587. —Milin, 1959. Zast. Bilja 51: 40.

—Finlayson, 1960. Canad. Ent. 92: 38 (*fuliginosus* (Nees)). —Szmidi, 1960. Anz. f.

Schadlinsk. 33: 20. —Szmidi, 1961. Poznan. Wyzsza Skola Roln. Roczn. Dodatek 6: 11.

—Kepler and Benjamin, 1960. Forest Sci. 6: 262. —Bobb, 1962. Brooklyn Ent. Soc., Bul. 57:

102. —Bobb, 1963. Jour. Econ. Ent. 56: 620. —Finlayson, 1963. Canad. Ent. 95: 498.

- Morris, Schroeder, and Bobb, 1963. Pine Sawfly in Va., Va. Div. Forestry. pp. 15-16.
 —Wilkes, 1964. Science 144: 305-307 (*fuliginosus* (Nees)). —Avramenko, 1964. Zashch. Rast. Vred. Boleznei 9: 53. —Pschorn-Walcher, 1964. Pflanzenschutz 31: 62. —Becker and Benjamin, 1964. Jour. Econ. Ent. 57: 356. —Bobb, 1965. Jour. Econ. Ent. 58: 926.
 —Kolonts, 1965. Erdeszeti Kutat. 61: 231. —Rose, 1965. Canad. Dept. Forestry, Forest Ent. and Path., Ann. Rpt. p. 89. —Rose and Sippell, 1966. Canad. Ent. 98: 41. —Stadnitskii, 1966. Zashch. Rast. Vred. Boleznei 11: 50. —Byers and Wilkes, 1970. Canad. Jour. Zool. 48: 959-964.

Genus DIMMOCKIA Ashmead

Dimmockia Ashmead, 1904. Carnegie Mus., Mem. 1: 357.

Type-species: *Eulophus incongruus* Ashmead. Monotypic.

Crateulophus Masi, 1917. Novitates Zool. 24: 206.

Type-species: *Crateulophus niger* Masi. Monotypic.

incongrua (Ashmead). Ont., Mass., s. to Fla., w. to Ill. Host: *Anacampsis innocuella* (Zell.), *Argyrotoxa semipurpurana* (Kearf.), *Episimus argutatus* (Clem.), *Sphecodina abbotii* (Swains.), *Sparganothis peltitana* (Rob.), *Exorista larvarum* (L.), *Winthemia datanae* (Tsn.), *Apanteles clisiocampae* Ashm., *A. congregatus* (Say), *A. melanoscelus* (Ratz.), *Psychophagus omnivorus* (Wlk.), *Sphecephaga burra* (Cress.). Almost always a secondary parasite.

Eulophus incongruus Ashmead, 1898. Ent. Soc. Wash., Proc. 4: 158. ♀, ♂.

Dimmockia botticellini Girault, 1917. New Chalcid Flies, p. 2.

Biology: Muesebeck and Dohanian, 1927. U. S. Dept. Agr., Bul. 1487: 12, 29-30. —Proper, 1934. Jour. Agr. Res. 48: 362. —Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 82.
 —Kulman, 1965. Jour. Econ. Ent. 58: 68.

Morphology: Snodgrass, 1910. U. S. Natl. Mus., Proc. 39: 66.

marylandica Girault. Md. Type of this sp. lost and no other specimens known.

Dimmockia marylandica Girault, 1920. U. S. Natl. Mus., Proc. 58: 202. ♀.

pallipes Muesebeck. Mass., Wis., Ill. Ecology: Probably always secondary. Host: *Apanteles* sp., *A. melanoscelus* (Ratz.).

Dimmockia pallipes Muesebeck, 1927. Jour. Agr. Res. 34: 333. ♀, ♂.

Biology: Muesebeck and Dohanian, 1927. U. S. Dept. Agr., Bul. 1487: 12, 30. —Forbes *et al.*, 1961. Canad. Dept. Forestry, Ann. Rpt., p. 33.

Genus DICLADOCERUS Westwood

Dicladocerus Westwood, 1832. London, Edinb. and Dublin Phil. Mag. and Jour. Sci. (3) 1: 128.

Type-species: *Dicladocerus westwoodii* Westwood. Monotypic.

Diglyphus Thomson, 1878. Hym. Scand., v. 5, p. 208. Misspelling. Preocc. by Walker, 1844.

Diglyphis Thomson, 1878. Hym. Scand., v. 5, p. 235.

Type-species: *Diglyphis aeniscapus* Thomson. Desig. by Gahan and Fagan, 1923.

Diaulius Schulz, 1906. Spolia Hym., p. 146. N. name for *Diglyphus* Thomson.

Taxonomy: Graham, 1959. Soc. Brit. Ent., Trans. 13: 180.

albitarsis (Ashmead). D. C.

Eulophus albitarsis Ashmead, 1900. Ent. News 11: 623. ♀.

dicladus (Say). Ind.

Eulophus dicladus Say, 1836. Boston Jour. Nat. Hist. 1: 273. ♀.

westwoodii Westwood. Ont.; Europe. Introduced from Europe for biological control, 1938.

Host: *Coleophora laricella* (Hbn.).

Dicladocerus Westwoodii Westwood, 1832. London, Edinb. and Dublin Phil. Mag. and Jour. Sci. (3) 1: 128. ♀, ♂.

Taxonomy: Ferriere, 1933. In Thorpe, Bul. Ent. Res. 24: 290. —Boucek, 1959. Mus. Natl. Pragae, Acta Ent. 33: 145. —Graham, 1963. Soc. Brit. Ent., Trans. 15: 180.

Biology: Thorpe, 1933. Bul. Ent. Res. 24: 277-280. —Graham, 1944. Ent. Soc. Ontario, Ann. Rpt. 74: 50-51. —Pschorn-Walcher, 1964. Commonwealth Inst. Biol. Control, Tech. Bul. 4: 27.

TRIBE EUPLECTRINI

Taxonomy: Ferriere, 1941. Bul. Ent. Res. 32: 17-48 (fauna of Europe, Asia, Africa). —Gadd, 1945. Bul. Ent. Res. 36: 331-337 (generic characters). —Boucek, 1957. In Kratochvil, Klic Zvireny CSR 2: 270. —Lin, 1963. Taiwan Mus., Quart. Jour. 16: 102 (Oriental fauna).

Genus EUPLECTRUS Westwood

Euplectrus Westwood, 1832. London, Edinb. and Dublin Phil. Mag. and Jour. Sci. (3) 1: 128.

Type-species: *Euplectrus maculiventris* Westwood. Monotypic.

Diplectron Dahlbom, 1857. Ofvers. Svenska Vetensk.-Akad., Forh. 14: 292 (no species).

—Dalla Torre, 1898. Cat. Hym., v. 5, p. 74. Seventeen species.

Type-species: *Pteromalus bicolor* Swederus. Desig. by Gahan and Fagan, 1923.

Pachyscapa Howard, 1897 (1896). Linn. Soc. London, Jour., Zool. 26: 159.

Type-species: *Pachyscapa insularis* Howard. Monotypic.

This is one of the very few chalcidoid genera that spin cocoons; these usually are placed under the emaciated body of the host larva.

Revision: Girault, 1916. Canad. Ent. 48: 265.

bicolor (Swederus). Maine, Mass., N. J.; Europe, N. Africa. Host: *Amathes c-nigrum* (L.), *Epiglea amata* (Grote).

Pteromalus Bicolor Swederus, 1795. Svenska Vetensk. Akad., Handl. 16: 204.

Taxonomy: Graham, 1963. Soc. Brit. Ent., Trans. 15: 172.

Biology: Silvestri, 1911. Lab. Zool. Gen. e Agr. Portici, Bol. 5: 308. —Lacroix, 1924. Ent. News 35: 217. —Thomsen, 1927. Dansk. Naturalhist., Meddel. 84: 73-89. —Beckwith, 1929. N. Y. Ent. Soc., Jour. 37: 415. —Bischoff, 1929. Ztschr. f. Wiss. Insektenbiol. 24: 78-82. —Steiner, 1936. Ztschr. f. Angew. Ent. 23: 212-214.

Morphology: Domenichini, 1953. Bol. Zool. Agr. e Bach. 19: 270.

catocalae Howard. N. J., Md., Ill., Mo. Host: *Catocala* sp.

Euplectrus catocalae Howard, 1885. U. S. Dept. Agr., Bur. Ent. Bul. 5: 27. ♀, ♂.

comstockii Howard. Conn., s. to Fla., w. to S. Dak., Ariz.; Cent. and S. Amer. Host: *Alabama argillacea* (Hbn.), *Autographa* sp., *Heliothis zea* (Boddie), *Plathypena scabra* (F.), *Spodoptera frugiperda* (J. E. Smith), *S. ornithogalli* (Guen.), *Trichoplusia ni* (Hbn.).

Euplectrus Comstockii Howard, 1880. Canad. Ent. 12: 158. ♂.

Biology: Schwarz, 1881. Amer. Nat. 15: 61-63. —Howard, 1914 (1913). Ent. Soc. Wash., Proc. 15: 161. —Luginbill, 1928. U. S. Dept. Agr., Tech. Bul. 34: 72-73. —Bibby, 1942. Jour. Econ. Ent. 35: 943.

frontalis Howard. Que., Ont., N. H., N. J., Va., Kans. Host: *Amathes c-nigrum* (L.).

Euplectrus frontalis Howard, 1885. U. S. Dept. Agr., Bur. Ent. Bul. 5: 27. ♀.

Biology: Fyles, 1896. Ent. News 7: 44.

hircinus (Say). Ind., Kans.

Eulophus hircinus Say, 1836. Boston Jour. Nat. Hist. 1: 274.

insularis (Howard). Fla.; West Indies, S. Amer.

Pachyscapa insularis Howard, 1896. Linn. Soc. London, Jour., Zool. 26: 159. ♂.

junctus Gahan. Fla. Host: *Isoparce cupressi* (Bdvl.).

Euplectrus junctus Gahan, 1927. U. S. Natl. Mus., Proc. 71 (4): 30. ♀.

leucotrophis Howard. Fla.

Euplectrus leucotrophis Howard, 1885. U. S. Dept. Agr., Bur. Ent. Bul. 5: 26. ♂.

marginatus Ashmead. Fla., Tenn.

Euplectus(!) *marginatus* Ashmead, 1885. Amer. Ent. Soc., Trans. 12: Proc. p. xviii. ♀, ♂.

mellipes Provancher. Que., Ont., Maine, N. H., Wis., Alaska. Host: *Coleophora laricella* (Hbn.), *Feralia jocosa* (Guen.).

Euplectrus mellipes Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 207. ♀.

Taxonomy: Burks, 1964 (1963). Canad. Ent. 95: 1258.

Biology: Guppy, 1959. Canad. Ent. 91: 426. — Evans, 1960. Ent. Soc. Amer., Ann. 53: 566.

— Evans, 1962. Canad. Ent. 94: 597.

pachyscapha Girault. Kans.

Euplectrus pachyscapha Girault, 1917. New Chalcid Flies, p. 2. ♀, ♂.

plathypenae Howard. N. J., s. to Fla., w. to Nebr., Kans., Tex.; West Indies, Cent. and S.

Amer. Host: *Diatraea saccharalis* (F.), *Heliothis zea* (Boddie), *Leucania latiuscula* (H.-S.), *Manduca sexta* (L.), *Peridroma margaritosa* (Haw.), *Plathypena scabra* (F.), *Pseudaletia unipuncta* (Haw.), *Spodoptera exigua* (Hbn.), *S. frugiperda* (J. E. Smith), *S. ornithogalli* (Guen.), *S. sunia* (Guen.).

Euplectrus(!) plathypenae(!) Howard, 1885. U. S. Dept. Agr., Bur. Ent. Bul. 5: 26. ♀, ♂.

Biology: Vickery, 1929. U. S. Dept. Agr., Tech. Bul. 138: 16-21, 42-45, 55-59. — Crumb, 1929.

U. S. Dept. Agr., Tech. Bul. 88: 155. — Simmonds, 1932. Agr. Jour. Fiji 5: 8. — Wilson, 1933.

Fla. Ent. 17: 3, 7-12. — Clausen, 1956. Pan-Pacific Ent. 32: 126. — Bennett, 1961. Tenn.

Acad. Sci., Jour. 36: 353. — Marin Acosta, 1966. Agron. Trop. 16: 155. — Burrell, 1967. Jour.

Econ. Ent. 60: 114.

semimarginatus Girault. Tex.

Euplectrus semimarginatus Girault, 1917. Deser. Hym. Chalcidoid. Variorum cum Observ. V, p. 1. ♀.

Genus EUPLECTROMORPHA Girault

Euplectromorpha Girault, 1913. Queensland Mus., Mem. 2: 276.

Type-species: *Euplectromorpha unifasciata* Girault. Orig. desig.

americana Girault. Md.

Euplectromorpha americana Girault, 1916. Insecutor Inscitiae Menstruus 4: 114. ♂.

TRIBE ELACHERTINI

Taxonomy: Boucek, 1957. In Kratochvil, Klic Zvireny CSR 2: 270.

Genus DIAULINOPSIS Crawford

Diaulinopsis Crawford, 1912. U. S. Natl. Mus., Proc. 43: 182.

Type-species: *Diaulinopsis callichroma* Crawford. Monotypic.

Achrysocharelloidea Girault, 1913. Roy Soc. So. Australia, Trans. 37: 109.

Type-species: *Achrysocharelloidea pax* Girault. Monotypic.

albiscapus (Girault). Md., Minn.

Achrysocharelloidea albiscapus Girault, 1916. Canad. Ent. 48: 336. ♀.

callichroma Crawford. Md., s. to Fla., w. to Calif.; Mexico, West Indies, Northern S. Amer.

Host: *Agromyza* sp., *Cerodontha dorsalis* (Loew), *Liriomyza* sp., *Phytobia artemisiae* (Kaltb.).

Diaulinopsis callichroma Crawford, 1912. U. S. Natl. Mus., Proc. 43: 183. ♀, ♂.

Genus ARDALUS Howard

Ardalus Howard, 1896. Linn. Soc. London, Jour., Zool. 26: 161.

Type-species: *Ardalus aciculatus* Howard. Desig. by Ashmead, 1904.

Revision: Gahan, 1922. U. S. Natl. Mus., Proc. 61 (24): 20.

insuetus (Gahan). Fla., La., Tex. Host: *Lerema accius* (A. and S.).

Euplectrus insuetus Gahan, 1914. U. S. Natl. Mus., Proc. 48: 164. ♀.

Taxonomy: Gahan, 1922. U. S. Natl. Mus., Proc. 61 (24): 19-20.

Biology: Ainslie, 1922. Fla. Ent. 6: 14.

Genus **PARAOLINX** Ashmead

Paraolinx Ashmead, 1894. Linn. Soc. London, Jour., Zool. 25: 166.

Type-species: *Paraolinx lineatifrons* Ashmead. Monotypic.

Leucodesmia Howard, 1895. U. S. Dept. Agr., Insect Life 7: 403.

Type-species: *Leucodesmia typica* Howard. Monotypic.

Revision: Miller, 1964. Canad. Ent. 96: 1352-1362.

canadensis Miller. Que., Maine, Fla., Ohio, Calif.; Mexico. Ecology: An external parasite of gelechiid larvae. Host: *Coleotechnites* sp., *C. apictripunctella* (Clem.), *Homadaula anisocentra* Meyrick.

Paraolinx canadensis Miller, 1964. Canad. Ent. 96: 1354. ♀, ♂.

taedae Miller. N. C., Ark. Host: *Rhyacionia frustrana* (Comst.).

Paraolinx taedae Miller, 1964. Canad. Ent. 96: 1356. ♀, ♂.

typica (Howard). Va., N. C., Fla., La., Ariz., Calif.; West Indies. Host: *Laetilia coccidivora* (Comst.), *Paramyelois transitella* (Walk.), *Pyroderces rileyi* (Wlsm.).

Leucodesmia typica Howard, 1895. U. S. Dept. Agr., Insect Life 7: 402. ♀, ♂.

Leucodesmia nigriventris Girault, 1916. U. S. Natl. Mus., Proc. 51: 46. ♀.

Taxonomy: Miller, 1964. Canad. Ent. 96: 1358.

Genus **STENOMESIUS** Westwood

Stenomesius Westwood, 1833. London, Edinb. and Dublin Phil. Mag. and Jour. Sci. (3) 3: 343.

Type-species: *Stenomesius pulchellus* Westwood. Desig. by Westwood, 1840.

harrisinae Ashmead. N. J., Fla. Host: *Harrisina americana* (Guer.).

Stenomesius harrisinae Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 200. ♀.

levana (Walker). Fla.

Elachestus levana Walker, 1847. Ann. and Mag. Nat. Hist. (1) 20: 27. ♀.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 145 (lectotype designated).

Genus **MIOTROPIS** Thomson

Miotropis Thomson, 1878. Hym. Scand., v. 5, pp. 187, 197.

Type-species: *Miotropis sulcicristata* Thomson. Desig. by Ashmead, 1904.

Mionotropis Schulz, 1906. Spolia Hym., p. 143. Emend.

Stenomesioideus Ashmead, 1904. Carnegie Mus., Mem. 1: xi, 355, 389.

Type-species: *Stenomesioideus melleus* Ashmead. Monotypic.

Stenomesioidea Girault, 1916. U. S. Natl. Mus., Proc. 51: 43.

Type-species: *Stenomesioidea mellea* Girault. Orig. desig.

melleus Ashmead. D. C. Host: *Coleophora caespititiella* Zell.

Stenomesioideus melleus Ashmead, 1904. Carnegie Mus., Mem. 1: xi, 355. ♀.

Stenomesioidea mellea Girault, 1916. U. S. Natl. Mus., Proc. 51: 44. ♀.

Genus **ELACHERTUS** Spinola

Elachertus Spinola, 1811. Paris Mus. d'Hist. Nat., Ann. 17: 151.

Type-species: *Diplolepis lateralis* Spinola. Desig. by Gahan and Fagan, 1923.

Microterus Spinola, 1811. Paris Mus. d'Hist. Nat., Ann. 17: 151.

Type-species: *Diplolepis petiolata* Spinola. Desig. by Gahan and Fagan, 1923.

Elachestus Nees, 1834. Hym. Ichn. Aff. Monog., v. 2, p. 135. Emend.

Elachistus Foerster, 1856. Hym. Stud., v. 2, p. 73. Emend.

Epardalus Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 5.

Type-species: *Elachistus cidariae* Ashmead. Orig. desig.

aeneoniger Girault. Ont., N. Y., Ohio, Wis., Minn., B. C., Oreg. Host: *Ancylys comptana fragariae* (W. and R.), *Argyrotaenia pinatubana* (Kearf.), *Argyresthia oreasella* Clem.

Choristoneura fumiferana (Clem.).

Elachistus aeneoniger Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 2. ♀.

cacoeeciae Howard. N. H., Mass., N. J., Pa., D. C., Va., Mo., Utah, Oreg. Host: *Ancyliis comptana fragariae* (W. and R.), *Archips argyrosipilus* (Walk.), *Choristoneura rosaceana* (Harr.), *Argyrotaenia velutinana* (Walk.), *Heterocampa guttivitta* (Walk.), *Hyphantria cunea* (Drury), *Schizura unicornis* (Smith); *Eulophus orgyiae* (Fitch).
Elachistus cacoeeciae Howard, 1885. U. S. Dept. Agr., Bur. Ent. Bul. 5: 28. ♂.

Biology: Carolin and Coulter, 1959. Jour. Econ. Ent. 52: 552.

cidariae Ashmead. N. H., Mass. Host: *Lygris diversilineata* (Hbn.).

Elachistus cidariae Ashmead, 1898. Ent. Soc. Wash., Proc. 4: 157. ♀.

Taxonomy: Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 5.

coxalis Howard. D. C., Va., Mich., Calif. Host: *Paralobesia viteana* (Clem.), *Parornix geminatella* (Pack.).

Elachistus coxalis Howard, 1885. U. S. Dept. Agr., Bur. Ent. Bul. 5: 28. ♀.

Biology: Hill and Hough, 1957. Va. Agr. Expt. Sta., Tech. Bul. 130: 16.

glacialis Ashmead. Colo., Alaska, Wash., Oreg. Host: *Barbara colfariana* (Kearf.), *Mellisopus latiferreanus* (Wlsm.).

Elachistus glacialis Ashmead, 1902 Wash. Acad. Sci., Proc. 4: 147. ♀, ♂.

Biology: Keen, 1958. U. S. Dept. Agr., Tech. Bul. 1169: 94.

hyphantriae Crawford. Mass., N. Y., N. J., Ark., Tex., Colo. Host: *Hyphantria cunea* (Drury), *Orgyia definita* (Pack.).

Elachertus hyphantriae Crawford, 1911. U. S. Natl. Mus., Proc. 39: 622. ♀.

Biology: Schaffner and Griswold, 1934. U. S. Dept. Agr., Misc. Pub. 188: 37, 155. —Raizenne, 1952. Canad. Div. Forest Biol., Forest Lep. S. Ont. and Par., p. 31.

louisiana (Girault). La.

Epardalus louisiana Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 5. ♀.

marylandicus Girault. Mass., Conn., N. J., Md. Host: *Diacrisia virginica* (F.), *Hyphantria cunea* (Drury).

Elachistus marylandicus Girault, 1916. Brooklyn Ent. Soc., Bul. 11: 112. ♀.

Biology: Schaffner and Griswold, 1934. U. S. Dept. Agr., Misc. Pub. 188: 36, 155. —Swain, 1937. Ent. News 48: 246.

multidentatus (Girault). Fla.

Parentedon multidentatus Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 5. ♀.

pini Gahan. Maine, Vt., Mass., Va., Mich. Host: *Dioryctria* sp., *Rhyacionia frustrana* (Comst.).
Elachertus pini Gahan, 1927. Jour. Agr. Res. 34: 547. ♀, ♂.

Biology: Cushman, 1927. Jour. Agr. Res. 34: 617.

proteoteratis Howard. Que., Ont., Conn., N. J., Pa., Mich., Mo., Idaho, Ariz., B. C., Calif. Host: *Proteoteras aesculana* Riley, *Stenomoma algidella* (Walk.).

Elachistus proteoteratis Howard, 1885. U. S. Dept. Agr., Bur. Ent. Bul. 5: 27. ♀.

Euplectrus viridaeneus Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 207; errata. ♀.

Taxonomy: Burks, 1964 (1963). Canad. Ent. 95: 1252.

Biology: Waddell, 1952. Ent. Soc. B. C., Proc. 48: 88.

spilosomatis Howard. N. J. Host: *Diacrisia virginica* (F.). Described only by a figure of pupae.
Elachistus spilosomatis Howard, 1891. U. S. Dept. Agr., Insect Life 4: 195.

Genus HYSSOPUS Girault

Hyssopus Girault, 1916. Canad. Ent. 48: 115.

Type-species: *Hyssopus thymus* Girault. Monotypic.

Hyssopiscus Ghesquiere, 1946. Rev. Zool. Bot. Africaines 34: 370. N. name, unnecessarily proposed.

- benefactor** (Crawford). N. Y., Md., Ohio. B. C. Host: *Petrova albicapitana* (Busck), *P. comstockiana* (Fern.), *P. metallica* (Busck), *P. virginiana* (Busck).
Elachertus benefactor Crawford, 1912. U. S. Natl. Mus., Proc. 43: 182. ♀.
- evetriae** (Girault). Minn., Idaho, Oreg. Host: *Barbara colfaxiana taxifoliella* (Busck), *Melissopus latiferraeus* (Wlsm.), *Petrova albicapitana* (Busck), *P. wenzeli* (Kearf.).
Elachistus evetriae Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 1. ♀.

Biology: Dohanian, 1942. Jour. Econ. Ent. 35: 837, 840. — Miller and Altmann, 1958. Ohio Jour. Sci. 58: 278-280. — Keen, 1958. U. S. Dept. Agr., Tech. Bul. 1169: 95.

- johannseni** (Crawford). Maine, Va., Miss. Host: *Laspeyresia* sp.
Elachertus johannseni Crawford, 1912. U. S. Natl. Mus., Proc. 43: 181. ♀.

novus Girault. Calif.

Hyssopus novus Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 3. ♀.

- rhyacioniae** Gahan. Ont., s. to Fla., w. to Mich., Ark., Tex. Host: *Dioryctria abietella* D. and S., *D. amatella* (Hulst), *D. cambicola* (Dyar), *D. zimmermani* (Grote), *Rhyacionia frustrana* (Comst.).

Hyssopus rhyacioniae Gahan, 1927. Jour. Agr. Res. 34: 546. ♀, ♂.

Biology: Cushman, 1927. Jour. Agr. Res. 34: 617. — Underhill, 1943. Va. Agr. Expt. Sta., Bul. 349: 12.

- sanninoideae** (Girault). Conn., Va., Ark. Host: *Sanninoidea extiosa* (Say), *Synanthedon scitula* (Harr.).

Elachistus sanninoideae Girault, 1917. Brooklyn Ent. Soc., Bul. 12: 85. ♀, ♂.

Biology: Underhill, 1935. Jour. Econ. Ent. 28: 396.

- thymus** Girault. Ont. and N. Y., s. to Fla., w. to Idaho and Calif. Host: *Dioryctria auranticella* (Grote), *D. xanthoebares* Dyar, *D. zimmermani* (Grote), *Petrova comstockiana* (Fern.), *P. wenzeli* (Kearf.), *Rhyacionia buoliana* (Schiff.), *R. frustrana* (Comst.), *R. rigidana* (Fern.).

Hyssopus thymus Girault, 1916. Canad. Ent. 48: 115. ♀.

Biology: Slate, 1936. Conn. Agr. Expt. Sta., Bul. 381: 181. — Friend, Plumb, and Hieock, 1938. Jour. Econ. Ent. 31: 511. — Miller, 1953. Ohio Jour. Sci. 53: 61-62. — Miller and Altman, 1958. Ohio Jour. Sci. 58: 278-280. — Keen, 1958. U. S. Dept. Agr., Tech. Bul. 1169: 95. — Watson and Arthur, 1959. Canad. Ent. 91: 480-484. — Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 84. — Hartman and Kulman, 1962. Jour. Econ. Ent. 55: 1007. — Syme, 1970. Canad. Ent. 102: 1523-1527. — Syme, 1971. Canad. Ent. 103: 1691-1696. — Purrington and Uleman, 1972. Ent. Soc. Amer., Ann. 65: 280-281.

Genus PSEUDOLYNX Girault

Pseudolynx Girault, 1916. Ent. News 27: 152.

Type-species: *Pseudolynx io* Girault. Orig. desig.

- flavimaculata** Girault. Minn.

Pseudolynx flavimaculatus Girault, 1916. Ent. News 27: 153. ♀.

- io** Girault. Mass.

Pseudolynx io Girault, 1916. Ent. News 27: 152. ♀.

- marilandia** Girault. Md.

Pseudolynx marilandia Girault, 1917. Chalcidoidea Nova Marilandensis [I]. p. 1. ♀.

Genus MIROLYNX Girault

Mirolynx Girault, 1916. U. S. Natl. Mus., Proc. 51: 131.

Type-species: *Mirolynx flavitibiae* Girault. Orig. desig.

- flavitibiae** Girault. Calif.

Mirolynx flavitibiae Girault, 1916. U. S. Natl. Mus., Proc. 51: 131. ♀, ♂.

Genus GROTIUSOMYIA Girault

Grotiusomyia Girault, 1917. Psyche 24: 95.

Type-species: *Grotiusomyia flavicornis* Girault. Orig. desig.

flavicornis Girault, D. C., N. C. Ecology: Parasitic on pyralid leaf miner on oak.

Grotiusomyia flavicornis Girault, 1917. Psyche 24: 95. ♀.

Taxonomy: Girault, 1918. Ent. News 29: 126.

Genus **APTEROLOPHUS** Gahan

Apterolophus Gahan, 1919. Ent. Soc. Wash., Proc. 21: 3.

Type-species: *Apterolophus pulchricornis* Gahan. Monotypic.

pulchricornis Gahan. N. Y., S. C., Ind. Ecology: Taken sifting treehole litter.

Apterolophus pulchricornis Gahan, 1919. Ent. Soc. Wash., Proc. 21: 3. ♀.

Genus **GIRAULTIA** Gahan and Fagan

Cirrospilopsis Girault, 1915. Queensland Mus., Mem. 3: 263. Preocc. by Brethes, 1913.

Type-species: *Cirrospilopsis nigrivariegatus* Girault. Orig. desig.

Giraultia Gahan and Fagan, 1923. U. S. Natl. Mus., Bul. 124: 66. N. name.

fuscipennis (Girault). Md.

Cirrospilopsis fuscipennis Girault, 1916. Ent. Soc. Amer., Ann. 9: 293. ♀.

metallicus (Girault). Md.

Cirrospilopsis metallicus Girault, 1917. Psyche 24: 100. ♀.

sapientia (Girault). D. C.

Cirrospilopsis sapientia Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. V, p. 13. ♀.

Genus **CIRROSPILOIDEUS** Ashmead

Cirrospiloideus Ashmead, 1904. Carnegie Mus., Mem. 1: 354, 355.

Type-species: *Miotropis platynotae* Howard. Orig. desig.

Alophus Ashmead, 1904. Carnegie Mus., Mem. 1: 353, 519. Preocc. by Schoenherr, 1826.

Type-species: *Alophus flavus* Ashmead. Orig. desig.

Alophomyia Ashmead, 1904. Ent. Soc. Wash., Proc. 6: 126. N. name.

Diglyphomorphomyia Girault, 1913. Queensland Mus., Mem. 2: 281.

Type-species: *Diglyphomorphomyia nigriscutellum* Girault. Orig. desig.

Sympiesomorphelleus Girault, 1913. Arch. f. Naturgesch. 79A (6): 75.

Type-species: *Sympiesomorphelleus suttneri* Girault. Orig. desig.

bicoloriceps (Girault). La. Host: *Keiferia inconspicua* (Murtf.).

Sympiesomorphelleus bicoloriceps Girault, 1919. Ent. Soc. Amer., Ann. 9: 302. ♀.

californicus (Girault). Calif.

Sympiesomorphelleus californicus Girault, 1916. Jour. Ent. and Zool. 8: 119. ♀.

johnsoni Girault. Maine, D. C., Ill.

Cirrospiloideus johnsoni Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 7. ♀.

mediolineatus Girault. Md.

Cirrospiloideus mediolineatus Girault, 1917. Chalcidoidea Nova Marilandensis. II, p. 2. ♀.

Taxonomy: Girault, 1920. U. S. Natl. Mus., Proc. 58: 198.

nigriceps (Girault). Tex.

Sympiesomorphelleus nigriceps Girault, 1916. U. S. Natl. Mus., Proc. 51: 44. ♀.

nigriprothorax (Girault). Kans.

Sympiesomorphelleus nigriprothorax Girault, 1916. U. S. Natl. Mus., Proc. 51: 131. ♀.

platynotae (Howard). Fla. Host: *Platynota rostrana* (Walk.).

Miotropis platynotae Howard, 1885. In Hubbard, Insects Affecting the Orange, p. 217. ♀, ♂.

seminigriiventris Girault. Pa., Ohio. Host: *Eurukuttarus confederata* (Grote).

Cirrospiloideus seminigriiventris Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. V, p. 1. ♀.

Genus PECKELACHERTUS Yoshimoto

Peckelachertus Yoshimoto, 1970. Canad. Ent. 102: 908.

Type-species: *Peckelachertus diprioni* Yoshimoto. Orig. desig.

diprioni Yoshimoto. Que. Host: *Gilpinia frutetorum* (F.).

Peckelachertus diprioni Yoshimoto, 1970. Canad. Ent. 102: 908. ♀, ♂.

Genus CIRROSPILUS Westwood

Cirrospilus Westwood, 1832. London, Edinb. and Dublin Phil. Mag. and Jour. Sci. (3) 1: 128.

Type-species: *Cirrospilus elegantissimus* Westwood. Monotypic.

Pseudiglyphomyia Girault, 1913. Queensland Mus., Mem. 2: 267.

Type-species: *Pseudiglyphomyia biguttata* Girault. Orig. desig.

Atoposomoidea Howard, 1910. U. S. Dept. Agr., Bur. Ent., Tech. Bul. 19: 9.

Type-species: *Atoposomoidea ogimae* Howard. Monotypic.

Plesiospilus Ferriere, 1953. Univ. Bologna, Ist. di Ent., Bol. 19: 398.

Type-species: *Eulophus unistriatus* Foerster. Orig. desig.

Taxonomy: Delucchi, 1958. Entomophaga 3: 253. — Boucek, 1959. Mus. Natl. Pragae, Acta Ent. 33: 172 (subgenera).

americanus (Girault). Ohio.

Pseudiglyphomyia americana Girault, 1916. U. S. Natl. Mus., Proc. 51: 43, 45, 48. ♀.

cinctithorax (Girault). N. B., Que., Ont., Maine, Mass., Ill., Wis. Host: *Argyresthia freyella*

Wlshrn., *Bucculatrix ainsliella* Murtf., *B. canadensisellea* Chamb., *Coleophora*

fuscedinella Zeller, *C. pruniella* Clem., *Lithocolletis salicifoliella* Clem., *L.*

tremuloidiella Braun, *Phyllocnistis populiella* Chamb.; *Heterarthrus nemoratus* (Fall.),

Meteorus versicolor (Wesm.).

Pseudiglyphomyia cinctithorax Girault, 1916. U. S. Natl. Mus. Proc. 51: 45. ♀.

Biology: Proper, 1934. Jour. Agr. Res. 48: 366. — Doner, 1936. Ent. Soc. Amer., Ann. 29: 226.

— Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 84.

columbia (Girault). D. C.

Pseudiglyphomyia columbia Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. V, pp. 6, 7. ♀.

coptodiscae (Girault). Maine, s. to N. J., Ky. Host: *Coptodisca splendoriferella* (Clem.).

Pseudiglyphomyia coptodiscae Girault, 1916. Canad. Ent. 48: 266. ♀, ♂.

eunapius Walker. Fla.

Cirrospilus Eunapius Walker, 1847. Ann. and Mag. Nat. Hist. (1) 20: 27. ♀.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 143 (lectotype designated).

flavicinctus Riley. Maine, s. to D. C., w. to Kans. and Wash. Host: *Archips semiferanus*

(Walk.), *Bucculatrix ainsliella* Murtf., *B. pomifoliella* Clem., *Coleophora fuscedinella*

Zell., *C. malivorella* Riley, *C. pruniella* Clem.; *Heterarthrus nemoratus* (Fallen).

Cirrospilus flavicinctus Riley, 1883. In Lintner, First Ann. Rpt. Injurious Ins. N. Y., p. 159. ♀, ♂.

Cirrospilus flavomaculatus Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 341. ♀.

Biology: Christensen, 1934. Wis. Agr. Expt. Sta., Bul. 428: 101. — Doner, 1936. Ent. Soc.

Amer., Ann. 29: 233-234. — Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 84.

flavifacies (Girault). Calif.

Pseudiglyphomyia flavifacies Girault, 1916. U. S. Natl. Mus., Proc. 51: 43. ♀.

flavoviridis Crawford. Utah, Ariz., Nev., Calif. Host: *Agromyza parvicornis* Loew, *Cerodontha dorsalis* (Loew), *Liriomyza* sp.

Cirrospilus flavoviridis Crawford, 1913. U. S. Natl. Mus., Proc. 45: 317. ♀, ♂.

giraulti Peck. U. S. Host: *Bucculatrix* sp.

Pseudiglyphomyia pulchra Girault, 1916. U. S. Natl. Mus., Proc. 51: 45. ♀. Preocc. by Masi, 1911.

Cirrospilus giraulti Peck, 1951. U. S. Dept. Agr., Agr. Monog. 2: 458. N. name.

- inimicus** Gahan. Ill. Host: *Gambrus extrematis* (Cress.).
Cirrospilus inimicus Gahan, 1934. Ent. Soc. Wash., Proc. 36: 123. ♀, ♂.
 Biology: Marsh, 1938. N. Y. Ent. Soc., Jour. 46: 27-29.
- marilandi** Girault. Conn., Md., N. C. Host: *Coptodisca* sp.
Cirrospilus marilandi Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 4. ♀.
- marilandicus** (Girault). Md.
Pseudiglyphomyia marilandica Girault, 1917. Psyche 24: 91. ♀.
- niger** Howard. N. J. Host: *Vaessa atalanta* (L.); *Eulophus* sp.
Cirrospilus niger Howard, 1889. In Scudder, Butterflies of Eastern U. S. and Canada, p. 1872. ♀, ♂.
- nigrivariegata** (Girault). Ind., Iowa, Kans., S. Dak. Host: *Parornix geminatella* (Pack.),
Tischeria malifoliella (Clem.).
Pseudiglyphomyia nigrivariegata Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 7. ♀.
- ocellatus** Girault. Que., Conn., Ill. Host: *Bucculatrix canadensisella* (Chamb.).
Cirrospilus ocellatus Girault, 1917. U. S. Natl. Mus., Proc. 53: 446. ♀.
- ovisugosus** Crosby and Matheson. N. Y. Host: *Poecilocapsus lineatus* (F.).
Cirrospilus ovisugosus Crosby and Matheson, 1915. Canad. Ent. 47: 181. ♀, ♂.
- pictus** (Nees). Que., Ont., Maine; Europe. Introduced from Europe for biological control; first liberated in Ontario in 1935. Host: *Coleophora laricella* (Hbn.); *Fenusa pusilla* (Lep.), *Heterarthrus nemoratus* (Fallen).
Eulophus pictus Nees, 1834. Hym. Ichn. Aff. Monog., v. 2, p. 165. ♀, ♂.
 Taxonomy: Ferriere, 1933. In Thorpe, Bul. Ent. Res. 24: 289-290.
 Biology: Dowden, 1941. U. S. Dept. Agr., Tech. Bul. 757: 8-9, 37-41. —Sundby, 1958 (1957). Norsk. Ent. Tidsk., Sup. 2, pp. 18-21.
- pulcheria** Girault. Kans.
Cirrospilus pulcheria Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. V, p. 8. ♀.
 Taxonomy: Girault, 1920. U. S. Natl. Mus., Proc. 58: 195.
- purpureus** Ashmead. Fla.
Cirrospilus purpureus Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 133. ♀.
- unguttatipennis** (Girault). Calif.
Pseudiglyphomyia unguatipennis Girault, 1916. Jour. Ent. and Zool. 8: 120. ♀.

Genus ZAGRAMMOSOMA Ashmead

- Hippocephalus* Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App., p. VII. Preocc. by Swainson, 1839.
 Type-species: *Hippocephalus multilineatus* Ashmead. Monotypic.
- Zagrammosoma* Ashmead, 1904. Carnegie Mus., Mem. 1: 354. N. name.
Zagrammatosoma Schulz, 1906. Spolia Hym., p. 142. Emend.
Atoposoma Masi, 1907. Lab. Zool. Gen. e. Agr. Portici, Bol. 1: 276.
 Type-species: *Atoposoma variegatum* Masi. Monotypic.
- Taxonomy: Boucek, 1959. Mus. Natl. Pragae, Acta Ent. 33: 172-173 (subgenus of *Cirrospilus*).
- americanum** Girault. Colo., Ariz., Calif. Host: *Coleotechnites milleri* (Busck).
Zagrammosoma americana Girault, 1916. U. S. Natl. Mus., Proc. 51: 125, 126. ♀.
- centrolineatum** Crawford. Calif. Host: *Lithocolletis mediodorsella* (Braun).
Zagrammosoma centrolineata Crawford, 1913. U. S. Natl. Mus., Proc. 45: 256. ♀.
- flavolineatum** Crawford. Colo., Calif. Host: *Phthorimaea operculella* (Zell.).
Zagrammosoma flavolineata Crawford, 1913. U. S. Natl. Mus., Proc. 45: 255. ♀.

- interlineatum** Girault. Mass., D. C., Fla., Ohio. Host: *Exoteleia pinifoliella* (Chamb.), *Lithocolletis cincinnatiella* (Chamb.).
Zagrammosoma interlineata Girault, 1916. U. S. Natl. Mus., Proc. 51: 125. ♀.
 Biology: Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 84.
- mirum** Girault. Calif. Host: *Lithocolletis crataegella* Clem.; *Liriomyza pictella* (Thomson).
Zagrammosoma mira Girault, 1916. Jour. Ent. and Zool. 8: 119. ♀.
- multilineatum** (Ashmead). Md., D. C., S. C., W. Va., Fla., Ohio, Ind., La., Kans. Host: *Lithocolletis* sp., *Parornix geminatella* (Pack.), *Phyllocnistis magnoliella* Ashm., *Tischeria malifoliella* (Clem.); *Agromyza parvicornis* Loew.
Hippocephalus multilineatus Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App. p. VII. ♀, ♂.
Zagrammosoma multilineata var. *punicea* Girault, 1911. Arch. f. Naturgesch. 77 (1), sup. 2: 123. ♀. N. syn.
- Biology: Phillips, 1914. Jour. Agr. Res. 2: 27.
- nigrolineatum** Crawford. Maine, Calif. Host: *Argyresthia thuicella* (Pack.).
Zagrammosoma nigrolineata Crawford, 1913. U. S. Natl. Mus., Proc. 45: 257. "♀" = ♂.
- sanguineum** Girault. Colo.
Zagrammosoma sanguinea Girault, 1916. U. S. Natl. Mus., Proc. 51: 133. ♀.

Genus MIRZAGRAMMOSOMA Girault

- Mirzagrammosoma* Girault, 1915. Ent. Soc. Amer., Ann. 8: 279.
 Type-species: *Mirzagrammosoma lineaticeps* Girault. Monotypic.
- lineaticeps** Girault. Fla.; Cent. America, West Indies. Host: *Leucoptera coffeella* (Guerin); *Liriomyza archboldi* Frost.
Mirzagrammosoma lineaticeps Girault, 1915. Ent. Soc. Amer., Ann. 8: 279. ♀.

Genus AULOGYMNUS Foerster

- Aulogymnus* Foerster, 1851. Naturh. Ver. Rheinlande, Verh. 8: 24.
 Type-species: *Aulogymnus aceris* Foerster. Monotypic.
- Olynx* Foerster, 1856. Hym. Stud., v. 2, p. 72.
 Type-species: *Ichneumon gallarum* Linnaeus. Orig. desig.
- Taxonomy: Boucek, 1965. Mus. Natl. Pragae, Acta Ent. 36: 551.
- minyas** (Walker). Fla.
Eulophus Minyas Walker, 1847. Ann. and Mag. Nat. Hist. (1) 20: 26. ♀.
- Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 146 (lectotype designated).

SUBFAMILY ENTEDONTINAE

TRIBE EUDERINI

- Taxonomy: Erdos, 1956. Rov. Kozlem. (n. s.) 9: 2 (tribe). —Graham, 1959. Soc. Brit. Ent., Trans. 13: 203 (subfamily). —Boucek, 1963. Beitr. z. Ent. 13: 257 (subfamily).

Genus ACRIAS Walker

- Acrias* Walker, 1847. Ann. and Mag. Nat. Hist. (1) 20: 29.
 Type-species: *Acrias nileus* Walker. Monotypic.
- Taxonomy: Boucek, 1963. Beitr. z. Ent. 13: 258.
- nileus** Walker. Pa., Fla.
Acrias nileus Walker, 1847. Ann. and Mag. Nat. Hist. (1) 20: 29. ♀.
- Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 146.

Genus EUDERUS Haliday

- Euderus* Haliday, 1844 (1843). Ent. Soc. London, Trans. 3: 298.
 Type-species: *Entedon amphis* Walker. Monotypic.

Secodella Girault, 1913. Arch. f. Naturgesch. 79A (6): 48.

Type-species: *Secodella lineata* Girault. Monotypic.

Omphalomorpha Girault, 1913. Arch. f. Naturgesch. 79A (6): 103.

Type-species: *Omphalomorpha viridis* Girault. Monotypic.

Allomphale Silvestri, 1914. Lab. Zool. Gen. e. Agr. Portici, Bol. 9: 217.

Type-species: *Allomphale cavasolae* Silvestri. Monotypic.

Secodelloidea Girault, 1917. Speciosissima Genera Nova Eulophidorum, p. 2.

Type-species: *Secodella rugosa* Crawford. Orig. desig.

Euderus subg. *Euderoides* Yoshimoto, 1971. Canad. Ent. 103: 550.

Type-species: *Euderus (Euderoides) purpureus* Yoshimoto. Orig. desig.

Euderus subg. *Neoederus* Yoshimoto, 1971. Canad. Ent. 103: 552.

Type-species: *Euderus (Neoederus) viridilineatus* Yoshimoto. Orig. desig.

Euderus subg. *Leipocrossus* Yoshimoto, 1971. Canad. Ent. 103: 555.

Type-species: *Entedon (Euderus) herillus* Walker. Orig. desig.

Revision: Crawford, 1915. Ent. Soc. Wash., Proc. 17: 142-144 (*Secodella*). —Girault, 1924.

Insecutor Inscitiae Menstruus 12: 94. —Erdos, 1951. Acta Biol. Acad. Sci. Hung. 2: 202

(Hungarian fauna). —Boucek, 1963. Beitr. z. Ent. 13: 257-267 (Palearctic fauna).

—Yoshimoto, 1971. Canad. Ent. 103: 541-578.

Taxonomy: Ferriere, 1931. Bul. Ent. Res. 22: 134. —Peck, 1963. Canad. Ent., Sup. 30: 197.

aerobasis (Crawford). N. S., Que., Ont., N. Y., W. Va., Ga., Fla., Tex., Alta., Idaho. Host:

Aerobasis caryae (Grote), *A. juglandis* (LeB.), *Laspeyresia pomonella* (L.).

Secodella aerobasis Crawford, 1915. Ent. Soc. Wash., Proc. 17: 143. ♀, ♂.

Biology: Wakeland, 1929. Jour. Econ. Ent. 22: 985.

alaskensis Yoshimoto. Alaska.

Euderus alaskensis Yoshimoto, 1971. Canad. Ent. 103: 576. ♀.

albitarsis (Zetterstedt). N. S., Que., Ont., Va., W. Va., Man., Sask., Alta.; Europe. Introduced from Europe for biological control in the early 1930's; first recovered in Ontario. Host:

Coleophora laricella (Hbn.).

Entedon albitarsis Zetterstedt, 1838. Ins. Lapp., v. 1, p. 430. ♀.

Eutedon Mithras Walker, 1839. Monog. Chalcid., v. 1, p. 93. ♂.

Entedon Amphis Walker, 1839. Monog. Chalcid., v. 1, p. 106. ♀.

Euderus viridis Thomson, 1878. Hym. Scand., v. 5, p. 278. ♀.

Taxonomy: Boucek, 1963. Beitr. z. Ent. 13: 262.

Biology: Arru, 1962. Bol. Zool. Agr. e Bach, (2) 4: 275.

argyresthiae (Crawford). N. B., Que., s. to Fla., w. to B. C., Wash., Oreg., Calif. Host:

Argyresthia alternatella Kearf., *A. laricella* Kearf., *Coleotechnites milleri* (Busck),

Rhyacionia frustrana (Comst.), *Spilonota ocellana* (D. and S.).

Secodella argyresthiae Crawford, 1915. Ent. Soc. Wash., Proc. 17: 100. ♀, ♂.

Biology: Furniss, 1942. Jour. Econ. Ent. 35: 858. —Eidt and Sippell, 1961. Canad. Ent. 93: 17.

—Legner and Oatman, 1963. Jour. Econ. Ent. 56: 731. —Eikenbary and Fox, 1965. S. C.

Agr. Expt. Sta., Tech. Bul. 1017: 6.

californicus Yoshimoto. Calif.

Euderus (Leipocrossus) californicus Yoshimoto, 1971. Canad. Ent. 103: 558. ♀.

canadensis Yoshimoto. Man., N. W. T.

Euderus (Secodelloidea) canadensis Yoshimoto, 1971. Canad. Ent. 103: 548. ♀, ♂.

chillcotti Yoshimoto. Ont., Sask. Host: *Agrilus eriddlei* Frost.

Euderus chillcotti Yoshimoto, 1971. Canad. Ent. 103: 565. ♀.

crawfordi Peck. Ariz., Calif. Ecology: Emerged from cynipid galls. Host: *Dryocosmus coccii* (Bass.), *Plagiotrochus suberi* Weld.

Secodella viridis Crawford, 1915. Ent. Soc. Wash., Proc. 17: 144. ♀, ♂. Preocc. by Girault, 1913.

Euderus crawfordi Peck, 1951. U. S. Dept. Agr., Agr. Monog. 2: 462. N. name.

cushmani (Crawford). N. S., N. B., Que., s. to N. Y., w. to Sask. and Idaho. Host: *Anarsia lineatella* Zell., *Argyresthia laricella* Kft., *A. thuella* (Pack.), *Coleophora fuscadinella* Zell., *C. laricella* (Hbn.), *C. pruniella* Clem., *Dioryctria zimmermani* (Grote), *Epiblema strenuatum* (Walk.), *Epinotia nanana* (Treit.), *Grapholitha packardii* (Zell.), *Paralobesia viteana* (Clem.), *Proteoteras willingana* (Kft.), *Spilonota ocellana* (D. and S.); *Mastrus laricellae* (Mason).

Secodella cushmani Crawford, 1915. Ent. Soc. Wash., Proc. 17: 142. ♀, ♂.

Biology: Baldus, 1959. Ill. Biol. Monog. 26: 74. —Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 85. —Eidt and Sippell, 1961. Canad. Ent. 93: 16. —Eidt, 1962. Canad. Ent. 94: 34 (hyperparasite). —Davault and Ducharme, 1966. Canad. Ent. 98: 697.

elongatus Ashmead. Fla. Type fragmentary; unrecognizable.

Euderus elongatus Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 201. ♀.

fuscadinellae Yoshimoto. N. B., Ont. Host: *Coleophora fuscadinella* Zell.

Euderus fuscadinellae Yoshimoto, 1971. Canad. Ent. 103: 565. ♀.

glaucus Yoshimoto. Ont., Fla., Tex. Host: *Epiblema obfuscanum* Dyar.

Euderus glaucus Yoshimoto, 1971. Canad. Ent. 103: 564. ♀.

herillus (Walker). Va., Ga., Fla. Host: *Desmia funeralis* (Hbn.).

Entedon (*Euderus*) *Herillus* Walker, 1847. Ann. and Mag. Nat. Hist. (1) 20: 23. ♀.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 144.

lividus (Ashmead). Fla. This species has been misidentified from India, and has been confused with *Chrysocharis lividus* Ashmead in Nearctic literature. The latter is a quite different, Neotropical species, the type of which may be in the British Museum; it is catalogued in the U. S. N. M. collection, but is missing.

Oxyomorpha livida Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 135. ♀.

magnificus Yoshimoto. N. C.

Euderus (*Neoeuderus*) *magnificus* Yoshimoto, 1971. Canad. Ent. 103: 554. ♀.

marylandicus Girault. Md. Type fragmentary; unrecognizable.

Euderus marylandicus Girault, 1917. Chalcidoidea Nova Marilandensis. II, p. 1. ♀.

masoni Yoshimoto. Ont., Va., S. C., Fla., Calif.

Euderus masoni Yoshimoto, 1971. Canad. Ent. 103: 562. ♀.

multilineatus (Girault). Tex.

Secodes multilineatus Girault, 1917. Brooklyn Ent. Soc., Bul. 12: 85. ♀.

pecki Yoshimoto. Que., Man.

Euderus pecki Yoshimoto, 1971. Canad. Ent. 103: 561. ♀.

purpureus Yoshimoto. Ont., Va. Host: *Grapholitha molesta* (Busck).

Euderus (*Enderoides*) *purpureus* Yoshimoto, 1971. Canad. Ent. 103: 550. ♀.

rubricapus (Girault). N. S., Que., Ont., Mass., N. Y., Md., Va., W. Va., N. C.

Secodella rugosus var. *rubricapus* Girault, 1916. Soc. Ent. 31: 36. ♀.

Taxonomy: Burks, 1967. U. S. Dept. Agr., Agr. Monog., Sup. 2: 232 (changed to species).

rugosus (Crawford). N. S., Que., Ont., s. to Fla., w. to Minn., Kans., Okla.

Secodella rugosus Crawford, 1915. Ent. Soc. Wash., Proc. 17: 143. ♀.

saperdae Miller. Ont., Minn., Sask. Host: *Saperda moesta* LeC.

Euderus saperdae Miller, 1965. Canad. Ent. 97: 1070. ♀, ♂.

solidaginis Yoshimoto. Ont. Host: *Campoplex depressus* Viereck.

Euderus solidaginis Yoshimoto, 1971. Canad. Ent. 103: 566. ♀.

subopacus (Gahan). N. S., Que., Ont., Mass., Va., W. Va., Ohio, La., Man., Sask., Alta., Calif.

Host: *Cylindrocopturus eatoni* Buchanan; *Acrobasis caryae* Grote, *Grapholitha molesta* (Busck), *Rhyacionia buoliana* (Schiff.), *R. frustrana* (Comst.), *Spilonota ocellana* (D. and S.); *Bracon variabilis* (Prov.).

Secodella subopaca Gahan, 1927. Jour. Agr. Res. 34: 548. ♀, ♂.

Biology: Cushman, 1927. Jour. Agr. Res. 34: 617.

viridilineatus Yoshimoto. Ont.

Euderus (*Neoeuderus*) *viridilineatus* Yoshimoto, 1971. Canad. Ent. 103: 553. ♂.

vockerothi Yoshimoto. Fla.

Euderus vockerothi Yoshimoto, 1971. *Canad. Ent.* 103: 562. ♀.

Genus *ASTICHUS* Foerster

Astichus Foerster, 1856. *Hym. Stud.*, v. 2, pp. 78, 80.

Type-species: *Euderus arithmeticus* Foerster. Monotypic.

Taxonomy: Masi, 1925. *Soc. Ent. Ital.*, Bol. 57: 84. — Costa Lima, 1959. *Acad. Brasil. de Cien.*, An. 31: 122. — Boucek, 1963. *Beitr. z. Ent.* 13: 273 (key to European species). — Yoshimoto, 1970. *Canad. Ent.* 102: 658 (key to Nearctic species).

arithmeticus (Foerster). N. C., Ind., Ill., Idaho, Ariz., Calif.; Europe. Ecology: Emerged from bracket fungi, *Polyporus* and *Poria*, containing cisd beetles.

Euderus arithmeticus Foerster, 1851. *Naturh. Ver. Rheinlande*, Verh. 8: 18. ♀.

arizonensis Ashmead. Ariz. Type missing; this may not be *Astichus*.

Astichus arizonensis Ashmead, 1888. *Canad. Ent.* 20: 101. ♂.

auratus Ashmead. Fla. Ecology: Emerged from cynipid gall. Host: *Neuroterus*

quercusminutissimus Ashm. Types in very poor condition; this almost certainly is not *Astichus*.

Astichus auratus Ashmead, 1887. *Amer. Ent. Soc.*, Trans. 14: 200. ♀.

notus Yoshimoto. Que., Ont. Ecology: Emerged from bracket fungi, *Polyporus* and *Ganoderma*, containing beetles.

Astichus notus Yoshimoto, 1970. *Canad. Ent.* 102: 656. ♀, ♂.

pulchrrilineatus Gahan. N. Y., Va., N. C., Idaho., Ariz., Calif.; Mexico. Ecology: Emerged from bracket fungi, *Polyporus*, *Porus*, *Cryptoporus*, containing cisd beetles. Host: *Brachycis* sp., *B. brevicollis* Casey, *Ceracis* sp.

Astichus pulchrrilineatus Gahan, 1927. *U. S. Natl. Mus.*, Proc. 71 (4): 28. ♀, ♂.

TRIBE TETRASTICHINI

Taxonomy: Kurdjumov, 1913. *Russk. Ent. Obozr.* 13: 243-256 (Palearctic spp.; Russian text transl. into French by Nowicki, 1927. *Eos* 3: 513-517). — Ferriere, 1960. *Acta Hym.* 1: 105-106 (key to genera). — Graham, 1961. *Ent. Monthly Mag.* 97: 34-64 (European spp.). — Domenichini, 1965. *Bol. Zool. agr. e di Bach.*, (2) 6: 61-204 (key to genera; species groups of Palearctic spp.). — Domenichini, 1966. *Index Palearctic Tetrastichinae*, Le Francois, 101 pp.

Genus *CERATONEURA* Ashmead

Ceratoneura Ashmead, 1894. *Linn. Soc. London, Jour.*, Zool. 25: 178.

Type-species: *Ceratoneura petiolata* Ashmead. Desig. by Ashmead, 1904.

Ceratotetrastichodes Girault, 1917. *Speciosissima Genera Nova Eulophidorum*, p. 2.

Type-species: *Ceratoneura pretiosa* Gahan. Orig. desig.

petiolata Ashmead. Fla., Ariz.; West Indies, Mexico, Venezuela. Ecology: Reared from gall on *Larrea*.

Ceratoneura petiolata Ashmead, 1894. *Linn. Soc. London, Jour.*, Zool. 25: 179. ♀, ♂.

pretiosa Gahan. Tex.

Ceratoneura pretiosa Gahan, 1914. *U. S. Natl. Mus.*, Proc. 48: 165. ♀, ♂.

Biology: Gahan, 1941. *Ent. Soc. Wash.*, Proc. 43: 2.

Genus *PARASPALANGIA* Ashmead

Paraspalangia Ashmead, 1904. *Carnegie Mus.*, Mem. 1: 334.

Type-species: *Paraspalangia annulipes* Ashmead. Monotypic.

Stigmatotrastichus Girault, 1916. *Ent. Soc. Amer.*, Ann. 9: 303.

Type-species: *Stigmatotrastichus emersoni* Girault. Orig. desig.

annulipes Ashmead. Tex.

Paraspalangia annulipes Ashmead, 1904. *Carnegie Mus.*, Mem. 1: 334. ♀.

Stigmatotrastichus emersoni Girault, 1916. *Ent. Soc. Amer.*, Ann. 9: 304. ♀.

Taxonomy: Gahan and Peck, 1946. Wash. Acad. Sci., Jour. 36: 316.

Genus WINNEMANA Crawford

Winnemana Crawford, 1911. U. S. Natl. Mus., Proc. 39: 620.

Type-species: *Winnemana argei* Crawford. Orig. desig.

Ootetrastichoides Ii, 1936. Kontyu 10: 221-225.

Type-species: *Ootetrastichoides habachi* Ii. Monotypic.

Taxonomy: Domenichini, 1966. Index Palearctic Tetrastichinae, Le Francois, p. 15.

argei Crawford. Md. Ecology: Egg parasite. Host: *Arge pectoralis* (Leach).

Winnemana argei Crawford, 1911. U. S. Natl. Mus., Proc. 39: 620. ♀, ♂.

Biology: Schwarz, 1909. Ent. Soc. Wash., Proc. 11: 107.

Genus THRIPOSOMA Crawford

Thripesoma Crawford, 1913. U. S. Natl. Mus., Proc. 45: 255.

Type-species: *Thripesoma grafi* Crawford. Orig. desig.

grafi Crawford. Calif.

Thripesoma grafi Crawford, 1913. U. S. Natl. Mus., Proc. 45: 255. ♀.

Genus OMPHALOMOPSIS Girault

Omphalomopsis Girault, 1917. Brooklyn Ent. Soc., Bul. 12: 88.

Type-species: *Omphalomopsis marilandia* Girault. Orig. desig.

marilandia Girault. Md.

Omphalomopsis marilandia Girault, 1917. Brooklyn Ent. Soc., Bul. 12: 88. ♀.

Genus THYMUS Girault

Thymus Girault, 1916. Canad. Ent. 48: 113.

Type-species: *Encyrtus albocinctus* (Ashmead). Orig. desig.

Thymiscus Ghesquiere, 1946. Rev. Zool. Bot. Africaines 34: 371. N. name, unnecessarily proposed.

albocinctus (Ashmead). Fla. Ecology: Reared from cynipid gall on *Quercus nigra*.

Eupelmus albocinctus Ashmead, 1885. Amer. Ent. Soc., Trans. 12: Proc. p. xvi. ♀.

Genus PROTHYMUS Girault

Prothymus Girault, 1917. New Chalcid Flies, p. 1.

Type-species: *Prothymus novus* Girault. Orig. desig.

novus Girault. Fla., Mo.

Prothymus novus Girault, 1917. New Chalcid Flies, p. 1.

Genus GALEOPSOMYIA Girault

Galeopsomyia Girault, 1916. Ent. News 27: 348.

Type-species: *Euderus columbianus* Ashmead. Orig. desig.

haemon (Walker). N. Y., s. to Fla., w. to Mo., Tex., N. Mex. and Ariz. Host: *Asphondylia helianthiglobulus* O. S., *Rhopalomyia* sp. gall on *Solidago*.

Tetrastichus haemon Walker, 1847. Ann. and Mag. Nat. Hist., (1), 20: 28. ♀.

Euderus columbiana Ashmead, 1888. Canad. Ent. 20: 104. ♀.

Taxonomy: Girault, 1912. Canad. Ent. 44: 50-52. —Burks, 1971. Ent. Soc. Wash., Proc. 73: 82.

—Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 144 (synonymy).

nigrocyanea (Ashmead). D. C., N. C., Fla., La., Tex., Calif. Host: *Belonocnema treatae* Mayr.

Gyrolasia nigrocyanens Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 134. ♀.

Genus PARAGALEOPSOMYIA Girault

Paragaleopsomyia Girault, 1917. Speciosissima Genera Nova Eulophidorum, p. 1.

Type-species: *Paragaleopsomyia eja* Girault. Orig. desig.

eja Girault. Ariz., Oreg., Calif.

Paragaleopsomyia eja Girault, 1917. Speciosissima Genera Nova Eulophidorum, p. 1. ♀.
gallicola Gahan. Tex., Ariz. Ecology: Reared from cecidomyiid gall on *Pluchea borealis*.
Paragaleopsomyia gallicola Gahan, 1919. Ent. Soc. Amer., Ann. 12: 167. ♀, ♂.

Genus GALEOPSOMOPSIS Girault

Galeopsomopsis Girault, 1917. Speciosissima Genera Nova Eulophidorum, p. 1.
 Type-species: *Galeopsomopsis multisulcata* Girault. Orig. desig.
squamosa Girault. Calif.
Galeopsomopsis squamosus Girault, 1917. New Chalcid Flies, p. 3.
transcarinata Gahan. Ariz. Host: *Asphondylia websteri* Felt.
Galeopsomopsis transcarinatus Gahan, 1919. Ent. Soc. Amer., Ann. 12: 168. ♀, ♂.

Genus TETRASTICHUS Haliday

Tetrastichus Walker, 1842. Ann. and Mag. Nat. Hist. (1) 10: 116. Genus suppressed by Opinion 720, Internatl. Comn. Zool. Nomencl., 1965.
 Type-species: *Cirrospilus lycidas* Walker. Desig. by Peck, 1951.
Tetrastichus Haliday, 1844. Ent. Soc. London, Trans. 3: 297. Placed on Official list of Generic Names in Zoology by Opinion 720, Internatl. Comn. Zool. Nomencl., 1965.
 Type-species: *Cirrospilus attalus* Walker. Monotypic. Placed on Official list of Specific Names in Zoology by Opinion 720, Internatl. Comn. Zool. Nomencl., 1965.
Trichoceras Ratzeburg, 1844. Ichn. d. Forstins., v. 1, insert opp. p. 40, p. 171.
 Type-species: *Trichoceras erythrophthalmus* Ratzeburg. Monotypic.
Geniocerus Ratzeburg, 1848. Ichn. d. Forstins., v. 2, p. 175. N. name, unnecessarily proposed.
Baryscapus Foerster, 1856. Hym. Stud., v. 2, p. 84. No species.--Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 202. One species.
 Type-species: *Baryscapus centricolae* Ashmead. Included by Ashmead, 1887.
Solenoderus Motschulsky, 1863. Soc. Imp. Nat. Moscou, Bul. 36: 71.
 Type-species: *Solenoderus cyaniventris* Motschulsky. Monotypic.
Oomyzus Rondani, 1870. Comizio Agr. Parma, Bol. 3: 140.
 Type-species: *Oomyzus gallerucae* (Fonscolombe). Monotypic.
Myiomisa Rondani, 1877. Soc. Ent. Ital., Bol. 9: 189.
 Type-species: *Myiomisa microscopica* Rondani. Monotypic.
Tetrastichodes Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 203.
 Type-species: *Tetrastichus floridanus* Ashmead. Monotypic.
Lygellus Giard, 1896. Soc. de Biol. (Paris), Compt. Rend., p. 839.
 Type-species: *Lygellus epilachnae* Giard. Monotypic.
Neotetrastichus Perkins, 1912. Hawaii. Sugar Planters' Assoc. Expt. Sta., Div. Ent. Bul. 10: 14.
 Type-species: *Neotetrastichus minus* Perkins. Monotypic.
Epitetrastichus Girault, 1913. Queensland Mus., Mem. 2: 205 (footnote), 229.
 Type-species: *Epitetrastichus speciosissimus* Girault. Orig. desig.
Neomphaloidella Girault, 1913. Roy. Soc. So. Australia, Trans. 37: 69.
 Type-species: *Neomphaloidella fasciiventris* Girault. Monotypic.
Epomphaloides Girault, 1913. Arch. f. Naturgesch. 79A (6): 49.
 Type-species: *Epomphaloides flavus* Girault. Orig. desig.
Neotetrastichodes Girault, 1913. Queensland Mus., Mem. 2: 228.
 Type-species: *Neotetrastichodes flavus* Girault. Orig. desig.
Aprostoceroloides Girault, 1913. Queensland Mus., Mem. 2: 243.
 Type-species: *Aprostoceroloides speciosus* Girault. Orig. desig.
Hadrothrix Cameron, 1913. Indian Forest Rec. 4: 102. N. Syn.
 Type-species: *Hadrothrix purpurea* Cameron. Monotypic.
Blattotetrastichus Girault, 1917. Ent. News 28: 257.
 Type-species: *Entedon hagenowii* Ratzeburg. Orig. desig.
Paromphaloidomyia Girault, 1917. New Chalcid Flies, p. 1.
 Type-species: *Paromphaloidomyia homeri* Girault. Orig. desig.

Tamarixia Mercet, 1924. R. Soc. Espan. Hist. Nat., Bol. 24: 57.

Type-species: *Tamarixia bicolor* Mercet. Orig. desig.

Anellaria Bakkendorf, 1934. Ent. Meddel. 19: 8.

Type-species: *Anellaria conomeli* Bakkendorf. Monotypic.

Pachyscapus Erdos, 1954. Mus. Nat. Hungarici, Ann. Hist. Nat., n. s., 5: 364.

Type-species: *Ceraniscus crino* (Walker). Orig. desig.

The genus *Sphenolepis* Nees, 1834 (Hym. Ichn. Aff. Monog., v. 2, p. 265), along with its synonym *Peltephorus* Erdos, 1961 (Mus. Nat. Hungarici, Ann. Hist. Nat. 53: 483, 489), has been placed as a synonym of *Tetrastichus* Haliday by Boucek, 1961 (Mus. Nat. Pragae, Acta Ent. 34: 475). *Sphenolepis* is a wingless, aberrant form. It is, nevertheless, in Boucek's opinion, the same genus as *Tetrastichus*. Since it has priority over *Tetrastichus*, Boucek expressed his intention to petition the International Commission to suppress it. However, *Sphenolepis* and *Tetrastichus* can, and should, be separated generically.

Revision: Girault, 1913. Queensland Mus., Mem. 2: 199-216 (Australian spp.). — Kurdjumov, 1913. Russk. Ent. Obozr. 13: 243-256 (Palearctic spp.). — Masi, 1940. R. Lab. Ent. Agr. Portici, Bol. 3: 309-323 (African spp.). — Szelenyi, 1941. Ztschr. f. Angew. Ent. 28: 398-415 (some Palearctic spp.). — Burks, 1943 (reprinted 1971). U. S. Natl. Mus., Proc. 93: 505-608 (Nearctic spp.).

Taxonomy: Bakkendorf, 1953. Ent. Meddel. 26: 564. — Boucek, 1961. Mus. Natl. Pragae, Acta Ent. 34: 475-476 (*Sphenolepis*). — Graham, 1961. Ent. Monthly Mag. 97: 34-64 (all spp. in *Aprostocetus*). — Burks, 1962. Bul. Zool. Nomencl. 19: 306-307. (Proposal for suppression of *Tetrastichus* Walker, 1842). — Peck, 1963. Canad. Ent., Sup. 30, pp. 120-156 (Nearctic catalog). — Domenichini, 1964. Entomophaga 9: 33-38 (par. of Coleoptera). — Domenichini, 1965. Bol. Zool. agr. e di Bach. (2) 6: 65-194 (Palearctic species groups). — Domenichini, 1966. Palearctic Tetrastichinae, Le Francois, pp. 15-54 (Palearctic catalog and host list). — Domenichini, 1967. Bol. Zool. agr. e di Bach. (2) 8: 75-110 (Palearctic spp.).

acutus Ashmead. Fla. Type lost.

Tetrastichus acutus Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 134. ♂.

aeneoviridis (Girault). Ill. Ecology: In puparia. Host: Syrphidae.

Trichoporus aeneoviridis Girault, 1912. Canad. Ent. 44: 75. ♀, ♂.

agrilis Crawford. N. Y. Host: *Agrilus sinuatus* (Oliv.). Also occurs in Europe, probably known under another name.

Tetrastichus agrilis Crawford, 1914. Insecutor Inscitiae Menstruus 2: 181. ♀.

ainsliei Gahan. Conn., N. Y., Md., Va., N. C., Ill., Minn., Iowa, N. Dak., S. Dak., Kans., Okla., Tex., Colo. Host: *Cylindrocopturus adspersus* (Lec.), *Mordellistena* sp., *M. pustulata* (Melsh.); *Mayetiola destructor* (Say).

Tetrastichus ainsliei Gahan, 1917. U. S. Natl. Mus., Proc. 53: 214. ♀, ♂.

Neomphaloidella mediogutta Girault, 1917. Ent. News 28: 255. ♀.

alaskensis Ashmead. Alaska. Type unidentifiable.

Tetrastichus alaskensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 146. ♂.

anthophilus Burks. N. H., Ill. Host: *Rhopalomyia anthophila* (O. S.).

Tetrastichus anthophilus Burks, 1947. Ent. News 58: 85. ♀, ♂.

anthracinus Ashmead. Alaska. Type unidentifiable.

Tetrastichus anthracinus Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 146. ♀.

asparagi Crawford. S. Canada, Eastern U. S., Utah, Ariz., Wash., Oreg.; Europe. Probably introduced with its host plant. Host: *Crioceris asparagi* (L.).

Eulophus coeruleus Nees, 1834. Hym. Ichn. aff. Monog., v. 2, p. 174. ♀.

Tetrastichus asparagi Crawford, 1909. Ent. Soc. Wash., Proc. 11: 150. ♀. Consensus of opinion is that the name *asparagi* should be retained for this species because of wide usage in the economic literature. See Graham, 1961. Ent. Monthly Mag. 97: 39-40 and Domenichini, 1966. Palearctic Tetrastichinae, Le Francois, p. 19. It may be desirable to refer this matter to the Commission.

Biology: Howard, 1910. Jour. Econ. Ent. 3: 257-260. — Russell and Johnston, 1912. Jour. Econ. Ent. 5: 429. — Johnston, 1915. Jour. Agr. Res. 4: 303. — Ross, 1915. Agr. Gaz. Canada 2:

1055. —Paillot, 1917. Ann. du Serv. des Epiphyt. 4: 335. —Chittenden, 1923. Oreg. Bd. Hort., Rpt. 17: 187. —Felt, 1923. N. Y. State Ent., Rpt. 35: 92. —Beaulne, 1935. Quebec Soc. Protect. Plants, Ann. Rpt. 27: 59. —Sweetman, 1936. Biol. Control of Insects, pp. 145-146. —Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139: 53. —Askew, 1971. Parasitic Insects, p. 136.
- auplopus** Burks. Va. Host: *Auplopus* sp.
Tetrastichus auplopus Burks, 1963. Biol. Soc. Wash., Proc. 76: 55. ♀.
- baldufi** Burks. Ill. Host: *Neuroterus quercusverrucarum* (O. S.), gall.
Tetrastichus baldufi Burks, 1943. U. S. Natl. Mus., Proc. 93: 540. ♀, ♂.
- banksii** Howard. N. J., D. C., Fla., Ala., Mo. Ecology: In sacs of epeirid spiders.
Tetrastichus banksii Howard, 1892. Ent. Soc. Wash., Proc. 2: 299. ♀.
- barbarae** Burks. Mont., N. Mex., Oreg. Ecology: In *Abies* cones infested with *Barbara colfaxiana* (Kearf.), *Pinus ponderosa* cones, *Pseudotsuga menziesii* cones; possibly secondary.
Tetrastichus barbarae Burks, 1963. Biol. Soc. Wash., Proc. 76: 52. ♀, ♂.
- blastophagi** (Ashmead). D. C., Fla. Host: *Callirhytis blastophagi* (Ashm.) gall.
Hyperteles blastophagi Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 202. ♀, ♂.
- brevicornis** (Panzer). Ont.; Europe. Probably an adventive sp. Host: *Contarinia* sp. in *Fraxinus* seeds.
Cynips brevicornis Panzer, 1804. System. Nomencl. . . . Schaeffers . . . Insekten, p. 134.
- brevistigma** Gahan. N. H., Mass., Conn., R. I., N. Y., D. C., Ohio, Ind., Ky., Wash., Oreg., Calif.
Host: *Pyrhalta luteola* (Muller) pupae. This parasite is native to North America and its host is introduced; its original host must have been some related, native chrysomelid.
Tetrastichus brevistigma Gahan, 1936. Ent. Soc. Wash., Proc. 38: 76. ♀, ♂.
- Biology: Berry, 1938. U. S. Dept. Agr., Cir. 485, 11 pp. —Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139: 67.
- bruchivorus** Gahan. France. Introduced, but not established in N. C., Oreg. from France. Host: *Bruchus brachialis* Fahr.
Tetrastichus bruchivorus Gahan, 1942. Ent. Soc. Wash., Proc. 44: 8. ♀, ♂.
- Biology: Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139: 52.
- bruchophagi** Gahan. U. S.; Holarctic, South. S. Amer., Africa; prob. worldwide. Host: *Bruchophagus* spp.
Tetrastichus bruchophagi (!) Gahan, 1913. U. S. Natl. Mus., Proc. 46: 439. ♀, ♂.
Tetrastichus bruchophagi Girault, 1916. U. S. Natl. Mus., Proc. 51: 128, 132. Emend.
- Biology: Urbahns, 1917. Jour. Agr. Res. 8: 277-282. —Gahan, 1919. Ent. Soc. Amer., Ann. 12: 167. —Urbahns, 1920. U. S. Dept. Agr., Bul. 812: 17. —Nikolskaya, 1932. Zashch. rast. 1: 107-111. —Nikolskaya, 1934. Nikhl. nauch. iss. khlopk. inst. (Tashkent) 4-5: 120-122.
—Butler and Hansen, 1958. Pan-Pacific Ent. 34: 224-226. —Neunzig and Gyrisco, 1959. Jour. Econ. Ent. 52: 899. —Carrillo and Dickason, 1963. Oreg. State Univ. Agr. Expt. Sta., Tech. Bul. 86: 25, 31. —Batiste, 1967. Hilgardia 38: 463. —Watts and Bellotti, 1967. Jour. Econ. Ent. 60: 961.
- byersi** Burks. Mich., Ind. Host: *Dolichopeza americana* Needham, *D. walleyi* (Alex.) pupae.
Tetrastichus byersi Burks, 1963. Biol. Soc. Wash., Proc. 76: 53. ♀, ♂.
- cassidis** Burks. Md., La. Host: *Deloyala guttata* (Oliv.), *Metriona bicolor* (F.), larvae.
Tetrastichus cassidis Burks, 1943. U. S. Natl. Mus., Proc. 93: 555. ♀, ♂.
- centricolae** (Ashmead). N. C. Ecology: Reared from gall of *Atrusca quercuscentricola* (O. S.).
Type too broken to be recognized specifically.
Baryscapus centricolae Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 202. ♀.
- Taxonomy: Burks, 1943. U. S. Natl. Mus., Proc. 93: 603 (Transferred to *Tetrastichus*).
- charoba** (Walker). Generally dist. in wheat-producing areas of U. S. and Canada; Holarctic.
Ecology: Usually a primary parasite, but occasionally secondary, developing in other

parasites of the Hessian fly. Host: *Mayetiola destructor* (Say), *Dasineura leguminicola* (Lintner).

Cirrospilus charoba Walker, 1840 (1839). Ann. Nat. Hist. 4: 30. ♀. This name does not have strict priority over other Walker names for this sp., but was selected by Graham (1961. Ent. Monthly Mag. 97: 51) because of usage. Graham lists 12 European synonyms of *charoba*.

Tetrastichus carinatus Forbes, 1885. Ill. State Dept. Agr., Trans. 22 (App.): 48. ♀.

Taxonomy: Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 138-142, 144. —Hill and Pinckney, 1940. U. S. Dept. Agr., Tech. Bul. 715: 10-13. —Graham, 1961. Ent. Monthly Mag. 97: 51-52 (extensive European synonymy). —Domenichini, 1965. Bol. Zool. agr. e di Bach. (2) 6: 155-156 (synonymy).

Biology: Hill *et al.*, 1939. U. S. Dept. Agr., Tech. Bul. 689: 4-7, 10-15. —Lapina, 1948. Zool. Zhur. 27: 331. —Hill, 1953. U. S. Dept. Agr., Cir. 923: 3.

chlamytis Ashmead. Maine, s. to Fla., w. to Miss., Minn., Tex., and Utah. Host: *Chlamydis* sp., *C. gibbosus* (F.), *Exema dispar* Lacordaire, *E. mormona* Karren.

Tetrastichus chlamytis Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 234. ♀, ♂.

chrysopae (Crawford). Md., s. to Fla., w. to Minn., La., Mont., Oreg. and Calif.; Mexico, West Indies, Brazil. Host: *Chrysopa* sp., *C. californica* Coq., *C. oculata* Say, *C. plorabunda* Fitch, *C. rufilabris* Burm.

Geniocerus chrysopae Crawford, 1915. U. S. Natl. Mus., Proc. 48: 584. ♀.

Aprostoceroles annapolis Girault, 1917. Chalcidoidea Nova Marilandensis. II, p. 2. ♀.

Biology: Clancy, 1946. Calif. Univ. Pubs., Ent. 7: 448-454. —Muma, 1959. Fla. Ent. 42: 151.

clito (Walker). Ont., N. Y., Pa.; Europe. Adventive, first found in Ont. in 1951. Host: *Cassida rubiginosa* Mull.

Cirrospilus clito Walker, 1840 (1839). Ann. Nat. Hist. 4: 30. ♂.

Taxonomy: Graham, 1961. Ent. Monthly Mag. 97: 39. —Peck, 1963. Canad. Ent., Sup. 30: 128.

Biology: Domenichini, 1966. Palearctic Tetrastichinae, Le Francois, p. 25 (Holarctic hosts and Distribution).

coerulescens Ashmead. N. B., s. to Fla., w. to Alaska, Oreg. and Calif. Ecology: Secondary or tertiary parasite of numerous Coleoptera, Lepidoptera, Neuroptera. Host: *Apanteles* sp., *A. congregatus* (Say), *A. melanoscelus* (Ratz.), *Bracon* sp., *B. gelechia* Ashmead, *B. hebetor* Say, *Catolaccus aeneoviridis* (Girault), *Dibrachys cavius* (Walk.), *Hyposoter pilosulus* (Prov.), *Meteorus acronyctae* Mues., *Microgaster* sp., *Pteromalus* sp.

Tetrastichus coerulescens Ashmead, 1898. Ent. Soc. Wash., Proc. 4: 130. ♀, ♂.

Tetrastichus doteni Crawford, 1911. Ent. Soc. Wash., Proc. 13: 234. ♀, ♂.

Biology: Wester, 1956. Ent. Soc. Wash., Proc. 58: 284. —Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 38, 82.

compisivorus Crawford. Miss., Okla., Tex. Host: *Compsus auricephalus* (Say).

Tetrastichus compisivorus Crawford, 1915 (1914). Insecutor Inscitiae Menstruus 2: 180. ♀, ♂.

cornus Burks. Ill. Host: *Aulacidea podagrae* (Bass.) gall, *Hemadas nubilipennis* (Ashm.) gall. The record from *Hemadas* is questionable.

Tetrastichus cornus Burks, 1943. U. S. Natl. Mus., Proc. 93: 579. ♀, ♂.

crino (Walker). Pa., Md., S. C., Ark., Okla., Tex.; Europe. Host: *Oecanthus* sp., *O. nigricornis quadripunctatus* Beut. eggs.

Cirrospilus crino Walker, 1838. Ann. Nat. Hist. 1: 382. ♂.

Tetrastichus dispar Silvestri, 1920. Lab. Zool. Gen. e Agr. Portici, Bol. 14: 249. ♀, ♂.

Preocc. by Masi, 1916.

Tetrastichus oecanthivorus Gahan, 1932. Ent. Soc. Amer., Ann. 25: 743. N. name for *dispar* Silvestri.

Tetrastichus oecanthivorus var. *compar* Gahan, 1932. Ent. Soc. Amer., Ann. 25: 743. ♀, ♂.

Tetrastichus dubius Bakkendorf, 1955. Ent. Meddel. 27: 152. ♂.

Taxonomy: Domenichini, 1965. Bol. Zool. agr. e di Bach. (2) 6: 136. —Domenichini, 1966. Palearctic Tetrastichinae, Le Francois, p. 27.

Biology: Udine and Pinckney, 1940. Pa. Acad. Sci., Proc. 14: 81-83.

diarthronomyiae Gahan. Md. Host: *Diarthronomyia chrysanthemi* Ahlb.

Tetrastichus diarthronomyiae Gahan, 1923. Ent. Soc. Wash., Proc. 25: 65. ♀.

Biology: Hamilton, 1924. Md. Agr. Expt. Sta., Bul. 269: 32.

dolosus Gahan. Md., Va., Ohio, Iowa, Ark., La., Kans., Tex., Mont., Idaho, Ariz., Calif. Ecology:

This may be either a primary or secondary parasite. Host: *Ancylois comptana fragariae* (W. and R.), *Coleophora laricella* (Hbn.), *Evora hemidesma* (Zell.), *Fascista cercerisella* (Chamb.), *Homadaula aisocentra* Meyrick, *Parornix* sp.; *Euplectrus comstockii* How., *E. plathypenae* How.

Tetrastichus dolosus Gahan, 1917. U. S. Natl. Mus., Proc. 53: 215. ♀, ♂.

dyrus Burks. Mont., Wyo., Colo. Host: *Aphalara curta* Cald., *Trioza* spp.

Tetrastichus dyrus Burks, 1943. U. S. Natl. Mus., Proc. 93: 541. ♀, ♂.

Taxonomy: Graham, 1961. Ent. Monthly Mag. 97: 42.

ecus (Walker). Maine, Mass., Del., Ohio, Wis., Mont.; Europe. Host: *Coleophora laricella* (Hbn.), *Coptodisca splendoriferella* (Clem.), *Fenusa ulmi* Sund., *Heterarthrus nemoratus* (Fallen), *Phanomeris phyllotomae* Mues.; *Rhynchaenus pallicornis* (Say). Numerous other hosts in European literature.

Cirrospilus ecus Walker, 1838. Ann. Nat. Hist. 2: 204. ♂, ♀.

Eulophus cyclogaster Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 167. ♀.

Eulophus xanthops Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 170. ♀.

Taxonomy: Graham, 1961. Ent. Monthly Mag. 97: 48. —Domenichini, 1965. Bol. Zool. agr. e di Bach. (2) 6: 130-131. —Domenichini, 1966. Palearctic Tetrastichinae, Le Francois, p. 28.

Biology: Berry, 1938. Jour. Agr. Res. 57: 859-863. —Dowden, 1941. U. S. Dept. Agr., Tech. Bul. 757: 8, 10, 32-35. —Sundby 1957. Norsk Ent. Tidsskr., sup. 2, pp. 44-47. —Delucchi, 1958. Entomophaga 3: 245, 263-265. —Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 83. —Capek, 1963. Banská Stáv. Vysk. Ust. Lesn. Hosp. Ved. Prace 4: 270. —Celli, 1965. Univ. Bologna, Ist. di Ent., Bol. 27: 56. —Cheng and LeRoux, 1966. Ent. Soc. Quebec, Ann. 11: 88.

erynniae Domenichini. Calif.; Europe. Ecology: A secondary parasite. Probably inadvertently introduced along with its tachinid host. Host: *Erynniopsis rondanii* Townsend, parasitic on *Pyrrhalta luteola* (Muller).

Tetrastichus erynniae Domenichini, 1965. Bol. Zool. agr. e di Bach. (2) 6: 123. ♀, ♂.

euplectri Gahan. La., Tex. Host: *Euplectrus plathypenae* How., *Meteorus* sp.

Tetrastichus euplectri Gahan, 1914. U. S. Natl. Mus., Proc. 48: 167. ♀, ♂.

evonymellae (Bouche). Wash., Calif. Introduced from Europe. Host: *Leucoptera spartifoliella* Hbn.

Eulophus evonymellae Bouche, 1834. Naturgesch. d. Ins., p. 172. ♀, ♂.

faustus Burks. Wis., Minn., Mont., Idaho, Wash., Calif. Host: *Rhagoletis fausta* (O. S.).

Tetrastichus faustus Burks, 1943. U. S. Natl. Mus., Proc. 93: 582. ♀.

Biology: Balduf, 1959. Ill. Biol. Monog. 26, p. 146.

flavipes Ashmead. Fla. Ecology: Reared from gall of *Disholcaspis quercusvirens* (Ashmead). Type lost.

Tetrastichus flavipes Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 135. ♀.

flavopictus (Ashmead). Fla. Type lost.

Ceraninus flavopictus Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 202. ♂.

Taxonomy: Burks, 1943. U. S. Natl. Mus., Proc. 93: 604 (Transferred to *Tetrastichus*).

flora (Girault). Md., D. C., Ga., Fla., Tenn. Host: *Monarthropalpus burzi* (Lab.).

Aprostocetus flora Girault, 1917. New Chalcid Flies, p. 3. Prob. described from female.

Epitetrastichus tricolor Girault, 1917. Descr. Stellarum Nov., p. 9. ♀.

fumipennis (Girault). N. Y., Md., D. C., Va., Ohio, Ind., Ill., Iowa. Host: *Asteromyia carbonifera* (O. S.) gall on *Solidago*.

Neomphaloidella fumipennis Girault, 1917. Chalcidoidea Nova Marilandensis. [I], p. 2. ♀.

gala Walker. Fla.

Tetrastichus Gala Walker, 1847. Ann. and Mag. Nat. Hist. (1) 20: 28. ♀.

- Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 143.
- galactopus** (Ratzeburg). East Coast states, w. to Kans.; cosmopolitan. Host: *Apanteles glomeratus* (L.), par. of *Pieris*. Other hosts are given in European literature. This species has been named *microgastri* or *rapo* by numerous American and European authors.
- Eulophus galactopus* Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 169. ♀.
- Eulophus vinulae* Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 169. ♀.
- Tetrastichus lissonotus* Moeller, 1886. Ent. Tidskr. 7: 83. ♀, ♂.
- Taxonomy: Graham, 1961. Ent. Monthly Mag. 97: 37-38, 47. —Domenichini, 1965. Bol. Zool. agr. e di Bach. (2) 6: 120-121.
- Biology: Masi, 1908. Lab. Zool. Gen. e Agr. Portici, Bol. 3: 133. —Richards, 1940. Jour. Anim. Ecol. 9: 270-286. —Delucchi, 1950. Redia 35: 441-450. —Clausen, 1940. Entomophagous Insects, pp. 143-144. —Wilbert, 1960. Entomophaga 5: 203. —Janssen, 1960. Ztschr. f. Pflanzkrankh. 67: 20. —Mook and Haechk, 1965. Arch. Neerland de Zool. 16: 302. —Wilkinson, 1966. Jour. Econ. Ent. 59: 1012.
- Morphology: Domenichini, 1953. Bol. Zool. Agr. e di Bach. (1) 19: 278.
- gallerucae** (Fonscolombe). Mass., Conn., N. Y., N. J., D. C., Va. Introduced from Europe. Host: *Pyrrhalta luteola* (Muller) eggs.
- Peromatus gallerucae* Fonscolombe, 1832. Ann. Sci. Nat. 26: 302.
- Oomyzus xanthomelaenae* Rondani, 1873. Soc. Ent. Ital., Bol. 5: 148.
- Taxonomy: Marchal, 1905. Soc. Ent. de France, Bul. 1905: 81-83. —Boucek, 1957. Mus. Natl. Pragae, Acta Ent. 31: 177-181. —Domenichini, 1964. Entomophaga 9: 37.
- Biology: Marchal, 1905. Soc. Ent. de France, Bul. 1905: 64-68. —Howard, 1908. Jour. Econ. Ent. 1: 281-289. —Silvestri, 1910. Lab. Zool. Gen. e Agr. Portici, Bol. 4: 273-276. —Howard, 1910. Jour. Econ. Ent. 3: 257. —Howard, 1925. Ent. News 36: 129. —Berry, 1938. Jour. Agr. Res. 57: 859-863.
- Morphology: Masi, 1908. Lab. Zool. Gen. e Agr. Portici, Bol. 3: 131-133. —Silvestri, 1910. Lab. Zool. Gen. e Agr. Portici, Bol. 4: 272-273 (larva).
- garryana** Burks. B. C., Oreg., Wash. Host: *Besbicus mirabilis* (Kinsey), several cynipid galls on *Quercus garryana*.
- Tetrastichus garryana* Burks, 1963. Biol. Soc. Wash., Proc. 76: 49. ♀, ♂.
- Biology: Evans, 1963. Canad. Ent. 95: 1002-1005. —Evans, 1967. Canad. Ent. 99: 187-196.
- gelastus** Burks. Fla. Host: *Trioza* on Chinese elm.
- Tetrastichus gelastus* Burks, 1963. U. S. Natl. Mus., Proc. 93: 539. ♀.
- gentilei** Del Guercio. Fla.; West Indies, Europe, Fiji; cosmopolitan. Host: *Gynaikothrips ficorum* (Marchal), *G. uzeli* (Zimmermann), *Hoplothrips pedicularius* (Haliday), *Liothrips laureli* (Mason), *L. oleae* (Costa), *L. urichi* Karny. The male is unknown and probably does not exist.
- Tetrastichus Gentilei* Del Guercio, 1911. Accad. Georgofili Firenze, Atti 8: 222-227.
- Tetrastichus thripophonus* Waterston, 1923. Bul. Ent. Res. 13: 453. ♀.
- Tetrastichus tatei* Dozier, 1937. Univ. Puerto Rico, Jour. Agr. 21: 129. ♀.
- Taxonomy: Domenichini, 1965. Bol. Zool. agr. e di Bach. (2) 6: 178-179.
- Biology: Del Guercio, 1911. Accad. Georgofili Firenze, Atti 8: 222-227. —Mason, 1922. Ent. News 33: 199. —Del Guercio, 1931. Redia 19: 75-195. —Melis, 1935. Redia 21: 120-129. —Bournier, 1967. Soc. Ent. de France, Ann. (n. s.) 3: 173-179.
- gerstaeckeriae** Gahan. Tex. Host: *Gerstaeckeria nobilis* Lec., *G. porosa* Lec.
- Tetrastichus gerstaeckeriae* Gahan, 1936. U. S. Natl. Mus., Proc. 83: 485. ♀, ♂.
- gibboni** (Girault). Okla., Ariz. Host: *Languria mozdardi* Latr.
- Ootetrastichus gibboni* Girault, 1917. Brooklyn Ent. Soc., Bul. 12: 86. ♀.
- gigas** Burks. Wash., Oreg., Calif. Host: *Andricus quercuscalifornicus* (Bassett) gall.
- Tetrastichus gigas* Burks, 1943. U. S. Natl. Mus., Proc. 93: 560. ♀, ♂.
- granulatus** Walker. Ont.
- Tetrastichus granulatus* Walker, 1844. Ann. and Mag. Nat. Hist. (1) 14: 17. ♀.

- Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 143 (lectotype designated).
hagenowii (Ratzeburg). S. C., Ga., Fla., Ala., Miss., La., Tex.; worldwide. Ecology: Commonly found in roach-infested, heated buildings throughout North America, but able to exist in a state of nature only in the far south. Host: *Blatta orientalis* (L.), *Periplaneta americana* (L.), *P. australasiae* (F.), *P. brunnea* Burm., *P. fuliginosa* (Serv.), *Eurycotis floridana* (Walk.).
Entedon hagenowii Ratzeburg, 1852. Ichn. d. Forstins., v. 3, p. 211.
Tetrastichus floridanus Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 203. ♀, ♂.
Tetrastichoides(?) *browni* Ashmead, 1905. U. S. Natl. Mus., Proc. 29: 113. ♀.
Tetrastichodes asthenognus Waterston, 1915. Bul. Ent. Res. 5: 340. ♀.
- Taxonomy: Gahan, 1914. U. S. Natl. Mus., Proc. 48: 168. —Burks, 1943. U. S. Natl. Mus., Proc. 93: 554. —Roth and Willis, 1960. Smithsn.-Inst., Misc. Collect. 141: 249. —Domenichini, 1965. Bol. Zool. agr. e di Bach. (2) 6: 185.
- Biology: Usman, 1949. Current Sci. (India) 18: 407. —Roth and Willis, 1954. Amer. Ent. Soc., Trans. 80: 53-72. —Edmunds, 1955. Ent. Soc. Amer., Ann. 48: 210-213. —Cameron, 1955. Bul. Ent. Res. 46: 137-147. —Cameron, 1957. Bul. Ent. Res. 48: 205-206. —Roth and Willis, 1960. Smithsn. Inst., Misc. Collect. 141: 251-253.
- Morphology: Cameron, 1955. Bul. Ent. Res. 46: 137-147.
- haitiensis** Gahan. Fla.; West Indies. Introduced from Puerto Rico and recovered, but not certainly established. Host: *Diaprepes abbreviatus* (L.), *D. quadrivittatus* (Oliv.), *Pachnaeus litus* (Germar).
Tetrastichus haitiensis Gahan, 1929. Ent. Soc. Wash., Proc. 31: 17. ♀, ♂.
- Biology: Myers, 1932. Ent. Soc. London., Trans. 80: 135-136. —Wolcott, 1934. Puerto Rico Univ., Jour. Agr. 18: 426-427. —Myers, 1935. Bul. Ent. Res. 26: 237. —Wolcott, 1936. Puerto Rico Univ., Jour. Agr. 20: 521. —Tucker, 1936. Barbados Dept. Sci. and Agr., Agr. Jour. 5: 7-11. —Tucker and Wolcott, 1936. Internatl. Soc. Sugar Cane Technol., Proc. 5th Cong., pp. 403-404. —Wolcott, 1937. Puerto Rico Univ., Jour. Agr. 20: 884, 900, 901, 912. —Wolcott and Martorell, 1944. Puerto Rico Univ., Jour. Agr. 27: 97. —Wolcott, 1948. Puerto Rico Univ., Jour. Agr. 32: 776-777. —James, 1954. Jamaica Dept. Agr., Bul. 54: 11.
- hesperius** Burks. Ill. Ecology: Emerged from cynipid galls. Host: *Diplolepis ignota* (O. S.).
Tetrastichus hesperius Burks, 1947. Ent. News 58: 88. ♀, ♂.
- hibus** Burks. Calif. Ecology: Emerged from cup-gall on *Artemisia ludoviciana*.
Tetrastichus hibus Burks, 1943. U. S. Natl. Mus., Proc. 93: 582. ♀, ♂.
- hillmeadia** (Girault). Md.
Ootetrastichus hillmeadia Girault, 1917. Chalcidoidea Nova Marilandensis. III, p. 2. ♀.
- holbeini** Girault. W. Va., Mo., Calif. Host: *Chrysobothris femorata* (Oliv.), *C. mali* Horn.
Tetrastichus holbeini Girault, 1917. New Chalcid Flies, p. 2. ♀.
- homeri** (Girault). Va., S. C., Ga., Fla., Iowa. Host: *Asteromyia carbonifera* (O. S.) leaf gall on *Solidago*.
Paromphaloidomyia homeri Girault, 1917. New Chalcid Flies, p. 1.
Tetrastichus argyus Burks, 1943. U. S. Natl. Mus., Proc. 93: 558. ♀, ♂.
- hunteri** Crawford. Miss., Ark., La., Tex. Host: *Anthonomus grandis* Boh.
Tetrastichus hunteri Crawford, 1909. Ent. Soc. Wash., Proc. 11: 150. ♀.
- Biology: Pierce, 1910. Jour. Econ. Ent. 3: 453. —Pierce *et al.*, 1912. U. S. Dept. Agr., Bur. Ent. Bul. 100: 56-63. —Hunter and Pierce, 1912. U. S. Dept. Agr., Bur. Ent. Bul. 114: 142.
- ichthyus** Burks. Tex. Host: *Neuroterus quercusrileyi* (Bass.), *Xanthoterus emoryi* (Ashm.).
Both records are questionable.
Tetrastichus ichthyus Burks, 1943. U. S. Natl. Mus., Proc. 93: 528. ♀, ♂.
- impexus** Girault. Va. Host: *Disholcaspis quercusglobulus* (Fitch) gall.
Tetrastichus impexus Girault, 1917. New Chalcid Flies, p. 2.
- incertus** (Ratzeburg). Que., N. H., Vt., Mass., Conn., N. Y., N. J., Pa., Del., Md., Va., W. Va., Ky.; Europe. Introduced from Europe. Host: *Hypera postica* (Gyll.).
Enlophus incertus Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 168.
Tetrastichus erdoesi Domenichini, 1965. Bol. Zool. agr. e di Bach. (2), 6: 99.

Taxonomy: Burks, 1971. Ent. Soc. Wash., Proc. 73: 429-431.

Biology: Chamberlin, 1924. Jour. Econ. Ent. 17: 623. —Chamberlin, 1925. Jour. Econ. Ent. 18: 597. —Coles and Puttler, 1963. Jour. Econ. Ent. 56: 610. —Miller, 1966. Jour. Econ. Ent. 59: 1532. —Streams and Fuester, 1967. Jour. Econ. Ent. 60: 1575. —Schroeder *et al.*, 1969. Ent. Soc. Amer., Ann. 62: 812-815. —Horn, 1970. Jour. Econ. Ent. 63: 303-304. —Mailloux and Pilon, 1970. Soc. Ent. Quebec, Ann. 15: 123-127. —Miller, 1970. Jour. Econ. Ent. 63: 719-721. —Richardson, *et al.*, 1971. Canad. Ent. 103: 1653-1658. —Horn, 1971. Canad. Ent. 103: 83-94.

johnsoni Ashmead. N. H., Md., Ill., Mo., Ariz. Ecology: Primary parasite of larvae of spider wasps. Host: *Phanagenia bombycina* (Cresson), *Dipogon sayi* Banks.

Tetrastichus johnsoni Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 233. ♀.

Biology: Krombein, 1967. Trap-nesting wasps and bees, pp. 424-426.

julis (Walker). W. Va., Ohio, Mich. Introduced from Europe. Host: *Oulema melanopus* (L.). Original introduction material from Italy and Southern France for liberation in North America identified by G. Domenichini, 1964. Species name mis-spelled *tulis* in some literature.

Cirrospilus julis Walker, 1839. Ann. and Mag. Nat. Hist. (1) 2: 354. ♂, ♀.

Cirrospilus Tulis(!) Walker, 1839. Monog. Chalcid., v. 1, p. 333. This mis-spelling was used in all known literature until 1961.

Taxonomy: Graham, 1961. Ent. Monthly Mag. 97: 38. —Domenichini, 1965. Bol. Zool. agr. e di Bach. (2) 6: 90.

Biology: Hodson, 1929. Bul. Ent. Res. 20: 10 (*Tetrastichus* sp.).

juniperi (Crawford). N. Y., Va., Ohio, Ill., Idaho, Oreg. Ecology: Reared from juniper berries that are infested with cecidomyiid larvae or larvae of *Anthonomus juniperinus* Sanb. *Geniocerus juniperi* Crawford, 1915. U. S. Natl. Mus., Proc. 48: 585. ♀.

Biology: Marcovitch, 1915. Ent. Soc. Amer., Ann. 8: 169. —Gahan, 1922. Ent. Soc. Wash., Proc. 24: 48-51. —Morgan and Hedlin, 1960. Canad. Ent. 92: 610. —Appleby and Neiswander, 1966. Ohio Agr. Expt. Sta., Res. Bul. 980: 6-9.

lasius Burks. Ohio., Tex. Host: *Asteromyia agrostis* (O. S.).

Tetrastichoides(?) *lasiopterae* Ashmead, 1894. Cincinnati Soc. Nat. Hist., Jour. 17: 54. ♀, ♂. Preocc. by Lindemann, 1881.

Tetrastichus lasius Burks, 1943. U. S. Natl. Mus., Proc. 93: 596. N. name.

lissus Burks. Ariz., Calif. Ecology: Reared from *Astragalus mollissimus*. Host: *Strymon melinus* Hbn.

Tetrastichus lissus Burks, 1943. U. S. Natl. Mus., Proc. 93: 527. ♀.

Biology: Samuelson, 1961. Pan-Pacific Ent. 37: 190.

longicorpus (Girault). N. Mex. Host: *Rhyacionia frustrana bushnelli* (Busck).

Neotetrastichodes longicorpus Girault, 1916. U. S. Natl. Mus., Proc. 51: 129. ♀.

malacosomae Girault. Que., N. Y., Mass., Conn., Del., Pa., N. C., Mich., Ark., Nebr., Colo., N. Mex., Idaho, Nev., Oreg., Calif. Host: *Malacosoma americanum* (F.), *M. californicum* (Pack.), *M. disstria* Hbn., *M. fragile* Stretch, *M. pluviale recenseo* Dyar.

Tetrastichus malacosomae Girault, 1917 (1916). Insector Inscitiae Menstruus 4: 110. ♀, ♂.

Biology: Langston, 1957. Calif. Univ. Pubs., Ent. 14: 26-27.

malophilus Burks. Ohio, Idaho. Host: *Crossidius hirtipes* Lec., *Rhynchaenus pallicornis* (Say). *Tetrastichus malophilus* Burks, 1943. U. S. Natl. Mus., Proc. 93: 585. ♀.

marcovitchi (Crawford). Maine, N. Y., Ind., Ill., Wis., N. Dak., Idaho, Nev. Host: *Dasineura balsamicola* (Lintn.), *Oligotrophus betheli* Felt, undet. cecidomyiid in juniper berries. *Geniocerus marcovitchi* Crawford, 1915. U. S. Natl. Mus., Proc. 48: 586. ♀, ♂.

Biology: Marcovitch, 1915. Ent. Soc. Amer., Ann. 8: 170. —Giese and Benjamin, 1959. Forest Sci. 5: 205. —Appleby and Neiswander, 1966. Ohio Agr. Expt. Sta., Res. Bul. 980: 13.

marylandensis (Girault). Mass., Md., D. C., Va., Ga., Fla., Ill., Miss., Mo., La. Host: *Rhyacionia frustrana* (Comst.), *Exoteleia pinifoliella* (Chamb.); undet. cecidomyiids.

Epitetrastichus marylandensis Girault, 1916. Ent. Soc. Amer., Ann. 9: 295. ♀.

Epitetrastichus cuneiformis Girault, 1917. Descr. Stellarum Nov., p. 18. ♀.

Biology: Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 82.

megachilidis Burks. Fla., Ohio, Ariz., Utah, Nev., Wash., Calif. Ecology: Parasites emerge from prepupae of the host. Host: *Megachile (Eutricharaea) concinna* Smith, M. (*Litomegachile*) *gentilis* Cress., M. (E.) *rotundata* (F.), M. (*Melanosaurus*) *xylocopoides* Smith.

Tetrastichus megachilidis Burks, 1963. Biol. Soc. Wash., Proc. 76: 57. ♀, ♂.

Biology: Butler and Wargo, 1963. Pan-Pacific Ent. 39: 205. —Krombein, 1967. Trap-nesting wasps and bees, pp. 427-430. —Butler and Ritchie, 1965. Pan-Pacific Ent. 41: 156.

melanis Burks. N. H., Mass., Fla., Ont., Minn., Wash. Host: *Coccinella* sp., *C. quinque-notata* Kirby. This is probably a synonym of a European species.

Tetrastichus melanis Burks, 1943. U. S. Natl. Mus., Proc. 93: 529. ♀, ♂.

Biology: Newcomer, 1958. Pan-Pacific Ent. 34: 89.

microrhopalae Ashmead. Man., N. J., D. C., Va., Ill. Host: *Microrhopala xerene* Newm., M. *vittata* (F.).

Tetrastichus microrhopalae Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 234. ♀, ♂.

milleri Burks. Calif. Ecology: Secondary parasite of *Recurvaria milleri* (Busck).

Tetrastichus milleri Burks, 1963. Biol. Soc. Wash., Proc. 76: 56. ♀.

minutus (Howard). Maine and Ont., s. to Fla., w. to B. C. and Calif.; Mexico, West Indies, Central America. Ecology: Probably always a secondary parasite, but often recorded from primary hosts. Host: *Aphis gossypii* Glov., *A. pomi* Deg., *Lecanium corni* Bouche, *L. nigrofasciatum* Perg., *L. persicae* (F.), *Phenacoccus acericola* King, *P. helianthi* (Ckll.), *Physokermes insignicola* (Craw), *Pseudococcus juniperi* Ehrh., *P. comstocki* (Kuw.), *Pulvinaria bigeloviae* Ckll., *Saissetia oleae* (Oliv.); *Adalia bipunctata* (L.), *Cycloneda sanguinea* (L.), *C. sanguinea immaculata* (F.); *Coccophagus albicoxa* How., *C. lycimnia* (Wlkr.), *Anagyrus yuccae* (Coq.), *Aphycus lounsburyi* How., *A. physokermis* Timb., *Blastothrix longipennis* How., *Chalcaspis phenacocci* (Ashm.), *Chrysoplatycerus ferrisi* Timb., *C. splendens* How., *Clausenia purpurea* Ishii, *Homalotylus terminalis* (Say), *Microterys mazzinini* Gir., *Praon* sp., *Pseudelptomastix squamulata* Gir., *Zarhopalus corvinus* (Gir.), *Pachyneuron californicum* Gir.

Astichus minutus Howard, 1881. U. S. Dept. Agr., Ann. Rpt. for 1880, p. 369. ♂.

Tetrastichus lecanii Ashmead, 1885. Amer. Ent. Soc., Trans. 12: Proc. p. xix. ♀.

Tetrastichus blepyri Ashmead, 1902. Canad. Ent. 34: 302. ♀.

Tetrastichus (Tetrastichodes) detrimentosus Gahan, 1913. U. S. Natl. Mus., Proc. 46: 439. ♀, ♂.

Taxonomy: Gahan, 1924. U. S. Natl. Mus., Proc. 65 (4): 19. —Burks, 1943. U. S. Natl. Mus., Proc. 93: 580.

Biology: Timberlake, 1924. Calif. Univ. Pubs. Ent. 3: 248-251. —Clausen, 1924. Calif. Univ. Pubs. Ent. 3: 257-266, 286-287. —Smith and Compere, 1928. Calif. Univ. Pubs. Ent. 4: 242, 306-308. —Clancy, 1948. Jour. Econ. Ent. 37: 450-451. —Judd, 1949. Nova Scotia Inst. Sci., Proc. 22: 64-67. —Flanders, 1953 (1952). Ent. Soc. Amer., Ann. 45: 544-547. —Samarasinghe and Leroux, 1966. Ent. Soc. Quebec, Ann. 11: 234.

modestus Howard. N. H., s. to Fla., w. to Mich., Nebr., and Calif. Ecology: Secondary parasite of Lepidoptera. Host: *Apanteles atalantae* (Pack.), *A. edwardsii* Riley, *A. pyraustae* Vier., *Microgaster congregatiformis* Vier.

Tetrastichus modestus Howard, 1889. In Scudder, Butterflies of Eastern U. S. and Canada, pp. 1872, 1894. ♀, ♂.

Epitetrastichus mundicornis Girault, 1917. Chalcidoidea Nova Marilandensis. III, p. 1. ♀.

Biology: Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 83.

nebraskensis (Girault). Maine, N. J., Md., S. C., Ind., Mich., Minn., Iowa, Mo., Nebr., Tex., N. Mex., Ore. Ecology: Occurs in clover and alfalfa fields and in meadows. Host: *Contarinia watti* Gagne, *Dasineura leguminicola* (Lintn.).

Neomphaloidella nebraskensis Girault, 1916. Canad. Ent. 48: 103. ♀.

- Biology: MacNay, 1954. *Canad. Ins. Pest Rev.* 32: 305. —Guppy, 1961. *Canad. Ent.* 93: 69.
—Moser, 1965. *N. Y. State Mus. and Sci. Serv., Bul.* 402: 30.
- neuroteri** (Ashmead). N. Y., D. C., Va., Fla., Ohio, Ill., Iowa, Mo., Tex. Host: *Neuroterus quercusrileyi* (Bass.), *N. saltarius* Weld.
Hyperteles neuroteri Ashmead, 1887. *Amer. Ent. Soc., Trans.* 14: 203. ♀, ♂.
- Taxonomy: Balduf, 1929. *Canad. Ent.* 61: 221.
- nordi** Burks. Pa., W. Va., Mich. Host: *Agrilus champlaini* Frost, *A. horni* Kerr.
Tetrastichus nordi Burks, 1963. *Biol. Soc. Wash., Proc.* 76: 51. ♀, ♂.
- Biology: Nord, *et al.*, 1965. *Forest Sci.* 11: 39.
- oklahoma** (Girault). Ill., Minn., Okla., Utah. Ecology: Emerged along with *Harmolita* sp. from grass stems.
Neomphaloidella oklahoma Girault, 1917. *Descr. Stellarum Nov.*, p. 9. ♀, ♂.
- ovipransus** Crosby and Leonard. Va., Ark. Host: *Blepharida rhois* (Forst.) eggs.
Tetrastichus ovipransus Crosby and Leonard, 1917. *Ent. News* 28: 368. ♀.
- pandora** Burks. Oreg. Host: *Coloradia pandora* Blake.
Tetrastichus pandora Burks, 1943. *U. S. Natl. Mus., Proc.* 93: 530. ♀, ♂.
- paracholus** Burks. Ont., N. J., D. C., Va., N. C., Wis., Minn. Host: *Gnorimoschema gallaesolidaginis* (Riley).
Tetrastichus paracholus Burks, 1943. *U. S. Natl. Mus., Proc.* 93: 551. ♀, ♂.
- pattersonae** Fullaway. Utah, Calif. Host: *Antron quercusechinus* (O. S.), *Callirhytis quercuspomiformis* (Bass.), *Disholcaspis chrysolepidis* (Beut.).
Tetrastichus pattersonae Fullaway, 1912. *N. Y. Ent. Soc., Jour.* 20: 280. ♀.
- Taxonomy: Burks, 1943. *U. S. Natl. Mus., Proc.* 93: 563.
- pausiris** (Walker). Ont.; Europe. Adventive; first found in Ont. in 1953. Host: *Dasineura leguminicola* (Lintn.).
Cirrospilus pausiris Walker, 1839. *Monog. Chalcid.*, v. 1, p. 327. ♀.
- Taxonomy: Peck, 1963. *Canad. Ent., Sup.* 30, p. 143. —Domenichini, 1965. *Bol. Zool. agr. e di Bach.* (2) 6: 143.
- Biology: Guppy, 1961. *Canad. Ent.* 93: 69-70.
- phidippi** Burks. Ariz. Host: *Phidippus opifer* (McCook) eggs.
Tetrastichus phidippi Burks, 1963. *Biol. Soc. Wash., Proc.* 76: 60. ♀, ♂.
- politi** Burks. Va., Tex. Host: *Xanthoteras politum* (Bass.) gall.
Tetrastichus politi Burks, 1963. *Biol. Soc. Wash., Proc.* 76: 48. ♀, ♂.
- polynemae** Ashmead. N. Y., Del., Ill. Ecology: Parasitizes both damselfly eggs and chalcids developing in them. Host: *Lestes* sp.; *Polynema needhami* (Ashm.).
Tetrastichus polynemae Ashmead, 1900. *Ent. News* 11: 616. ♀.
Ootetrastichus mymaridis Girault, 1916. *U. S. Natl. Mus., Proc.* 51: 130. ♀.
- Taxonomy: Girault, 1916. *U. S. Natl. Mus., Proc.* 51: 130.
- pompilicola** Graham. Labrador. Host: *Anoplius nigerrimus* (Scop.).
Tetrastichus pompilicola Graham, 1960. *In* Lindroth and Graham, *Opusc. Ent.* 25: 94. ♀.
- productus** Riley. P.E.I., Que., N. J., Ohio, Minn., Mo., Kans. Host: *Janus abbreviatus* (Say).
Long incorrectly thought to be a parasite of the Hessian fly.
Tetrastichus productus Riley, 1885. *U. S. Natl. Mus., Proc.* 8: 419. ♂, ♀.
- Taxonomy: Gahan, 1934 (1933). *U. S. Dept. Agr., Misc. Pub.* 174: 143.
- psyllaephagus** Burks. Ariz. Host: *Trioza collaris* Crawford nymph.
Tetrastichus psyllaephagus Burks, 1963. *Biol. Soc. Wash., Proc.* 76: 54. ♀, ♂.
- Biology: Cazier, 1964. *Pan-Pacific Ent.* 40: 71.
- pulchrivertris** (Girault). Md., La., Okla.
Neomphaloidella pulchrivertris Girault, 1916. *Canad. Ent.* 48: 101. ♀.
- punctatifrons** (Girault). Ariz. Host: *Paraleucoptera albella* (Chamb.). This host record may not be correct.
Epitetrastichus punctatifrons Girault, 1916. *U. S. Natl. Mus., Proc.* 51: 128. ♀.

- racemariae** Ashmead. Ont., Conn., N. J., Md., Va., Fla., W. Va., Ill., Minn., Nebr., Kans., Okla., Tex., N. Mex., Calif. Host: *Amphibolips quercuscinerea* (Ashm.), *A. quercusprunus* (W. and R.), *A. quercusracemaria* (Ashm.), *Andricus quercusflocci* (Walsh), *A. lasius* (Ashm.), *Callirhytis quercuspomiformis* (Bass.), *Disholcaspis cinerosa* (Bass.), *D. quercusmammi* (Walsh), *Heteroecus pacificus* (Ashm.), *Neuroterus norius* (Bass.), *N. quercusbatatus* (Fitch) galls.
Tetrastichus racemariae Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 134. ♀, ♂.
Tetrastichus californicus Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 203. ♀.
Hyperteles flocci Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 203. ♀, ♂.
Tetrastichus phagus Burks, 1943. U. S. Natl. Mus., Proc. 93: 559. ♀, ♂.
- Taxonomy: Judd, 1963. Canad. Field-Nat. 77: 64.
- repulsus** Girault. Iowa.
Tetrastichus repulsus Girault, 1917. New Chalcid Flies, pp. 2, 4.
- rhosaces** (Walker). Va.; Europe. Ecology: Primary parasite of cassidine beetle larvae on thistles. Adventive; first found in Va. in 1972. Host: *Cassida rubiginosa* Mueller.
Cirrospilus rhosaces Walker, 1839. Monog. Chalcid. v. 1, p. 293. "♂" = ♀.
Cirrospilus racilla Walker, 1839. Monog. Chalcid. v. 1, p. 312. ♀.
- Taxonomy: Graham, 1961. Ent. Monthly Mag. 97: 37.
- Biology: Domenichini, 1966. Palearctic Tetrastichinae, Le Francois, p. 47.
- rosae** Ashmead. Conn., N. J., D. C., Va., Fla., Mich., Colo., Idaho, B. C., Calif. Host: *Diptolepis ignota* (O. S.); *D. ostensackeni* (Beut.).
Tetrastichus rosae Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 134. ♀ (♂ misdet.).
- rugglesi** Rohwer. N. Y., Conn., W. Va., Minn. Host: *Agrilus arcuatus* (Say), *A. champlaini* Frost, *A. rubicola* Abeille.
Tetrastichus rugglesi Rohwer, 1919. Canad. Ent. 51: 160. ♀.
- saundersii** (Packard). Ont., Conn., N. J. Host: *Strymon edwardsii* (Saund.), *S. falacer* (Godt.).
Eulophus Saundersii Packard, 1881. Boston Soc. Nat. Hist., Proc. 21: 34. ♂.
- scolyti** Ashmead. N. J., W. Va. Host: *Scolytus rugulosus* (Ratz.).
Tetrastichus scolyti Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 343. ♀.
- scriptus** Burks. N. J., S. C., Ohio. Host: *Euplectrus* sp. Host record questionable.
Tetrastichus scriptus Burks, 1943. U. S. Natl. Mus., Proc. 93: 550. ♀.
- semiauraticeps** (Girault). Maine, Colo., Ariz., Calif. Ecology: Emerged from needle gall on *Pinus ponderosa*, bud gall on *Pinus scopulorum*.
Epitetrastichus semiauraticeps Girault, 1916. U. S. Natl. Mus., Proc. 51: 127. ♀.
- semideae** (Packard). N. H., Conn. Host: *Oeneis melissa* (Say).
Eulophus semideae Packard, 1874. In Hitchcock and Huntington, Geol. of N. H., pt. 1, p. 347. ♀, ♂.
- semilongifasciatus** (Girault). Md., D. C.
Neomphaloidella semilongifasciata Girault, 1916. Soc. Ent. 31: 35. ♀.
- silvaticus** Gahan. N. B., Maine, Vt., Conn., N. Y., Ont., Mich., Wis., Ill., Minn., N. Dak., Wash., Oreg., Calif. Host: *Malacosoma disstria* Hbn. eggs.
Tetrastichus silvaticus Gahan, 1937. Ent. Soc. Wash., Proc. 39: 266. ♀, ♂.
- Biology: Hobson, 1939. Ent. Soc. Amer., Ann. 32: 131-136. —Struble and Bedard, 1958. Pan-Pacific Ent. 34: 184.
- sobrius** Gahan. Fla., Ariz., Calif. Host: *Asphondylia* sp., *A. websteri* Felt.
Tetrastichus sobrius Gahan, 1919. Ent. Soc. Amer., Ann. 12: 166. ♀, ♂.
- sokolowskii** Kurdjumov. N. Y., Ont., Mo.; Europe, India, Japan, South Africa. Adventive in No. Amer.; first found in Ont. in 1952. Host: *Plutella xylostella* (L.).
Tetrastichus sokolowskii Kurdjumov, 1912. Russ. Ent. Obozr. 12: 238. ♀, ♂.
Tetrastichus sokolovskii Kurdjumov, 1913. Russ. Ent. Obozr. 13: 254. Emend.
- Biology: Cheerian and Basheer, 1939. Indian Acad. Sci., Proc. 9: 87-98. —Ullyett, 1947. Dept. Agr. So. Afr., Ent. Mem. 2: 101-106. —Harcourt, 1953. Canad. Ent. 85: 251. —Harcourt, 1960. Canad. Ent. 92: 422. —Pachorn-Walcher, 1964. Commonwealth Inst. Biol. Control, Tech. Bul. 4: 33.

- solidaginis** Burks. Que., N. H., Ohio, Mich., Utah. Host: *Eurosta solidaginis* (Fitch) gall.
Tetrastichus solidaginis Burks, 1943. U. S. Natl. Mus., Proc. 93: 534. ♀, ♂.
- spilopteris** Burks. N. Mex., Oreg., Calif. Host: *Andricus kingi* Bass., *Dryocosmus bicornis* (McC. and E.), *Neuroterus saltatorius* (Edw.), galls.
Tetrastichus spilopteris Burks, 1943. U. S. Natl. Mus., Proc. 93: 564. ♀, ♂.
- stanfordiensis** Fullaway. Calif. Ecology: Reared from cynipid galls. Type lost.
Tetrastichus stanfordiensis Fullaway, 1912. N. Y. Ent. Soc., Jour. 20: 281. ♀.
- strobilus** Burks. Minn., Mont., N. Mex., Idaho, Utah, Wash., Oreg., Calif. Ecology: Reared from pine, spruce, and Douglas fir cones. Host: *Barbara colfaxiana* (Krft.). Perhaps on other insects in cones.
Tetrastichus strobilus Burks, 1943. U. S. Natl. Mus., Proc. 93: 552. ♀, ♂.
- Biology: Keen, 1958. U. S. Dept. Agr., Tech. Bul. 1169: 95-96. —Hedlin, 1960. Canad. Ent. 92: 832.
- tesserus** Burks. N. Y., Md., Va., Mich., Ill., Iowa. Host: *Asteromyia* sp. gall on *Solidago*.
Tetrastichus tesserus Burks, 1943. U. S. Natl. Mus., Proc. 93: 552. ♀, ♂.
- thanasimi** Ashmead. Pa., W. Va., Mich., Mont., Calif. Host: *Cymatodera* sp., *Thanasimus* sp., *T. dubius* (F.), *T. trifasciatus* (Say).
Tetrastichus thanasimi Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 343. ♀.
- theclae** (Packard). New England, Host: *Strymon falacer* (Godt.).
Eulophus theclae Packard, 1881. Boston Soc. Nat. Hist., Proc. 21: 34. "♂" = ♀.
- tibialis** (Ashmead). Mass., Del., Ont., N. Y., W. Va., Iowa. Ecology: A secondary parasite. Host: *Apanteles* sp., *Olesicampe* sp., *Homalotylus* sp.
Tetrastichodes tibialis Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 344. ♀.
- Biology: Dimmock, 1898. Ent. Soc. Wash., Proc. 4: 150.
- tineivorus** Ferriere. N. H., Mass., Conn., Md., Ohio, Mo., Calif.; Europe, South Africa; prob. Cosmopolitan. Ecology: A secondary parasite of tineid moths living in fibers or detritus. Host: *Apanteles carpatus* (Say).
Tetrastichus tineivorus Ferriere, 1941. Schweiz. Ent. Gesell., Mitt. 18: 376. ♀, ♂.
Tetrastichus carpatus Burks, 1943. U. S. Natl. Mus., Proc. 93: 566. ♀, ♂.
- Taxonomy: Gahan, 1951. Canad. Ent. 83: 171.
- Biology: Back, 1945. Ent. Soc. Wash., Proc. 47: 183.
- triozae** Burks. Nebr., Kans., Mont., Colo., N. Mex., Idaho, Ariz., Wash., Calif. Ecology: Ubiquitous parasite of psyllid nymphs in arid or semi-arid regions; the *Tetrastichus* larva develops as an external parasite, feeding beneath the body of its host. Host: *Arytaina minuta* Cwfd., *Calophya californica* Schw., *C. nigrella* Jens., *C. triozae* Schw., *Euphalerus vermiculosus* Cwfd., *Paratrioza cockerelli* (Sulc.), *Pezopsylla cercocarpi* Jens., *Trioxa albifrons* Cwfd., *T. beameri* Tuth.
Tetrastichus triozae Burks, 1943. U. S. Natl. Mus., Proc. 93: 542. ♀, ♂.
- Biology: Pletsch, 1947. Mont. Agr. Expt. Sta., Bul. 446: 74-78. —Jensen, 1957. Hilgardia 27: 79-80, 86-96.
- trisolcatus** Provancher. N. B., s. to Fla., w. to Man., Ky., Ill. and Minn. Host: *Arge* sp., *A. pectoralis* (Leach), *A. scapularis* (Klug).
Tetrastichus trisolcatus Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 211. "♂" = ♀.
Hyperteles hylotomae Ashmead, 1888. Canad. Ent. 20: 105. ♀.
- Taxonomy: Burks, 1964 (1963). Canad. Ent. 95: 1262.
- Biology: Schwarz, 1909. Ent. Soc. Wash., Proc. 11: 107. —Raizenne, 1957. Canada Dept. Agr., Pub. 1009: 8-9.
- Morphology: Finlayson, 1963. Canad. Ent. 95: 479, 483, 498 (immature stages).
- turionum** (Hartig). Mass., Conn., N. J., Ont., N. Y. Introduced from Europe; first recovered in Mass. in 1934. Host: *Rhyacionia buoliana* (Schiff.).
Eulophus turionum Hartig, 1838. Jahresber. ueber die Fortsch. der Forstw. u. Forstl. Naturk. 1: 268. ♀, ♂.

- Biology: Dowden, 1934. Ent. Soc. Amer., Ann. 27: 600. — Bergold and Ripper, 1937. Ztschr. f. Parasitenk. 9: 399, 414-415. — Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139: 130-131. — Juillet, 1959. Canad. Ent. 91: 716-718. — Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 83. — Adlung, 1962. Ztschr. f. Angew. Ent. 50: 456. — Adlung and Sailer, 1963. Allg. Forst. u. Jagdztg. 134: 230. — Eichhorn *et al.*, 1965. Anz. f. Schadlingsk. 38: 107.
- ulysses** (Girault). Md.
Aprostocetus ulysses Girault, 1916. Brooklyn Ent. Soc., Bul. 11: 112. ♀.
- varicornis** (Girault). Maine, Mass., Md., N. C. Host: *Epinotia nanana* (Treit.), *Rhyacionia frustrana* (Comst.).
Epitetrastichus varicornis Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 4. ♀.
- Biology: Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 83.
- venustus** Gahan. Que., Maine, Ind., Minn., Iowa, Nebr., Idaho, Ariz., Calif. Ecology: Commonly reared from small leguminous seeds; exact host not established. A closely related, or identical, form was reared in a greenhouse as phytophagous in stems of sweet clover, but the cultures could not be maintained.
- Tetrastichus venustus* Gahan, 1914. U. S. Natl. Mus., Proc. 48: 168. ♀.
- Biology: Urbahns, 1920. U. S. Dept. Agr., Bul. 812: 18. — Teitelbaum and Black, 1954. Phytopathology 44: 548 (phytophagous in sweet clover). — Butler and Hansen, 1958. Pan-Pacific Ent. 34: 224-226.
- verrucarii** Balduf. N. Y., D. C., Va., Ga., Ohio, Ill., Wis., Utah, Calif. Host: *Neuroterus floccosus* (Bass.), *N. niger* Gill., *N. quercusverrucarum* (O. S.).
Tetrastichus verrucarii Balduf, 1929. Canad. Ent. 61: 221. ♀, ♂.
- Biology: Balduf, 1929. Canad. Ent. 61: 125-130.
- whitmani** (Girault). Maine, Md., Ill., Wis., Minn., S. Dak. Host: *Dasineura balsamicola* (Lintn.), *Physonota unipunctata* (Say).
Aprostocetus whitmani Girault, 1916. Ent. Soc. Amer., Ann. 9: 296. ♀, ♂.
Aprostocetus marilandicus Girault, 1917. Ent. News 28: 21. ♀.
- Biology: Giese and Benjamin, 1959. Forest Sci. 5: 205.

Genus APROSTOCETUS Westwood

- Aprostocetus* Westwood, 1833. London, Edinb. and Dublin Phil. Mag. and Jour. Sci. (3) 2: 444.
- Type-species: *Aprostocetus caudatus* Westwood. Monotypic.
- Lonchenedon* Ratzeburg, 1852. Ichn. d. Forstins., v. 3, p. 215.
- Type-species: *Eulophus longicaudatus* Foerster. Monotypic.
- Tetrastichomorpha* Girault, 1913. Queensland Mus., Mem. 2: 227.
- Type-species: *Tetrastichomorpha flava* Girault. Orig. desig.
- Neomphaloidomyia* Girault, 1917. Brooklyn Ent. Soc., Bul. 12: 118.
- Type-species: *Hyperteles polynemae* Ashmead. Orig. desig.
- Gyrolachnus* Erdos, 1954. Mus. Nat. Hungarici, Ann. Hist. Nat., n. s., 5: 365.
- Type-species: *Gyrolachnus longulus* Erdos. Orig. desig.
- Revision: Burks, 1967. Ent. Soc. Amer., Ann. 60: 756-760.
- ajax** (Girault). D. C., Mich., N. Dak.
Tetrastichomorpha ajax Girault, 1916. U. S. Natl. Mus., Proc. 51: 132. ♀.
- americanus** Ashmead. Va. and W. Va., w. to Ind., Mo., Tex., and Calif.; s. to Costa Rica. Host: *Ceratina* sp., *C. dupla* Say, *C. ignara* Cress., *C. nanula* Ckll., *C. sequoiae* Mich., *Azima zabriskiei* How., parasite on *Ceratina*.
Aprostocetus americanus Ashmead, 1888. Canad. Ent. 20: 106. ♀.
- animus** Girault. N. Mex. Type fragmentary.
Aprostocetus animus Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 6. ♀.
- bewicki** Girault. Wash.
Aprostocetus bewicki Girault, 1917. New Chalcid Flies, p. 2. ♀, ♂.

cinnatus (Girault). Md.

Neomphaloides cinnatus Girault, 1917. Psyche 24: 92. ♀.

coelioxys Burks. N. C., Ohio, Ark., Kans. Ecology: Reared from nests of leaf-cutter bees.

Host: *Coelioxys* sp., prob. *octodentata* Say, a parasite of *Megachile brevis* Say.

Aprostocetus coelioxys Burks, 1967. Ent. Soc. Amer., Ann. 60: 758. ♀, ♂.

daira (Walker). Que., Ont., Ohio, Nebr.; Europe. Host: *Orellia ruficauda* (F.). Possibly other tephritids serve as hosts.

Cirrospilus daira Walker, 1839. Monog. Chalcid., v. 1, p. 330. ♀.

Aprostocetus canadensis Ashmead, 1888. Canad. Ent. 20: 106. ♀.

Taxonomy: Graham, 1961. Ent. Monthly Mag. 97: 47.

Biology: Detmers, 1927. Ohio Agr. Expt. Sta., Bul. 414: 26-29.

diplosidis Crawford. N. C., s. to Fla., w. to Kans. and Tex.; worldwide in warm-temperate and tropical zones. Host: *Contarinia sorghicola* (Coq.).

Aprostocetus diplosidis Crawford, 1907. N. Y. Ent. Soc., Jour. 15: 180. ♀, ♂.

Biology: Dean, 1911. U. S. Dept. Agr., Bur. Ent. Bul. 85 (4): 55-57. — Walter, 1941. U. S.

Dept. Agr., Tech. Bul. 778: 18. — Piore and Viggiani, 1965. Lab. Ent. Agr. Portici, Bol. 23: 1-36.

epidius (Walker). Ont., N. Y., Fla., Ill. Ecology: Emerged from undet. gall-maker on elderberry.

Tetrastichus epidius Walker, 1847. Ann. and Mag. Nat. Hist. 20: 28. ♀.

Aprostocetus granulatus Ashmead, 1888. Canad. Ent. 20: 105. ♀.

Tetrastichus microcosmus Girault, 1917. Descr. Stellarum Nov., p. 22. N. name for *granulatus* Ashmead, unnecessarily proposed.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 142 (synonymy; lectotype designated).

fidius Girault. Fla., Miss., Ill., N. Mex.; West Indies. Host: *Taxodiomyia cupressiananassa* (O. S.). Other gall-making midges may serve as hosts.

Aprostocetus fidius Girault, 1917. New Eulophidae, p. 1. ♀.

Biology: Myers, 1930. Bul. Ent. Res. 21: 309-313. — Breland, 1939. Ent. Soc. Amer., Ann. 32: 726.

florida (Girault). Fla. Type fragmentary.

Neomphaloidella florida Girault, 1917. New Chalcid Flies, p. 4. ♀, ♂.

irvingi (Girault). N. Mex.

Neomphaloidella irvingi Girault, 1917. Brooklyn Ent. Soc., Bul. 12: 118. ♀.

kansasia Girault. Kans. Type fragmentary.

Aprostocetus kansasia Girault, 1917. Brooklyn Ent. Soc., Bul. 12: 88. ♀.

oncideridis (Gahan). W. Va. Host: *Oncideres cingulata* (Say).

Tetrastichus oncideridis Gahan, 1932. Ent. Soc. Amer., Ann. 25: 745. ♀, ♂.

oviductus (Girault). Md.

Epitetrastichus oviductus Girault, 1917 (1916). Insecutor Inscitiae Menstruus 4: 111. ♀.

polynemae (Ashmead). N. H., N. Y., Ill., Minn. Ecology: Parasitize eggs of *Odonata*. Host:

Anax junius (Drury) *Lestes* spp.

Hyperteles polynemae Ashmead, 1900. Ent. News 11: 615. ♀, ♂.

Genus HYPERTELETRASTICHUS Moser

Hypertetrastichus Moser, 1965. N. Y. State Mus. and Sci. Serv., Bul. 402: 15.

Type-species: *Hypertetrastichus ithacus* Moser. Orig. desig.

ithacus Moser. N. Y., Ohio, W. Va. Host: *Moserina maculata* Delucchi in *Pachypsylla* galls.

Hypertetrastichus ithacus Moser, 1965. N. Y. State Mus. and Sci. Serv., Bul. 402: 15. ♀.

Biology: Moser, 1965. N. Y. State Mus. and Sci. Serv., Bul. 402: 16.

Genus CRATAEPUS Foerster

Crataepus Foerster, 1878. Naturh. Ver. Rheinlande, Verh. 35: 61.

Type-species: *Crataepus aquisgranensis* Foerster. Orig. desig.

marbis (Walker). Ont., Man.; Holarectic. Host: *Orellia ruficauda* (F.).
Cirrospilus marbis Walker, 1839. Monog. Chalcid., v. 1, p. 330. ♀.
Crataepus fletcherii Ashmead, 1892. Canad. Ent. 24: 309. ♀.

Taxonomy: Gradwell, 1953. Ent. Monthly Mag. 89: 73-75.

Biology: MacNay, 1961. Canad. Ins. Pest Rev. 39: 273.

Genus BURKSIA Fullaway

Burksia Fullaway, 1955. Hawaii. Ent. Soc., Proc. 15: 409.

Type-species: *Burksia viridimaculata* Fullaway. Orig. desig.

viridimaculata Fullaway. Fla., Calif.; Hawaii, West Indies, Colombia, Argentina, Europe.

Ecology: Assoc. with armyworm larvae in Bermuda grass.

Burksia viridimaculata Fullaway, 1955. Hawaii. Ent. Soc., Proc. 15: 410. ♀.

Taxonomy: Domenichini, 1965. Bol. Zool. agr. e di Bach. (2) 6: 140. ♀.

Genus FLOCKIELLA Timberlake

Flockiella Timberlake, 1957. Pan-Pacific Ent. 33: 109.

Type-species: *Flockiella eucalypti* Timberlake. Orig. desig.

eucalypti Timberlake. Calif. Ecology: Reared from seed capsules of *Eucalyptus umbellata*.

Probably introduced from Australia.

Flockiella eucalypti Timberlake, 1957. Pan-Pacific Ent. 33: 110. ♀.

Biology: Flock, 1957. Pan-Pacific Ent. 33: 153-155.

Genus SYNTOMOSPHYRUM Foerster

Syntomosphyrum Foerster, 1878. Naturh. Ver. Rheinlande, Verh. 35: 60.

Type-species: *Syntomosphyrum fulvipes* Foerster. Monotypic.

Tetrastichopsis Girault, 1916. U. S. Natl. Mus., Proc. 51: 132.

Type-species: *Tetrastichopsis pronomeri* Girault. Orig. desig.

Tetrastichomyia Girault, 1916. U. S. Natl. Mus., Proc. 51: 48.

Type-species: *Miotropis clisiocampae* Ashmead. Orig. desig.

Revision: Burks, 1952. Ent. Soc. Wash., Proc. 54: 258-264.

Taxonomy: Waterston, 1915. Bul. Ent. Res. 5: 364.

blattae Burks. W. Va., N. C., Ohio. Host: *Parcoblatta* sp. oothecae.

Syntomosphyrum blattae Burks, 1952. Ent. Soc. Wash., Proc. 54: 263. ♀, ♂.

Biology: Edmunds, 1952. Ent. News 63: 143. — Edmunds, 1953. Ent. News 64: 228-229.

— Roth and Willis, 1960. Smithsn. Inst., Misc. Collect. 141: 248.

clisiocampae (Ashmead). Conn. and N. Y., s. to S. C., w. to Wis. and Tex. Host: *Achatodes zeae* (Harr.), *Diatraea crambidoides* (Grote), *Grapholitha molesta* (Busck), *Malacosoma americanum* (F.), *Ostrinia nubilalis* (Hbn.), *Sanninoidea eritiosa* (Say); *Microplitis gortynae* Riley.

Miotropis clisiocampae Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 341. ♀.

Biology: Balduf, 1929. Ohio Jour. Sci. 29: 227-228. — Proper, 1934. Jour. Agr. Res. 48: 370.

— Baker et al., 1949. U. S. Dept. Agr., Tech. Bul. 983: 178.

esurus (Riley). Que. and N. B., s. to Ga., w. to Man., Kans., Tex. Host: *Acrobasis juglandis* (LeB.), *Alabama argillacea* (Hbn.), *Anomis erosa* (Hbn.), *Choristoneura fumiferana* (Clem.), *C. pinus* Freeman, *Diatraea saccharalis* (F.), *Grapholitha molesta* (Busck), *Gretchena bolliana* (Slingerland), *Hyphantria cunea* (Drury), *Malacosoma disstria* Hbn., *Nygmia phaeorrhoea* (Donov.), *Orgyia leucostigma* (J. E. Smith), *Porthetria dispar* (L.), *Stenomoma algidella* (Walk.).

Cirrospilus esurus Riley, 1879. Canad. Ent. 11: 162. ♀, ♂.

Syntomosphyrum orgyiae Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 343. ♀.

Biology: Howard, 1897. U. S. Dept. Agr., Div. Ent., Tech. Ser. 5: 38-39. —Driggers, 1931. N. J. Agr. Expt. Sta., Ann. Rpt. 52: 192-193. —Clarke, 1933. Ga. State Bd. Ent., Bul. 77: 30-31, 36. —Allen, 1962. U. S. Dept. Agr., Tech. Bul. 1265: 91-92. —Dixon and Benjamin, 1963. Jour. Econ. Ent. 56: 267.

ischnopterae (Girault). Md., D. C., Fla., Minn. Ecology: Possibly a secondary parasite, attacking Evanidae in roach oothecae. Host: *Ischnoptera* sp., *Parcoblatta* sp. egg cases. *Eponiphaloidea ischnopterae* Girault, 1917. Ent. News 28: 257. ♀, ♂.

Biology: Roth and Willis, 1960. Smiths. Inst., Misc. Collect. 141: 249.

orgyiazele Burks, n. name. D. C. Host: *Orgyia leucostigma* (J. E. Smith).

Tetrastichomyia orgyiae Girault, 1916. Brooklyn Ent. Soc., Bul. 11: 111. ♀. Preocc. by *Syntomosphyrum orgyiae* Ashmead, 1894.

philodromi (Gahan). Ohio, Nebr. Host: *Philodromus aureolus* (Oliv.).

Tetrastichus philodromi Gahan, 1924. U. S. Natl. Mus., Proc. 65 (4): 18. ♀, ♂.

Biology: Auten, 1925. Ent. Soc. Amer., Ann. 18: 242.

prionomeri (Girault). Tenn., La. Host: *Odontopus calceatus* Say.

Tetrastichopsis prionomeri Girault, 1916. U. S. Natl. Mus., Proc. 51: 132. ♀.

silvensis (Girault). Md.

Tetrastichomyia silvensis Girault, 1919. Brooklyn Ent. Soc., Bul. 11: 111 ♀.

Genus MELITTOBIA Westwood

Melittobia Westwood, 1847. Ent. Soc. London, Trans. 5: Proc. pp. xviii, lxxv.

Type-species: *Melittobia audouinii* Westwood. Monotypic.

Anthophorabia Newport, 1849. Gard. Chron., p. 183.

Type-species: *Anthophorabia retusa* Newport. Monotypic.

Philopison Cameron, 1908. Deut. Ent. Ztschr., p. 559.

Type-species: *Philopison clavicornis* Cameron. Monotypic.

Sphecophagus Brethes, 1910. Buenos Aires Mus. Nac. de Hist. Nat., An. 20: 208.

Type-species: *Sphecophagus sceliphronidis* Brethes. Monotypic.

Sphecophilus Brethes, 1910. Buenos Aires Mus. Nac. de Hist. Nat., An. 20: 310. N. name, unnecessarily proposed for *Sphecophagus*.

Taxonomy: De Santis, 1949. La Plata Univ. Nac., Mus. Notas 14: 276. —Risbec, 1951. Inst. Franc. d'Afr. Noire, Mem. 13: 90. —Risbec, 1952. Inst. Sci. Madagascar, Mem., Ser. E, 2: 253. —Ferriere, 1960. Acta Hym. 1: 106. —Domenichini, 1965. Bol. Zool. agr. e di Bach. (2) 6: 63-64.

Biology: Balfour-Browne, 1922. Parasitology 14: 349-370. —Parker and Thompson, 1928. Soc. Ent. de France, Ann. 97: 449-463. —Clausen, 1940. Entomophagous Insects, pp. 141-148.

—Simmonds, 1944. Sci. Agr. 25: 11, 27. —van Lith, 1955. Tijdschr. v. Ent. 98: 29.

—Valkeila, 1959. Ann. Ent. Fenn. 25: 180.

chalybii Ashmead. Throughout U. S. and South. Canad. Ecology: Attacks almost any insect in laboratory cultures or insectaries, but in nature apparently develops only in aculeate Hymenoptera and their parasites.

Melittobia chalybii Ashmead, 1892. Ent. Soc. Wash., Proc. 2: 231. ♀, ♂.

Biology: Buckell, 1928. Pan-Pacific Ent. 5: 14-22. —Schmiedler, 1933. Biol. Bul. 65: 338-354.

—Schmiedler, 1938. Biol. Bul. 74: 256-266. —Schmiedler, 1939. Ent. News 50: 128-131.

—Flanders, 1944. Jour. Econ. Ent. 37: 410. —Medler, 1958. Ent. News 69: 21-23. —Medler, 1958. Ent. Soc. Amer., Ann. 51: 340-344. —Krombein, 1964. Biol. Soc. Wash., Proc. 77: 101.

—Medler, 1964. Canad. Ent. 96: 1334. —Medler, 1965. Ent. Soc. Wash., Proc. 67: 113.

—Fye, 1965. Canad. Ent. 97: 876. —Edwards and Pengelly, 1966. Ent. Soc. Ontario, Proc. 96: 98. —Krombein, 1967. Trap-nesting wasps and bees, pp. 430-433. —Medler, 1967. Amer.

Midland Nat. 78: 350. —Sheldon, 1968. Psyche 75: 111. —Medler and Lussenhop, 1968. Wis.

Coll. Agr., Res. Bul. 274: 20-47. —Peck, 1969. Canad. Ent. 101: 419-420. —Hobbs and

Krunio, 1971. Canad. Ent. 103: 674-685.

megachilis (Packard). Vt., N. Y., N. J., Wis., Nebr. Host: *Anthophora* sp., *Ceratina* sp., *Crabro* sp., *Megachile* sp., *Monodontomerus* sp., *Sceliphron caementarium* (Drury). *Anthophorabia megachilis* Packard, 1864. Essex Inst., Proc. 4: 134. ♀.

Pteromalus gerardi Hickok, 1875. Poughkeepsie Soc. Nat. Hist., Proc. 1: 131. ♀, ♂.

Melittobia megalochilae Schulz, 1906. Spolia Hym., p. 143. Emend.

Chrysocharis aeneus Brues, 1909 (1908). Wis. Nat. Hist. Soc., Bul. 6: 161. ♀.

Biology: Packard, 1869. Guide to Study of Insects, p. 206. —Howard, 1892. Ent. Soc. Wash., Proc. 2: 247.

TRIBE ENTEDONTINI

Genus EUDEROMPHALE Girault

Euderomphale Girault, 1916. Canad. Ent. 48: 410.

Type-species: *Euderomphale fuscipennis* Girault. Orig. desig.

Aleurodiphagus Nowicki, 1929. Neue Beitr. z. System. Insektenk. 4: 154.

Type-species: *Pteroptrix flavimedia* Howard. Desig. by Peck, 1951.

This genus was placed in the subfamily Aphelininae in the 1951 Catalog (U. S. Dept. Agr., Agr. Monog. 2: 432), and in the First Supplement (1958. U. S. Dept. Agr., Agr. Monog., Sup. 1: 64) it was incorrectly placed as a synonym of *Cardiogaster* Motschulsky.

Revision: Dozier, 1932. Ent. Soc. Wash., Proc. 34: 120.

Taxonomy: Compere and Annecke, 1961. Ent. Soc. S. Afr., Jour. 24: 65-68 (*Cardiogaster* in Eulophidae). —Peck, 1963. Canad. Ent., Sup. 30: 238 (*Cardiogaster* in Entedontinae).

—Graham, 1963. Soc. Brit. Ent., Trans. 15: 273 (*Euderomphale* in Entedontinae).

flavimedia (Howard). Md., N. Mex., Calif. Host: *Aleyrodes* sp., *A. pruinosa* Bemis, *A. spiraeoides* Quaint.

Gyrolasia flavimedia Howard, 1881. U. S. Dept. Agr., Ann. Rpt. for 1880, p. 369. ♂.

Euderomphale fuscipennis Girault, 1916. Canad. Ent. 48: 410. ♀.

hyalina (Compere and Annecke). Calif. Host: *Aleyrodes* sp.

Cardiogaster hyalina Compere and Annecke, 1961. Ent. Soc. S. Afr., Jour. 24: 68. ♀.

Biology: Poinar, 1964. Jour. Econ. Ent. 57: 382.

quercicola Dozier. La. Host: *Tetraleuroides* sp.

Euderomphale quercicola Dozier, 1933. Ent. Soc. Wash., Proc. 35: 85. ♀, ♂.

Genus CERANISUS Walker

Ceraninus Walker, 1840. Entomologist 1 (vi): pl. N, fig. 2; explanation of plate.

Type-species: *Ceraninus pacuvius* Walker. Monotypic.

Thripoctenus Crawford, 1911. Ent. Soc. Wash., Proc. 13: 233.

Type-species: *Thripoctenus russelli* Crawford. Monotypic.

Cryptomphale Girault, 1917. Speciosissima Genera Nova Eulophidorum, p. 2.

Type-species: *Thripoctenus nubilipennis* Williams. Orig. desig.

Taxonomy: Burks, 1943. U. S. Natl. Mus., Proc. 93: 509. —Bakkendorf, 1957. Ent. Meddel. 28: 1. —Graham, 1959. Soc. Brit. Ent., Trans. 13: 203.

americensis (Girault). Utah, Alta. Ecology: Reared from thrips in alfalfa.

Thripoctenus americensis Girault, 1917. U. S. Natl. Mus. Proc. 53: 448. ♀.

nubilipennis (Williams). Mass. Host: *Cryptothrips rectangularis* Hood, *Megalothrips spinosus* Hood.

Thripoctenus nubilipennis Williams, 1916. Psyche 23: 54. ♀, ♂.

russelli (Crawford). Calif. Host: *Caliothrips fasciatus* (Perg.), *Frankliniella tritici* (Fitch), *Taeniothrips simplex* (Mor.), *Thrips tabaci* Lind.

Thripoctenus russelli Crawford, 1911. Ent. Soc. Wash., Proc. 13: 233. ♀.

Biology: Russell, 1912. U. S. Dept. Agr., Bur. Ent., Tech. Ser. 23: 25-52. —Bailey, 1933. Hilgardia 7: 501-502. —Bailey, 1937. Agr. Expt. Sta., Bul. 609: 26.

Genus EUOPHTHALMOMYIA Ashmead

Euophthalmomyia Ashmead, 1904. Carnegie Mus., Mem. 1: 339, 340.

Type-species: *Euophthalmomyia pallidipes* Ashmead. Orig. desig.

- Euophthalmoneyia* Ashmead, 1904. Carnegie Mus., Mem. 1: 375. Misspelling.
pallidipes Ashmead. D. C.
Euophthalmomyia pallidipes Ashmead, 1904. Carnegie Mus., Mem. 1: 339, 375. ♀.

Genus OMPHALE Haliday

- Omphale* Haliday, 1833. Ent. Mag. 1: 339.
 Type-species: *Omphale salicis* Haliday. Monotypic.
Smaragdites Westwood, 1833. Mag. Nat. Hist. 6: 419.
 Type-species: *Smaragdites admirabilis* Westwood. Monotypic.
Secodes Foerster, 1856. Hym. Stud., v. 2, pp. 78, 81.
 Type-species: *Secodes fagi* Foerster. Monotypic.
 Taxonomy: Graham, 1963. Soc. Brit. Ent., Trans. 15: 240.
bicincta Ashmead. W. Va., Fla.
Omphale bicincta Ashmead, 1888. Canad. Ent. 20: 103. ♂.

Genus HUBBARDIELLA Ashmead

- Hubbardiella* Ashmead, 1904. Carnegie Mus., Mem. 1: 339, 340.
 Type-species: *Hubbardiella arizonensis* Ashmead. Orig. desig.
Miromphalomyia Girault, 1916. Entomologist 49: 249.
 Type-species: *Miromphalomyia perilampoides* Girault. Orig. desig.
arizonensis Ashmead. Ariz.
Hubbardiella arizonensis Ashmead, 1904. Carnegie Mus., Mem. 1: 339, 378. ♀.
Miromphalomyia perilampoides Girault, 1916. Entomologist 49: 250. ♀.
 Taxonomy: Gahan and Fagan, 1923. U. S. Natl. Mus., Bul. 124: 90.

Genus CLOSTROCERUS Westwood

- Closterocerus* Westwood, 1833. Mag. Nat. Hist. 6: 419.
 Type-species: *Closterocerus trifasciatus* Westwood. Monotypic.
 Revision: Crawford, 1912. U. S. Natl. Mus., Proc. 43: 175.
californicus Girault. Calif. Host: *Nepticula juglandifoliella* Clem.
Closterocerus utahensis var. *californicus* Girault, 1916. U. S. Natl. Mus., Proc. 51: 46. ♀.
cinninnatus Girault. Ohio.
Closterocerus utahensis cinninnatus Girault, 1916. U. S. Natl. Mus., Proc. 51: 47. ♂.
cinctipennis Ashmead. Que., s. to Fla., w. to Wis., Iowa, Mo. Ecology: Parasitizes both eggs and early-instar larvae. Host: *Brachys aerosus* (Melsh.), *B. ovatus* (Web.); *Bucculatrix canadensisella* (Chamb.), *Cameraria hamadryadella* (Clem.), *C. ulmella* (Chamb.), *Nepticula gossypii* F. and L.; *Caliroa cerasi* (L.), *Neodiprion excitans* Roh., *N. lecontei* (Fitch), *N. rugifrons* Midd., *N. swaini* Midd., *N. virginiana* Roh.
Closterocerus cinctipennis Ashmead, 1888. Canad. Ent. 20: 104. ♂.
 Biology: Webster, 1911. Ent. Soc. Amer., Ann. 4: 185. — Weiss and Nicolay, 1918. Psyche 25: 128-130. — Schedl, 1939. VII Internatl. Kong. Ent., Verh. 3, pp. 2066-2090. — Benjamin, 1955. U. S. Dept. Agr., Tech. Bul. 1118, pp. 24-26. — Morris, Schroeder, and Bobb, 1963. Pine Sawfly in Va., Va. Div. Forestry, p. 13.
tau Girault. Calif.
Closterocerus tau Girault, 1917. Psyche 24: 101. ♀.
tricinctus (Ashmead). Maine, Ont., s. to Va., w. to Wis., Ill., Kans. Host: *Microrhopala xerene* (Newm.); *Argyresthia thuiella* (Pack.), *Cameraria guttifinitella* (Clem.), *Coleotechnites thujaeella* (Kearf.), *Coptodisca splendoriferella* (Clem.), *Cosmopteryx* sp., *Eroteleia pinifoliella* (Chamb.), *Lithocolletis* sp., *L. lucetiella* Clem., *L. populiella* Chamb., *L. tremuloidella* Braun, *Paraclemensia acerifoliella* (Fitch), *Tischeria malifoliella* (Clem.); *Agromyza parvicornis* Loew, *Liriomyza melampyga* (Loew), *Meoneura obscurella* (Fall.), *Phytomyza ilicis* Curtis.
Pleurotropis tricincta Ashmead, 1888. Kans. Agr. Expt. Sta. Bul. 3: App. p. VIII. ♀.
 Biology: Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 84.

- Morphology: Snodgrass, 1922. Smithsn. Inst., Ann. Rpt. for 1920, p. 494.
trifasciatus Westwood. Maine, Mass., Minn., S. Dak., Ariz., Calif.; Europe. Host: *Liriomyza pictella* (Thomson).
Closterocerus trifasciatus Westwood, 1833. Mag. Nat. Hist. 6: 420.
 Biology: Sundby, 1957. Norsk Ent. Tidsskr., sup. 2, p. 41.
utahensis Crawford. Conn., Md., Utah, Ariz., Calif. Host: *Bucculatrix thurberiella* (Busck); *Agromyza parvicornis* Loew; *Fenusa pusilla* (Lep.).
Closterocerus utahensis Crawford, 1912. U. S. Natl. Mus., Proc. 43: 175. ♀.
 Biology: Clancy, 1946. Jour. Econ. Ent. 39: 328. — Hills and Taylor, 1951. Jour. Econ. Ent. 44: 760-762.
winnemanae Crawford. Md. Host: *Arge pectoralis* (Leach).
Closterocerus winnemanae Crawford, 1912: U. S. Natl. Mus., Proc. 43: 176. ♀, ♂.

Genus EPRHOPALOTUS Girault

- Eprhopalotus* Girault, 1916. U. S. Natl. Mus., Proc. 51: 49.
 Type-species: *Eprhopalotus purpureithorax* Girault. Orig. desig.
purpureithorax Girault. Tex. Ecology: Emerged from cecidomyiid gall on oak.
Eprhopalotus purpureithorax Girault, 1916. U. S. Natl. Mus., Proc. 51: 49. ♀.

Genus EMERSONELLA Girault

- Emersonella* Girault, 1916. Soc. Ent. 31: 36.
 Type-species: *Emersonella lemae* Girault. Orig. desig.
 Revision: Girault, 1922. No. Amer. Spp. of *Emersonella* and *Entedon*. One page.
lemae Girault. Del., D. C., Va., N. C., Mich., Miss. Host: *Lema* sp., *L. trilineata* (Oliv.).
Emersonella lemae Girault, 1916. Soc. Ent. 31: 36. ♀, ♂.
 Biology: Chittenden, 1924. Ent. Soc. Wash., Proc. 26: 46.
niveipes Girault. N. Y., D. C., Va. Host: *Chelymormpha cassidea* (F.).
Emersonella niveipes Girault, 1917. Deser. Hym. Chalcidoid. Variorum cum Observ. III, p. 3. ♀.

Genus CHRYSOCHARIS Foerster

- Chrysocharis* Foerster, 1856. Hym. Stud., v. 2, pp. 79, 82.
 Type-species: *Chrysocharis femoralis* Foerster. Desig. by Ashmead, 1904.
Omphalchrysocharis Girault, 1917. Deser. Hym. Chalcidoid. Variorum cum Observ. V, p. 3.
 Type-species: *Omphalchrysocharis orientalis* Girault. Orig. desig.
Kratochviliana Malac, 1943. Ent. Listy (Folia Ent) Brno 6: 1.
 Type-species: *Kratochviliana moravica* Malac. Orig. desig.
Epilampsis Delucchi, 1954. Neue Arten Subfam. Entedontinae, p. 3.
 Type-species: *Chrysocharis boops* Thomson. Orig. desig.
 Taxonomy: Boucek, 1961. Min. Sel. Kruzy. Moldav. SSR, Trudy 7: 28. — Graham, 1963. Soc. Brit. Ent., Trans. 15: 205.
ainsliei Crawford. Conn., S. C., Wis., Tex., Idaho, Utah, Ariz., Wash., Calif. Host: *Coleophora pruniella* Clem.; *Agromyza parvicornis* Loew, *Liriomyza pictella* (Thomson).
Chrysocharis ainsliei Crawford, 1912. U. S. Natl. Mus., Proc. 43: 174. ♀, ♂.
 Biology: Webster and Parks, 1913. Jour. Agr. Res. 1: 79-80. — Oatman, 1960. Jour. Econ. Ent. 53: 682.
cubensis Gahan. Fla.; West Indies.
Chrysocharis cubensis Gahan, 1932. Ent. Soc. Amer., Ann. 25: 748. ♀, ♂.
gemma (Walker). B. C.; Europe. Host: *Phytomyza ilicis* Curtis.
Entedon gemma Walker, 1839. Monog. Chalcid. v. 1, p. 53. ♂.
 Taxonomy: Delucchi, 1954. Schweiz. Ent. Ges., Mitt. 27: 300 (*Epilampsis*).

- Biology: Cameron, 1939. *Bul. Ent. Res.* 30: 178-186. — Downes and Andison, 1940. *Jour. Econ. Ent.* 33: 948. — Cameron, 1941. *Parasitology* 33: 29-38. — McLeod, 1954. *Ent. Soc. B. C., Proc.* 50: 22-23. — Busse, 1953. *Hamburg. Zool. Mus., Ent. Mitt.* 1: 98.
- giraulti** Yoshimoto. Que., Ont., D. C., Mo., Man., Colo., Alta., B. C. Ecology: Reared from chloropid on daisy.
- Omphalchrysocharis petiolatus* Girault, 1918. *Ent. News* 29: 131. ♀, ♂. Preocc. in *Chrysocharis* by Foerster, 1861 and Thomson, 1878.
- Chrysocharis giraulti* Yoshimoto, 1973. *Canad. Ent.* 105: 1384. N. name.
- laricinellae** (Ratzeburg). N. B., N. S., Que., Ont., Maine, Vt., N. H., Mass., Conn., N. Y., Wis., Idaho; Europe. Introduced for biological control from Central Europe in 1931; there is some evidence it was already here before it was introduced. Host: *Coleophora laricella* (Hbn.); *Fenusa pusilla* (Lep.), *F. ulmi* Sund., *Heterarthrus nemoratus* (Fall.).
- Entedon laricinellae* Ratzeburg, 1848. *Ichn. d. Forstins.*, v. 2, p. 161. ♂.
- Taxonomy: Ferriere, 1933. *In* Thorpe, *Bul. Ent. Res.* 24: 290. — Boucek, 1961. *Min. Sel. Kruzy. Moldav SSR*, Trudy 7: 28. — Peck, 1963. *Canad. Ent., Sup.* 30, pp. 205-207.
- Biology: Thorpe, 1933. *Bul. Ent. Res.* 24: 277-280. — Dowden, 1941. U. S. Dept. Agr., Tech. Bul. 757: 9-11, 44-49. — Graham, 1949. *Ent. Soc. Ontario, Ann. Rpt.* 79: 45-50. — Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139: 92. — Graham, 1958. *Ent. Soc. Ontario, Ann. Rpt.* 88: 37-41. — Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 85. — Quednau, 1966. *Ent. Soc. Quebec, Ann.* 11: 200. — Quednau, 1967. *Canad. Ent.* 99: 326, 631.
- majoriani** (Girault). Fla.; West Indies, Brazil. Introd. into Hawaii for biological control. Host: *Liriomyza commelinae* (Frost), *L. sorosis* (Will.), *Phytobia maculosa* (Mall.).
- Chrysocharodes majoriani* Girault, 1917. *Descr. Hym. Chalcidoid. Variorum cum Observ.* III, p. 10. ♀.
- mallochi** Gahan. Conn., Ill. Host: *Liriomyza felti* (Mall.).
- Chrysocharis*(?) *mallochi* Gahan, 1917. U. S. Natl. Mus., Proc. 53: 213. ♀, ♂.
- orientalis** (Girault). N. H., Mass. Host: *Phytomyza ilicicola* Loew.
- Omphalchrysocharis orientalis* Girault, 1917. *Descr. Hym. Chalcidoid. Variorum cum Observ.* V, p. 3. ♀.
- oscinidis** Ashmead. Kans. Ecology: Parasitizes dipterous leaf miners in cottonwood leaves.
- Chrysocharis oscinidis* Ashmead, 1888. *Kans. Agr. Expt. Sta., Bul.* 3: App. p. VIII. ♂.
- Taxonomy: Girault, 1916. U. S. Natl. Mus., Proc. 51: 42.
- pallipes** (Gahan). Ont., Conn., Md., Ohio, B. C. Host: *Rhynchaenus pallicornis* (Say); *Nepticula lindquisti* Freem., *Phyllocnistis populiella* Chamb.; *Mayetiola destructor* (Say); *Fenusa pusilla* (Lep.).
- Derostenus pallipes* Gahan, 1917. U. S. Natl. Mus., Proc. 53: 214. ♀.
- Taxonomy: Gahan, 1932. *Ent. Soc. Amer., Ann.* 25: 748.
- Biology: Lindquist, 1962. *Canad. Ent.* 94: 530. — Condrashoff, 1964. *Canad. Ent.* 96: 869.
- parksii** Crawford. N. Y., Idaho, Utah, Ariz., Calif. Host: *Agromyza parvicornis* Loew, *Cerodontha femoralis* (Meig.), *Liriomyza munda* Frick, *L. pictella* (Thomson), *Phytomyza atricornis* Meig.
- Chrysocharis parksii* Crawford, 1912. U. S. Natl. Mus., Proc. 43: 173. ♀, ♂.
- Biology: Webster and Parks, 1913. *Jour. Agr. Res.* 1: 79-80. — Harding, 1965. *Jour. Econ. Ent.* 58: 443.
- pubicornis** (Zetterstedt). Que., Ohio, Man., N. W. T., B. C.; Europe. Host: *Phytomyza ilicicola* Loew, *P. ilicis* Curtis.
- Entedon pubicornis* Zetterstedt, 1838. *Insect. Lappon.*, v. 1, p. 427. ♂.
- Entedon punctellus* Zetterstedt, 1838. *Insect. Lappon.*, v. 1, p. 431. ♂.
- Entedon cydon* Walker, 1839. *Monog. Chalcid.*, v. 1, p. 58. ♀.
- Entedon eropus* Walker, 1839. *Monog. Chalcid.*, v. 1, p. 75. ♂.
- Entedon syna* Walker, 1839. *Monog. Chalcid.*, v. 1, p. 98. ♀.
- Entedon amyrtaeus* Walker, 1839. *Monog. Chalcid.*, v. 1, p. 111. ♀, ♂.
- Entedon Hersilia* Walker, 1840. *Ann. and Mag. Nat. Hist.* 4: 235. ♂.
- Derostenus aeneiscapus* Thomson, 1878. *Hym. Scand.*, v. 5, p. 267. ♀, ♂.

- Taxonomy: Boucek and Askew, 1968. Index Palearctic Eulophidae (excl. Tetrastichinae), Le Francois, p. 116. — Yoshimoto, 1973. Canad. Ent. 105: 1400.
- salutaris** (Crosby). N. Y. Host: *Nepticula slingerlandella* Kearf.
Derostenus salutaris Crosby, 1911. Canad. Ent. 43: 414. ♂.
- Biology: Crosby, 1911. N. Y. (Cornell) Agr. Expt. Sta., Bul. 308: 222.
- thomsoni** (Crawford). Que., Ont., N. Y., Ind., Alaska, B. C. Host: *Phytobia angulata* (Loew), *P. incisa* (Meig.).
Entedon thomsoni Crawford, 1913. U. S. Natl. Mus., Proc. 45: 316. ♀, ♂.
- viridis** Provancher. Ont., Ohio. Ecology: Emerges from cynipid galls on *Lactuca*.
Chrysocharis viridis Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 209. ♀.
Chrysocharis compressicornis Ashmead, 1894. Cincinnati Soc. Nat. Hist., Jour. 17: 53. ♀.
- Taxonomy: Burks, 1964 (1963). Canad. Ent. 95: 1257.

Genus NEOCHRYSOCHARIS Kurdjumov

- Neochrysocharis* Kurdjumov, 1912. Ent. Obozr. 12: 234.
 Type-species: *Neochrysocharis immaculatus* Kurdjumov. Orig. desig.
- imbratus** (Walker). Fla.
Entedon imbratus Walker, 1847. Ann. and Mag. Nat. Hist. (1) 20: 23. ♀.
- Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 145.

Genus ENAYSMA Delucchi

Genus ENAYSMA Subgenus ENAYSMA Delucchi

- Enaysma* Delucchi, 1954. Neue Arten d. Subfam. Entedontinae, p. 1.
 Type-species: *Enaysma zwolferi* Delucchi. Orig. desig. The typical subgenus does not occur in N. Amer.

Genus ENAYSMA Subgenus PENTENAYSMA Graham

- Enaysma* subg. *Pentenaysma* Graham, 1959. Soc. Brit. Ent., Trans. 13: 196.
 Type-species: *Eulophus latreillei* Curtis. Orig. desig.
- Taxonomy: Miller, 1962. Canad. Ent. 94: 1039-1040.
- arienascapus** Miller. Que., Ont. Host: *Lithocolletis* sp., *L. ostryaefoliella* Clem.
Enaysma arienascapus Miller, 1962. Canad. Ent. 94: 1050. ♀, ♂.
- carioca** Miller. Que., Ont. Host: *Lithocolletis* sp.
Enaysma carioca Miller, 1962. Canad. Ent. 94: 1043. ♀, ♂.
- clypeata** Miller. Que. Host: *Lithocolletis* sp.
Enaysma clypeata Miller, 1962. Canad. Ent. 96: 1047, 1050. ♂.
- gahani** Miller. Que., Ont. Host: *Lithocolletis* sp., *L. lucetiella* Clem.
Enaysma gahani Miller, 1962. Canad. Ent. 94: 1041. ♀, ♂.
- hirtiscapus** Miller. Ont. Host: *Lithocolletis tiliacella* Chamb.
Enaysma hirtiscapus Miller, 1962. Canad. Ent. 94: 1047. ♀, ♂.
- myricae** Miller. N. S. Host: *Lithocolletis* sp.
Enaysma myricae Miller, 1962. Canad. Ent. 94: 1043-1047. ♀, ♂.

Genus MOSERINA Delucchi

- Moserina* Delucchi, 1962. Kans. Ent. Soc., Jour. 35: 389.
 Type-species: *Moserina maculata* Delucchi. Orig. desig.
- maculata** Delucchi. Ohio. Host: *Pachypsylla celtidismamma* (Riley), *P. celtidisvesicula* Riley.
Moserina maculata Delucchi, 1962. Kans. Ent. Soc., Jour. 35: 392. ♀, ♂.
- Biology: Moser, 1965. N. Y. State Mus. and Sci. Serv., Bul. 402: 14-15. — Rowan, 1971. Fla. Ent. 54: 63-64.

Genus ACHRYSOCHAROIDES Girault

Achrysocharoides Girault, 1913. Roy. Soc. So. Australia, Trans. 37: 72.

Type-species: *Chrysocharis sarcophagus* Girault. Orig. desig.

Neoderostenus Girault, 1913. Queensland Mus., Mem. 2: 144.

Type-species: *Neoderostenus australiensis* Girault. Orig. desig.

bipunctatus (Girault). Maine, Md. Host: *Lithocolletis tremuloidiella* Braun.

Neoderostenus bipunctatus Girault, 1916. Canad. Ent. 48: 409. ♀.

guizoti Girault. Ind.

Achrysocharoides guizoti Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. V, p. 11. ♀.

titiani Girault. Ind.

Achrysocharoides titiani Girault, 1916. U. S. Natl. Mus., Proc. 51: 42. ♀.

Genus RHICNOPELTOMYIA Girault

Rhinopeeltomyia Girault, 1913. Queensland Mus., Mem. 2: 174.

Type-species: *Rhinopeeltomyia washingtoni* Girault. Orig. desig.

achrysocharoides Girault. D. C.

Rhinopeeltomyia achrysocharoides Girault, 1916. U. S. Natl. Mus., Proc. 51: 39. ♀.

belisarii Girault. East. U. S.

Rhinopeeltomyia belisarii Girault, 1917. New Chalcid Flies, p. 4.

carlylei Girault. Md.

Rhinopeeltomyia carlylei Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. V, p. 6. ♀.

Rhinopeeltomyia carlylei var. *poeta* Girault, 1920. U. S. Natl. Mus., Proc. 58: 197. ♀. N. syn.

marylandensis Girault. Md.

Rhinopeeltomyia marylandensis Girault, 1916. U. S. Natl. Mus., Proc. 51: 39. ♀.

marylandi Girault. Md.

Rhinopeeltomyia marylandi Girault, 1917. New Chalcid Flies, pp. 4, 5.

Taxonomy: Girault, 1920. U. S. Natl. Mus., Proc. 58: 196.

scutellata Girault. D. C.

Rhinopeeltomyia scutellata Girault, 1916. U. S. Natl. Mus., Proc. 51: 40. ♀.

viridiscutellum Girault. D. C.

Rhinopeeltomyia viridiscutellum Girault, 1916. U. S. Natl. Mus., Proc. 51: 40. ♀.

Genus RHICNOPELTOIDEA Girault

Rhinopeultoidea Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. V, p. 3.

Type-species: *Rhinopeultoidea amsterdamensis* Girault. Orig. desig.

amsterdamensis Girault. Maine, N. Y., Ind. Host: *Lithocolletis corylisella* (Chamb.),

Cameraria guttifinitella (Clem.), *C. picturatella* Braun.

Rhinopeultoidea amsterdamensis Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. V, p. 3. ♀.

Genus CARLYLEIA Girault

Carlyleia Girault, 1917. Ent. News 28: 20.

Type-species: *Carlyleia marilandica* Girault. Orig. desig.

marilandica Girault. Md.

Carlyleia marilandica Girault, 1917. Ent. News 28: 20. ♀.

Genus CHRYSOCHAROMYIA Girault

Chrysocharomyia Girault, 1915. Queensland Mus., Mem. 3: 207.

Type-species: *Chrysocharomyia elongata* Girault. Orig. desig.

eleganta Girault. Md.*Chrysocharomyia eleganta* Girault, 1917. Ent. News 28: 21. ♀.**elegantissima** Girault. N. Y. Host: *Phytomyza obscurella* Fall.*Chrysocharomyia elegantissima* Girault, 1917. Descr. Stellarum Nov., p. 20. ♀.**occidentalis** Girault. Calif.*Chrysocharomyia occidentalis* Girault, 1916. U. S. Natl. Mus., Proc. 51: 41. ♀.**omari** Girault. Pa.*Chrysocharomyia omari* Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 9. ♀.**splendidissima** Girault. Pa.*Chrysocharomyia splendidissima* Girault, 1917. Descr. Stellarum Nov., p. 20. ♀.**Genus HOPLOCREPIS** Ashmead*Hoplocrepis* Ashmead, 1890. Ent. Soc. Wash., Proc. 1: 235.Type-species: *Hoplocrepis albiclavus* Ashmead. Orig. desig.**albiclavus** Ashmead. Mass., Fla.; West Indies.*Hoplocrepis albiclavus* Ashmead, 1890. Ent. Soc. Wash., Proc. 1: 236. ♀.**Genus PARACHRYSOCHARIS** Girault*Parachrysocharis* Girault, 1913. Queensland Mus., Mem. 2: 177.Type-species: *Parachrysocharis javensis* Girault. Orig. desig.**semiflava** Girault. Wis., Tex. Host: *Auplopus* sp.*Parachrysocharis semiflava* Girault, 1917. Canad. Ent. 49: 129. ♀, ♂.**Genus ACHRYSOCHARIS** Girault*Achrysocharis* Girault, 1913. Arch. f. Naturgesch. 79A (6): 104.Type-species: *Achrysocharis bifasciatus* Girault. Monotypic.

Taxonomy: Girault, 1913. Soc. Ent. 28: 100. —Girault, 1913. Queensland Mus., Mem. 2: 163.

aemilia Girault. Fla. Host: Cecidomyiid on *Eugenia buxifolia*.*Achrysocharis aemilia* Girault, 1917. New Chalcid Flies, p. 3. ♀.**athanasii** Girault. Md.*Achrysocharis athanasii* Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 3. ♀.**divina** Girault. Md.*Achrysocharis divina* Girault, 1917. Ent. News 2: 22. ♀.**donna** Girault. N. Y. Host: *Taphrocerus gracilis* (Say).*Achrysocharis donna* Girault, 1917. Descr. Stellarum Nov., p. 22. ♀.**kansensis** Girault. Minn., Kans. Host: *Schizocerella pilicornis* (Holmg.).*Achrysocharis(!) kansensis* Girault, 1916. U. S. Natl. Mus., Proc. 51: 42. ♀.**partifuscipennis** Girault. Md.*Achrysocharis partifuscipennis* Girault, 1916. Ent. Soc. Amer. Ann. 9: 294. ♀.**phenacaspia** Yoshimoto. Calif. Host: *Phenacaspis pinifoliae* (Fitch).*Achrysocharis phenacaspia(!)* Yoshimoto, 1972. Canad. Ent. 104: 1483. ♀.**Genus ACHRYSOCHARELLA** Girault*Achrysocharella* Girault, 1913. Queensland Mus., Mem. 2: 171.Type-species: *Achrysocharella dubia* Girault. Orig. desig.*Wolffiella* Krausse, 1917. Ztschr. f. Forst. u. Jagdw. 49: 29.Type-species: *Wolffiella ruforum* Krausse. Monotypic.

North American species that were placed in *Derostenus* Westwood are generically misplaced and belong here.

Revision: Crawford, 1912. U. S. Natl. Mus., Proc. 43: 179 (*Derostenus*).

acuminaticornis Girault, D. C.*Achrysocharella acuminaticornis* Girault, 1916. U. S. Natl. Mus., Proc. 51: 50. ♀.**acuminativentris** Girault, D. C.*Achrysocharella acuminativentris* Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 6. ♀.**agromyzae** (Crawford). N. Y., s. to Fla., w. to N. Dak. and Ariz. Host: *Agromyza* sp., *Liriomyza sorosis* (Will.); *Mantura floridana* (Crotch).*Derostenus agromyzae* Crawford, 1913. U. S. Natl. Mus., Proc. 45: 314, 315. ♀, ♂.**americana** Girault, D. C.*Achrysocharella americana* Girault, 1916. Ent. Soc. Amer., Ann. 9: 295.**arizonensis** (Crawford). Utah, Ariz., Calif. Host: *Agromyza* sp., *Liriomyza pictella* (Thomson).*Derostenus arizonensis* Crawford, 1913. U. S. Natl. Mus., Proc. 45: 315. ♀, ♂.

Biology: Webster and Parks, 1913. Jour. Agr. Res. 1: 80.

damastes (Walker). Fla.*Closterocerus Damastes* Walker, 1847. Ann. and Mag. Nat. Hist. (1) 20: 22. ♀.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 142.

diastatae (Howard). Conn. to Fla. and Kans. Host: *Agromyza parvicornis* Loew, *Diastata* sp., *Phytobia angulata* (Loew); *Fenusa pusilla* (Lep.).*Entedon diastatae* Howard, 1881. U. S. Dept. Agr., Ann. Rpt. for 1880, p. 246. ♀, ♂.

Biology: Phillips, 1914. Jour. Agr. Res. 2: 26-27.

fullawayi (Crawford). Conn., Va., La., S. Dak., Calif.; Hawaii, Mexico. Host: *Argyresthia thuella* (Pack.); *Agromyza parvicornis* Loew; *Fenusa pusilla* (Lep.).*Derostenus fullawayi* (!) Crawford, 1913. U. S. Natl. Mus., Proc. 46: 348. ♀.*Achrysocharis camilli* Girault, 1917. New Chalcid Flies, p. 5.*Derostenus fullawayi* Glick, 1939. U. S. Dept. Agr., Tech. Bul. 673: 47. Emend.

Taxonomy: Girault, 1920. U. S. Natl. Mus., Proc. 58: 196.

Biology: Underhill, 1943. Va. Agr. Expt. Sta., Bul. 349: 22.

leucopus (Ashmead). Ohio, Kans. Ecology: Reared from leaf miner on beech.*Derostenus leucopus* Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App. p. VIII. ♀.**obscurinotata** Girault, Md.*Achrysocharella obscurinotata* Girault, 1916. Ent. Soc. Amer., Ann. 9: 306. ♀.**partiaeneiceps** Girault, Md.*Achrysocharella partiaeneiceps* Girault, 1917. New Eulophidae, p. 1. ♀.**pictipes** (Crawford). Md., S. C., Ind., Kans., Colo., Utah. Host: *Agromyza* sp., *Phytobia lateralis* (Macq.).*Derostenus pictipes* Crawford, 1912. U. S. Natl. Mus., Proc. 43: 180. ♀, ♂.**pulchrella** Girault, D. C.*Achrysocharella pulchrella* Girault, 1917. Psyche 24: 94. ♀.**punctiventris** (Crawford). Ind., Wyo., Utah, Idaho, Calif. Host: *Agromyza parvicornis* Loew, *Liriomyza* sp.*Derostenus punctiventris* Crawford, 1912. U. S. Natl. Mus., Proc. 43: 180. ♀.

Biology: Phillips, 1914. Jour. Agr. Res. 2: 28.

silvia Girault. Maine, s. to Md., w. to Wis., Calif. Host: *Coleophora laricella* (Hbn.),*Coleotechnites apictripunctella* (Clem.), *C. milleri* (Busck), *Exoteleia pinifoliella* (Chamb.), *Tetralopha robustella* Zell.*Achrysocharella silvia* Girault, 1917. Two New Achrysocharellae, p. 1. ♀.

Taxonomy: Girault, 1920. U. S. Natl. Mus., Proc. 58: 197.

Biology: Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 85.

variipes (Crawford). N. Y., s. to Fla., w. to Mich., La., Tex. Host: *Agromyza* sp.*Derostenus variipes* Crawford, 1913. U. S. Natl. Mus., Proc. 45: 315. ♀.

Taxonomy: Gahan, 1914. U. S. Natl. Mus., Proc. 48: 164.

Genus **LOPHOCOMUS** Haliday

Lophocomus Haliday, 1844 (1843). Ent. Soc. London, Trans. 3: 297.

Type-species: *Cirrospilus anaitis* Walker. Monotypic.

verticillatus Ashmead. Kans.

Lophocomus verticillatus Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App. p. VIII. ♂.

Genus **HORISMENUS** Walker

Horismenus Walker, 1843. Ann. and Mag. Nat. Hist. 11: 117.

Type-species: *Horismenus cleodora* Walker. Monotypic.

Horisemus Crawford, 1907. N. Y. Ent. Soc., Jour. 15: 180. Undoubtedly an error for

Horismenus, but published in such a way as to validate it as a generic name in Zoology.

Type-species: *Horisemus lixivorus* Crawford. Monotypic.

Pseudomphale Schrottky, 1909. Soc. Cient. Argentina, An. 67: 209.

Type-species: *Pseudomphale opsiphanis* Schrottky. Monotypic.

Pediobioidea Girault, 1911. Canad. Ent. 43: 407.

Type-species: *Pediobioidea cyanea* Girault. Monotypic. Synonymized under *Horismenus* when described.

Triolynx Cameron, 1913. Timehri, R. Agr. Com. Soc. Brit. Guiana, Jour. 3: 130.

Type-species: *Triolynx clavicornis* Cameron. Monotypic.

Akonda Cameron, 1913, Timehri, R. Agr. Com. Soc. Brit. Guiana, Jour. 3: 131.

Type-species: *Akonda hipparchia* Cameron. Monotypic.

Perhymenes Brethes, 1916. Buenos Aires Mus. Nac. de Hist. Nat., An. 27: 427.

Type-species: *Perhymenes schrottkyi* Brethes. Monotypic.

Dirphiphagus Brethes, 1917. An. Zool. Apl. 4: 25.

Type-species: *Dirphiphagus ancilla* Brethes. Orig. desig.

Holcopeltomorpha Blanchard, 1942. Soc. Cient. Argentina, An. 134: 126.

Type-species: *Holcopeltomorpha christenseni* Blanchard. Orig. desig.

Revision: Burks, 1971. Ent. Soc. Wash., Proc. 73: 68-83.

Taxonomy: Boucek, 1965. Mus. Natl. Pragae, Acta Ent. 36: 84 (synonymy). — De Santis, 1968 (1967). Cat. Hym. Argentinos, Buenos Aires, p. 141 (synonymy).

atroscapus (Girault). N. C., Fla. Host: *Acrobasis rubrifasciella* (Pack.), *Tetralopha subcanalis* (Walk.).

Pseudomphale atroscapus Girault, 1917. Descr. Stellarum Nov., p. 20. ♀.

bruchophagus Burks. Tex. Host: *Mimosstes sallei* (Sharp).

Horismenus bruchophagus Burks, 1971. Ent. Soc. Wash., Proc. 73: 72. ♀, ♂.

carolinensis Burks. N. C. Host: *Chrysobothris femorata* (Oliv.), *Oncideres cingulata* (Say).

Despite these seemingly reliable host records, this species probably is actually a secondary parasite.

Horismenus carolinensis Burks, 1971. Ent. Soc. Wash., Proc. 73: 73. ♀, ♂.

depressus Gahan. Tex., Calif. Host: *Bruchus* sp., *Stator pruininus* (Horn).

Horismenus depressus Gahan, 1930. U. S. Natl. Mus., Proc. 77 (8): 8. ♀, ♂.

floridana (Ashmead). N. J., s. to Fla., w. to Ill., Kans., Tex., Calif. Host: *Apanteles* sp., *A. schizurae* Ashm.

Holcopelte floridana Ashmead, 1888. Canad. Ent. 20: 102. ♀.

Biology: Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 128. — Gilmore, 1938. Jour.

Econ. Ent. 31: 715. — Fulton, 1940. Ent. Soc. Amer., Ann. 32: 233. — Nickels, 1951. Jour.

Econ. Ent. 44: 434. — Painter, 1955. Jour. Econ. Ent. 48: 41.

fraternus (Fitch). Conn., s. to Fla., w. to Wis., Kans., Tex. Host: *Coleophora pruniella* Clem., *Cameraria caryaefoliella* (Clem.), *Parornix geminatella* (Pack.), *Tischeria malifoliella* (Clem.); *Apanteles* sp., *Euplectrus comstockii* How., *Sympiesis* sp.

Trichogramma? *fraternus* Fitch, 1856. Country Gentleman 7: 235.

Elachistus euplectri Howard, 1885. In Riley, U. S. Dept. Agr., Ent. Comn., Rpt. 4,

Appendix, p. 108. ♀, ♂.

Holcopelte violacea Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 200. ♀.

Taxonomy: Packard, 1890. U. S. Dept. Agr., Ent. Comn., Rpt. 5, p. 265.

Biology: Dunnam, 1924. Iowa Agr. Expt. Sta., Bul. 220: 65. —Doner, 1936. Ent. Soc. Amer., Ann. 29: 234. —Copenhafer and Parker, 1938. Kans. Ent. Soc., Jour. 11: 46. —Glick, 1939. U. S. Dept. Agr., Tech. Bul. 673: 48. —Nickels, 1948. Jour. Econ. Ent. 4: 114. —Beckham *et al.*, 1950. Va. Agr. Expt. Sta., Tech. Bul. 114: 12. —Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 85.

ignotus Burks. Fla. Host: *Homaledra sabalella* (Chamb.).

Horismenus ignotus Burks, 1971. Ent. Soc. Wash., Proc. 73: 76. ♀.

latroducti Burks. Tex. Ecology: A secondary parasite in egg sacs of the black widow spider, probably parasitizing a chloropid fly, *Pseudogaurax signatus* (Loew), the primary parasite.

Horismenus latroducti Burks, 1971. Ent. Soc. Wash., Proc. 73: 77. ♀, ♂.

livivorus Crawford, Tex., Ariz. Host: *Lixus musculus* Say, *L. perforatus* LeC., *L. scrobicollis* Boh.

Horismenus (!) *livivorus* Crawford, 1907. N. Y. Ent. Soc., Jour. 15: 180. ♀, ♂.

Biology: Pierce, 1910. Jour. Econ. Ent. 3: 453.

microgaster (Ashmead). Maine, s. to N. C., w. to Iowa, Kans., Tex. Host: *Apion decoloratum* Smith; *Acleris minuta* (Rob.), *Anchylopera nebulana* Clem., *Ancylys comptana fragariae* (W. and R.), *Celama sorghiella* (Riley), *Choristoneura rosaceana* (Har.), *Colaphora laticella* (Hbn.), *C. malivorella* Riley, *Dichomeris marginella* (F.), *Exoteleia pinifoliella* (Chamb.), *Parornix geminatella* (Pack.), *Phyllocnistis populiella* Chamb., *Pterophorus periscelidactylus* Fitch, *Tetralopha robustella* Zell.; *Apanteles* sp., *A. congregatus* (Say), *A. glomeratus* (L.), *A. melanoscclus* (Ratz.), *Chorinaeus* sp., *Microgaster* sp., *Microplitis ceratoniae* Riley, *Oncophanes americanus* (Weed).

Holcopelte microgaster Ashmead, 1888. Canad. Ent. 20: 102. ♂.

Pediobiodea cyanea Girault, 1911. Canad. Ent. 43: 407. ♀, ♂.

Pseudomphale ancylae Girault, 1916. Ent. News 27: 223. ♀, ♂.

Biology: Leach, 1916. U. S. Dept. Agr., Bul. 435: 11. —Proper, 1934. Jour. Agr. Res. 48: 365. —Hill and Hough, 1957. Va. Agr. Expt. Sta., Tech. Bul. 130: 16. —Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 85.

missouriensis (Ashmead). N. Y., s. to Ga., w. to S. Dak., Kans., Okla., Ariz. Host:

Acanthoscelides sp., *Amblycerus* sp., *Gibbobruchus* sp.

Holcopelte missouriensis Ashmead, 1888. Canad. Ent. 20: 101. ♀.

Holcopelte popenoei Ashmead, 1888. Canad. Ent. 20: 101. ♀.

Taxonomy: Girault, 1934. Miridae et Hym. Nova Austral., p. 3 (synonymy).

nitens (Howard). D. C. Ecology: A secondary parasite in egg sacs of epeirid spiders.

Holcopelte nitens Howard, 1892. Ent. Soc. Wash., Proc. 2: 298. ♀, ♂.

productus (Ashmead). Tex., N. Mex., Ariz., Calif. Host: *Acanthoscelides horni* (Pic), *Algarobius prosopis* (LeC.), *Mimosestes amicus* (Horn).

Holcopelte producta Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 342. ♀, ♂.

sardus (Walker). Fla.

Entedon (*Horismenus*) *sardus* Walker, 1847. Ann. and Mag. Nat. Hist. (1) 20: 23. ♀.

Taxonomy: Burks, 1975. Brit. Mus. (Nat. Hist.) Ent., Bul. 32 (4): 147.

Elachristus (!) *flavipes* Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 133. ♀.

texanus (Girault). Conn., s. to Ga., w. to Iowa, Kans., Ariz. Ecology: A parasite of small Diptera living in grass stems. Host: *Eumetopiella rufipes* (Macq.), *Mayetiola destructor* (Say), *Meromyza americana* Fitch.

Pseudomphale texana Girault, 1917 (1916). Insecutor Inscitiae Menstruus 4: 120. ♀.

Biology: Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 128.

Genus PEDIIBIUS Walker

Pediobius Walker, 1846. Ann. and Mag. Nat. Hist. (1) 17: 184.

Type-species: *Entedon* (*Pediobius*) *imbreus* Walker. Desig. by Ashmead, 1904, p. 384. Incorrectly desig. on p. 344.

Rhopalotus Foerster, 1856. Hym. Stud., v. 2, p. 78.

Type-species: *Elachertus cothurnatus* Ratzeburg. Desig. by Ashmead, 1904.

Pleurotropis Foerster, 1856. Hym. Stud., v. 2, pp. 78, 82. No species. — Foerster, 1861. Progr. Realsch. Aachen, p. xxxvii, no. 58. One species.

Type-species: *Pleurotropis isomera* Foerster. Included by Foerster, 1861.

Cluthaira Cameron, 1912. Linn. Soc. New South Wales, Proc. 37: 211.

Type-species: *Cluthaira agaristae* Cameron. Monotypic.

Pseudacrias Girault, 1913. Arch. f. Naturgesch. 79A (6): 104.

Type-species: *Pseudacrias micans* Girault. Orig. desig.

Mestocharomyia Girault, 1915. Queensland Mus., Mem. 3: 188.

Type-species: *Mestocharomyia lividus* Girault. Orig. desig.

Eupleurotropis Girault, 1917. Speciosissima Genera Nova Eulophidorum, p. 3.

Type-species: *Pleurotropis testaceipes* Crawford. Orig. desig.

Pseudacriasoides Girault, 1917. Descr. Stellarum Nov., p. 9.

Type-species: *Pleurotropis utahensis* Crawford. Orig. desig.

Epipleurotropis Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 7.

Type-species: *Epipleurotropis longfellowi* Girault. Orig. desig.

Boucek, 1965 (Mus. Nat. Pragae, Acta Ent. 36: 7) states that *Microterus* Spinola, 1811, is very likely the same as *Pediobius* Walker, 1846, and should, thus, have priority. He decided, however, to continue to use *Pediobius* as the name of this genus because of usage and because *Microterus* is a long forgotten name. In my opinion the case for recognizing *Microterus* is very weak, at least on the basis of the presently available information. If a case to present to the Commission were drawn up, the only name for this genus that could be retained on the basis of usage is *Pleurotropis* Foerster, 1856. That is the name that was used for it for over a century.

Revision: Crawford, 1912. U. S. Natl. Mus., Proc. 43: 177-179 (*Pleurotropis*). — Boucek, 1965. Mus. Nat. Pragae, Acta Ent. 36: 5-90 (Palearctic fauna). — Burks, 1966. Ent. Soc. Wash., Proc. 68: 33-43.

Taxonomy: Waterston, 1915. Bul. Ent. Res. 5: 343-346. — Ferriere, 1953. Univ. Bologna, Ist. di Ent., Bol. 19: 400. — Graham, 1959. Soc. Brit. Ent., Trans. 13: 186. — Boucek, 1965. Mus. Natl. Pragae, Acta Ent. 36: 7-10. — Boucek and Askew, 1968. Index Palearctic Eulophidae (excl. Tetrastichinae), Le Francois, p. 88.

albipes (Provancher). Maine, Ont., s. to Va., w. to Ill. Host: *Apanteles congregatus* (Say), *Dibrachys cavus* (Walk.), *Eupteromalus peregrinus* Graham.

Holcopelte albipes Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 210. ♂.

Entedon albitarsis Ashmead, 1888. Canad. Ent. 20: 102, 103. ♀, ♂.

Taxonomy: Girault, 1924. Insecutor Inscitiae Menstruus 12: 94. — Burks, 1964 (1963), Canad. Ent. 95: 1259.

aphidiphagus (Ashmead). Que., Fla., Ind., Ill., Kans. Ecology: Parasitic on tineid larvae in oak galls; reared from galls of *Amphibolips quercusinanis* (O. S.) and *A. quercusspongifica* (O. S.).

Entedon aphidiphagus Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 201. ♀.

Asecodes quericola Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App. p. VIII. ♀, ♂.

Taxonomy: Gahan, 1951. Canad. Ent. 83: 170.

bucculatricis (Gahan). Que., Maine, Conn. Host: *Bucculatrix canadensisella* (Chamb.), *Phyllocnistis populiella* Chamb.; *Xenochalepus dorsalis* (Thunb.).

Pleurotropis bucculatricis Gahan, 1927. Psyche 34: 171. ♀, ♂.

Biology: Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 85.

chloropidis Burks. N. Y., W. Va. Ecology: Parasitizes chloropid flies that are egg-predators on bagworms. Host: *Pseudogaurax* sp., *P. anchora* (Loew).

Pediobius chloropidis Burks, 1966. Ent. Soc. Wash., Proc. 68: 42. ♀, ♂.

crocidophorae Burks. S. C., La. Host: *Crocidophora pustuliferalis* Led.

Pediobius crocidophorae Burks, 1966. Ent. Soc. Wash., Proc. 68: 36. ♀, ♂.

lithocolletidis (Ashmead). Maine, Conn., Va., N. C., Ind., Ill., Kans. Host: *Anthonomus nigrinus* Boh.; *Argyresthia thuiella* (Pack.), *Cameraria guttifinitella* (Clem.), *Lithocolletis* sp.; *Phytobia jucunda* (Wulp), *Phytomyza ilicis* Curt.

Entedon lithocolletidis Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App. p. VIII. ♀, ♂.

Biology: Fitzgerald and Simeone, 1971. Ent. Soc. Amer., Ann. 64: 770-773.

lonchaeae Burks. Maine, Ont., N. H., Mass., N. Y., N. J., Pa. Ecology: Parasitizes fly larvae (prob. *Lonchaea corticis* Taylor) that invade burrows of the weevil *Pissodes strobi* (Peck), in terminal growth of white pine. Host: *Lonchaea* sp.

Pediobius lonchaeae Burks, 1966. Ent. Soc. Wash., Proc. 68: 37. ♀, ♂.

longfellowi (Girault). Maine, Pa. Host: *Cameraria aceriella* (Clem.), *Lithocolletis* sp.

Epileurotropis longfellowi Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. III, p. 7. ♀.

longus (Girault). Ind. Ecology: Reared from canary grass, *Phalaris* sp., that also yielded *Harmolita longicornis* (Walker).

Pleurotropis longus Girault, 1916. Canad. Ent. 48: 342. ♀.

metallicus (Nees). Most areas in North America where wheat is grown; Europe. Introduced for biological control into the Midwest and Maryland, from England, in 1891-1894. Host: *Mayetiola destructor* (Say).

Eulophus metallicus Nees, 1834. Hym. Ichn. Affin. Monog., v. 2, p. 176. ♀, ♂.

Entedon Epigonus Walker, 1839. Monog. Chalcid., v. 1, p. 112. ♀, ♂.

Semiotellus nigripes Lindeman, 1887. Soc. Imp. Nat. Mosc., Bul. (2) 1: 179, 185, 192.

Taxonomy: Walker, 1848. List Hym. Ins. Brit. Mus., v. 2, p. 136. —Forbes, 1892. U. S. Dept. Agr., Insect Life 5: 72. —Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 132 (*metallicus*). —Ferriere, 1953. Univ. Bologna, Ist. di Ent., Bol. 19: 400. —Graham, 1959. Soc. Brit. Ent., Trans. 13: 191. —Boucek, 1965. Mus. Natl. Pragae, Acta Ent. 36: 65 (*epigonus*).

Biology: Riley, 1892. U. S. Dept. Agr., Ann. Rpt. for 1891, p. 235. —Riley, 1893. U. S. Dept. Agr., Ann. Rpt. for 1892, p. 158. —Riley, 1893. U. S. Dept. Agr., Insect Life 6: 133.

—Osborn, 1898. U. S. Dept. Agr., Div. Ent. Bul. 16: 28, 38-41. —Howard and Fiske, 1911.

U. S. Dept. Agr., Bur. Ent. Bul. 91: 30. —McConnell, 1916. Jour. Econ. Ent. 9: 145. —Wade

and Myers, 1921. Ent. Soc. Wash., Proc. 23: 202. —Howard, 1924. Natl. Acad. Sci., Proc. 10:

18. —Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 132. —Hill *et al.*, 1939. U. S.

Dept. Agr., Tech. Bul. 689: 4-15. —Hill and Pinckney, 1940. U. S. Dept. Agr., Tech. Bul.

715: 9-13. —Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139: 123.

nawai (Ashmead). Ont., New England; Europe, Japan. Introduced inadvertently from Europe, along with parasites of the gypsy moth, before 1920. Host: *Apanteles melanoscelus* (Ratz.), *Dibrachys cavius* (Walk.), *Eupteromalus peregrinus* Graham; *Compsilura concinnata* (Meig.).

Derostenus nawai Ashmead, 1904. N. Y. Ent. Soc., Jour. 12: 160. ♀, ♂.

Biology: Muesebeck and Dohanian, 1927. U. S. Dept. Agr., Bul. 1487: 12, 31-32. —Proper, 1934. Jour. Agr. Res. 48: 362-375. —Haeussler, 1940. U. S. Dept. Agr., Tech. Bul. 728: 33.

—Arthur, 1962. Canad. Ent. 941: 1087.

niger (Ashmead). Ill., Fla.

Closterocerus niger Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 232. ♂.

nigritarsis (Thomson). Que., Ont., s. to Va., w. to Alta. and S. Dak. Introduced for biological control from Europe in 1935, but it was already here as an apparently different species. Host: *Mayetiola destructor* (Say); *Cephus cinctus* Nort., *C. pygmaeus* (L.), *Trachelus tabidus* (F.).

Pleurotropis nigritarsis Thomson, 1878. Hym. Scand., v. 5, p. 251. ♀, ♂.

Pleurotropis benefica Gahan, 1921. Ent. Soc. Wash., Proc. 23: 117. ♀, ♂.

Taxonomy: Gahan, 1932. Ent. Soc. Amer., Ann. 25: 751. —Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 131. —von Rosen, 1956. K. Lantbrukshog, Ann. 23: 19. —Graham, 1959. Soc. Brit. Ent., Trans. 13: 190.

- Biology: Gahan, 1920. U. S. Dept. Agr., Bul. 834: 12 (*Pleurotropis* sp.). —Salt, 1931. Bul. Ent. Res. 22: 534-541. —Baird, 1940 (1939). Ent. Soc. Ont., Ann. Rpt. 70: 53. —Udine, 1941. U. S. Dept. Agr., Cir. 607: 7. —Smith, 1949 (1947). Ent. Soc. Ont., Ann. Rpt. 78: 39-42. —Smith, 1959. Canad. Ent. 91: 699-701. —von Rosen, 1959. Ent. Tidskr. 80: 163.
- perdubius** (Girault). Utah.
Amestocharis perdubius Girault, 1917. Descr. Stellarum Nov., p. 8. ♀.
- phyllostretae** (Riley). Mo., La. Host: *Phyllostreta zimmermanni* (Crotch).
Pleurotropis phyllostretae Riley, 1885. U. S. Dept. Agr., Ann. Rpt. for 1884, p. 307. ♀, ♂.
- rugosithorax** (Crawford). Ind., Kans., Utah. Host: *Agromyza* sp., *Phytobia angulata* (Loew).
Pleurotropis rugosithorax Crawford, 1912. U. S. Natl. Mus., Proc. 43: 179. ♀, ♂.
Pleurotropis kansensis Girault, 1918. Ent. News 29: 128. ♀.
- Biology: Webster and Parks, 1913. Jour. Agr. Res. 1: 82, 84.
- sexdentatus** (Girault). Mass., N. J., Ohio, N. C., Kans. Ecology: A primary or secondary parasite of small Lepidoptera. Host: *Acrobasis comptoniella* Hulst, *Ancylys comptana fragariae* (W. and R.), *Meteorus* sp.
Pseudacrias sexdentatus Girault, 1916. Soc. Ent. 31: 36. ♀.
- Biology: Patterson, 1915. Biol. Bul. 29: 340-341. —Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 86.
- singularis** (Howard). D. C. Host: *Cameraria hamadryadella* (Clem.). Described from the pupa; recognizably a *Pediobius* but cannot be specifically placed at present.
Chrysocharis singularis Howard, 1882. Amer. Nat. 16: 61.
- Biology: Howard, 1891. U. S. Dept. Agr., Insect Life 4: 194.
- splendens** (Cook and Davis). Mich. Host: *Eulophus* sp.
Derostenus splendens Cook and Davis, 1891. Mich. Agr. Expt. Sta., Bul. 73: 13. ♂, ♀.
- tarsalis** (Ashmead). N. H., s. to N. C., w. to Wash., Oreg., Calif. Ecology: A common secondary parasite of Lepidoptera. Host: *Compsilura concinnata* (Meig.), *Winthemia datanae* (Twins.); *Apanteles clisiocampae* Ashm., *A. hyphantriae* Riley, *A. lacteicolor* Vier., *A. melanoscelus* (Ratz.), *Bracon gelechiæ* Ashm., *Casinarina limenitidis* (How.), *Dibrachys cavus* (Walk.), *Dimmockia incongrua* (Ashm.), *D. pallipes* Mues., *Eupelmella vesicularis* (Retz.), *Eupelmus* sp., *Eupteromalus peregrinus* Graham, *Eurytoma* sp., *Gambrus extrematis* (Cress.), *Gelis tenellus* (Say), *Habrocytus phycidis* Ashm., *Hyposoter fugitivus* (Say), *Iseropus coelebs* (Walsh), *Itopectis conquistator* (Say), *Mastrus* sp., *Phobocampe clisiocampae* (Weed), *Rogas stigmator* (Say), *Schizonotus latus* (Walk.).
Asecodes albitarsis Ashmead, 1888. Canad. Ent. 20: 103. ♀. Preocc. by Ashmead, 1888.
Holcopelte tarsalis Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 341. ♂, ♀.
Pleurotropis ashmeadi Crawford, 1912. U. S. Natl. Mus., Proc. 43: 177. N. name, for *albitarsis*.
- Taxonomy: Gahan, 1927. U. S. Natl. Mus., Proc. 71 (4): 26.
- Biology: Fiske, 1903. N. H. Agr. Expt. Sta., Tech. Bul. 6: 182, 206, 213, 229. —Smith, 1916. Jour. Econ. Ent. 9: 484. —Muesebeck and Dohanian, 1927. U. S. Dept. Agr., Bul. 1487: 12, 31. —Proper, 1934. Jour. Agr. Res. 48: 361-370. —Marsh, 1937. Ecology 18: 108-111. —Dowden, 1939. Jour. Agr. Res. 58: 591. —Reeks and Smith, 1956. Canad. Ent. 88: 572. —Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 86.
- testaceipes** (Crawford). S. C.
Pleurotropis testaceipes Crawford, 1914. Insecutor Inscitiae Menstruus 2: 37. ♀.
- utahensis** (Crawford). Maine, Man., N. Dak., Mont., Utah. Host: *Cephus cinctus* Nort.
 Originally described as a parasite of an agromyzid, but that was a mistake.
Pleurotropis utahensis Crawford, 1913. U. S. Natl. Mus., Proc. 45: 316. ♀, ♂.
- Taxonomy: Phillips, 1914. Jour. Agr. Res. 2: 28. —Gahan, 1921. Ent. Soc. Wash., Proc. 23: 113-117.
- Biology: Ainslie, 1920. U. S. Dept. Agr., Bul. 841: 23-24. —Ainslie, 1929. U. S. Dept. Agr., Tech. Bul. 157: 19-20. —Munro *et al.*, 1949. N. Dak. Agr. Expt. Sta., Bimon. Bul. 11: 90. —Nielson, 1949. Canad. Ent. 81: 174-180. —Davis *et al.*, 1955. N. Dak. Agr. Expt. Sta., Bimon. Bul. 18: 64-65.

wilderi (Howard). Que., N. Y., Pa., D. C., Md., S. C., Ga., Minn., Ark., Calif. Ecology: A secondary parasite in spider egg sacs, emerging from ichneumonid cocoons. Host: *Gelis* sp., *Tromatobia rufopectus* (Cress.).

Mestocharis wilderi Howard, 1892. Ent. Soc. Wash., Proc. 2: 298. ♀, ♂.

Taxonomy: Girault, 1911. N. Y. Ent. Soc., Jour. 19: 179. —Crawford, 1912. U. S. Natl. Mus., Proc. 43: 179.

williamsoni (Girault). N. J., Ill., N. Dak., Utah. Ecology: Parasitizes conopid flies that develop in bumblebee nests. Host: *Phyocephala sagittaria* (Say), *P. texana* (Will.).

Mestocharis williamsoni Girault, 1911. N. Y. Ent. Soc., Jour. 19: 179. ♀, ♂.

Taxonomy: Frison, 1926. Ent. Soc. Amer., Ann. 19: 222, 232. —Frison, 1927. Ill. State Nat. Hist. Survey, Bul. 16: 222.

Genus ENTEDON Dalman

Entedon Dalman, 1820. Svenska Vetensk. Akad., Handl. 41: 136, 181.

Type-species: *Entedon cyanellus* Dalman. Desig. by Ashmead, 1904.

Eriglyptus Crawford, 1907. N. Y. Ent. Soc., Jour. 15: 179.

Type-species: *Eriglyptus robustus* Crawford. Orig. desig.

Entedonella Girault, 1913. Queensland Mus., Mem. 2: 154.

Type-species: *Entedonella magnifica* Girault. Orig. desig.

Revision: Girault, 1922. No. Amer. spp. of *Emersonella* and *Entedon*, 1 page. —Graham, 1971. Roy. Ent. Soc. London, Trans. 123: 313-358 (British Fauna).

Taxonomy: Girault, 1917 (1916). Insecutor Inscitiae Menstruus 4: 110 (synonymy).

—Hedqvist, 1963. Stud. Forest. Suecica 11: 144.

bigeloviae Ashmead. Kans., N. Mex., Utah, Ariz., Oreg. Host: *Aciurina bigeloviae* (Ckll.).

Entedon bigeloviae Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 342. ♀.

columbianus Ashmead. D. C.

Entedon columbiana Ashmead, 1888. Canad. Ent. 20: 103. ♀.

leucogramma (Ratzeburg). Conn., N. Y., Pa., Va., N. C., S. C., Ohio, Ind., Iowa, La., Calif.; Europe. Introduced from Europe for biological control. Host: *Scolytus multistriatus* (Marsh.), *S. rugulosus* (Ratz.).

Ichneumon (*Elachestus*) *Leucogramma* Ratzeburg, 1844. Forst.-Ins. d. Wald. Preuss., v. 3, p. 28. ♂.

Taxonomy: Erdos, 1944. Species Hung. Entedon Dalm., Kalocsa, Hung., p. 43. —Hedqvist, 1963. Stud. Forest. Suecica 11: 145-146. —Graham, 1963. Soc. Brit. Ent., Trans. 15: 194-195. —Boucek, 1965. Mus. Natl. Pragae, Acta Ent. 36: 34.

Biology: Pechuman, 1937. Brooklyn Ent. Soc., Bul. 32: 17. —Hoffman, 1942. U. S. Dept. Agr., Misc. Pub. 466: 20. —Beal and Massey, 1945. Duke Univ., Forestry Bul. 10: 67. —Leuchs, 1955. Ztschr. f. Pflanzenkrank. 62: 550. —Saunders, 1957. Ent. Monthly Mag. 93: 273.

—Capek, 1963. Banská Stávk. Vyskum Ústav Les. Hosped. Ved. Práce 4: 269. —Beaver, 1966. Roy. Ent. Soc. London, Proc. (A) 41: 37. —Beaver, 1967. Jour. Anim. Ecol. 36: 437.

leucopus (Ashmead). Fla.

Pleurotropis leucopus Ashmead, 1888. Canad. Ent. 20: 102. ♀.

occidentalis Girault. Utah, Oreg., Calif.

Entedon occidentalis Girault, 1916. U. S. Natl. Mus., Proc. 51: 48. ♀.

robustus (Crawford). D. C. Host: *Anthonomus nigrinus* Boh.

Eriglyptus robustus Crawford, 1907. N. Y. Ent. Soc., Jour. 15: 180. ♀, ♂.

tachypterelli Gahan. N. Y., Colo. Host: *Tachypterellus consors cerasi* List, *T. quadrigibbus* (Say).

Entedon tachypterelli Gahan, 1931. Wash. Acad. Sci., Proc. 21: 38. ♀, ♂.

Biology: List, 1932. Colo. Agr. Expt. Sta., Bul. 385: 59, 61-62. —Hammar, 1936. N. Y. State Agr. Expt. Sta., Tech. Bul. 240: 44-45.

washingtoni Girault. D. C.

Entedon washingtoni Girault, 1917 (1916). Insecutor Inscitiae Menstruus 4: 109. ♀.

Genus PARACRIAS Ashmead

Paracrias Ashmead, 1904. Carnegie Mus., Mem. 1: 343, 344, 510.

Type-species: *Paracrias laticeps* Ashmead. Orig. desig.

Euplectrentedon Girault, 1917. Speciosissima Genera Nova Eulophidorum, p. 3.

Type-species: *Euplectrentedon mirus* Girault. Orig. desig.

mirus (Girault). N. Y., Ohio, Iowa. Host: *Thysanocnemis* sp.

Euplectrentedon mirus Girault, 1917. Speciosissima Genera Nova Eulophidorum, p. 3. ♀.

Genus CHRYSNOTOMYIA Ashmead

Chrysonotomyia Ashmead, 1904. Carnegie Mus., Mem. 1: 344, 370.

Type-species: *Eulophus auripunctatus* Ashmead. Orig. desig.

auripunctata (Ashmead). Fla.; West Indies. Ecology: Develops as parasite in galls on

Coccolobus uvifera and *Pithecolobium*. Host: *Ctenodactylomyia watsoni* Felt.

Eulophus auripunctatus Ashmead, 1894. Linn. Soc. London, Jour., Zool. 25: 166. ♀.

Genus EMERSONOPSIS Girault

Emersonopsis Girault, 1917. Canad. Ent. 49: 110.

Type-species: *Entedon arizonensis* Ashmead. Orig. desig.

Revision: Girault, 1924. Insecutor Inscitiae Menstruus 12: 93.

arizonensis (Ashmead). N. Dak., Idaho, Utah, Ariz.

Entedon arizonensis Ashmead, 1888. Canad. Ent. 20: 103. ♀.

cupreicollis (Ashmead). Kans.

Entedon cupreicollis Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App. p. VIII. ♀, ♂.

Genus NESOMYIA Ashmead

Nesomyia Ashmead, 1904. Carnegie Mus., Mem. 1: 344, 382.

Type-species: *Nesomyia albipes* Ashmead. Orig. desig.

cimbicis Brues. Wis. Host: *Cimex americana* Leach.

Nesomyia cimbicis Brues, 1909 (1908). Wis. Nat. Hist. Soc., Bul. 6: 162. ♀.

Biology: Girault, 1912. Ent. News 23: 81-82.

SUBFAMILY ELASMINAE

Taxonomy: Ferriere, 1947. Schweiz. Ent. Gesell., Mitt. 20: 567. —Compere, 1947. Bul. Ent.

Res. 38: 381. —Burks, 1965. Biol. Soc. Wash., Proc. 78: 201-202. —Riek, 1967. Austral. Jour. Zool. 15: 145.

Genus ELASMUS Westwood

Elasmus Westwood, 1833. London, Edinb. and Dublin Phil. Mag. and Jour. Sci. (3) 3: 343.

Type-species: *Eulophus flabellatus* Fonscolombe. Monotypic.

Aneure Nees, 1834. Hym. Ichn. Aff. Monog., v. 2, p. 194.

Type-species: *Aneure nuda* Nees. Desig. by Gahan and Fagan, 1923.

Cyclopleura Cameron, 1913 (1912). Indian Forest Rec. 4: 96.

Type-species: *Cyclopleura fumipennis* Cameron. Desig. by Gahan and Fagan, 1923.

Austelasmus Riek, 1967. Austral. Jour. Zool. 15: 148. N. syn.

Type-species: *Elasmus trifasciatiiventris* Girault. Orig. desig.

The original description of *Aneure* Nees does not at all sound like a characterization of *Elasmus*, or even of a chalcidoid. Peck, 1963. Canad. Ent. Sup. 30: 319 lists the synonymy of *Aneure* under *Elasmus* as questionable. This synonymy, however, dates from Foerster, 1856. Hym. Stud., v. 2, p. 72. A careful reading of Foerster shows that he speaks of *Anuere* with a confidence that could only have been achieved through his having studied the Nees type specimens. This synonymy should be accepted despite the description.

Revision: Girault, 1918. No. Amer. Hym. Elasmidae, Sydney, Austral. pp. 1-4. —Burks, 1965. Biol. Soc. Wash., Proc. 78: 201-207.

- albicoxa** Howard. N. J., D. C., N. C., Ind., Mo., Idaho. Host: *Callisto geminatella* (Pack.), *Coptodisca splendoriferella* (Clem.), *Parornix* sp.
Elasmus albicoxa Howard, 1885. U. S. Dept. Agr., Bur. Ent. Bul. 5: 30. ♂.
Elasmus aspidiscæ Girault, 1917 (1916). Insecutor Inscitiae Menstruus 4: 117. ♀.
 Taxonomy: Burks, 1965. Biol. Soc. Wash., Proc. 78: 206.
- albizziae** Burks. N. J. s. to Va., w. to Kans. Host: *Homadaula anisocentra* (Meyrick).
Elasmus albizziae Burks, 1965. Biol. Soc. Wash., Proc. 78: 204-206. ♀.
 Biology: Burks, 1971. Wash. Acad. Sci., Jour. 61: 195 (occurrence of male).
- apanteli** Gahan. Pa., N. C., Ohio, Ala., Wis., Ark., Sask., Wash., Oreg. Host: *Apanteles marginiventris* (Cress.), *Meteorus laphygmae* Vier., *Phobocampe pallipes* (Prov.), undet. Campoplegini.
Elasmus apanteli Gahan, 1913. U. S. Natl. Mus., Proc. 46: 438. ♀.
 Biology: Vickery, 1915. Jour. Econ. Ent. 8: 391.
- atratus** Howard. N. H., Mass., Conn., D. C., Ohio, Wis., Oreg. Host: *Apanteles* sp., *A. delicatus* How., *A. hyphantriae* Riley, *A. melanoscelus* (Ratz.), *A. solitarius* (Ratz.), *Campoplex validus* (Cress.), *Hyposoter pilosulus* (Prov.), *Meteorus hyphantriae* Riley, *M. trachynotus* Vier., *Phobocampe pallipes* (Prov.).
Elasmus atratus Howard, 1897. U. S. Dept. Agr., Div. Ent. Tech. Ser. 5: 40, 56. ♀, ♂.
 Biology: Muesebeck and Dohanian, 1927. U. S. Dept. Agr., Bul. 1487: 29 — Balduf, 1929. Ohio Jour. Sci. 29: 237. — Proper, 1934. Jour. Agr. Res. 48: 365. — McGugan and Blais, 1959. Canad. Ent. 91: 763. — Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 86. — Forbes *et al.*, 1961. Canad. Forest. Ann. Rpt., Forest Ins. and Dis. Survey, p. 33.
- borrowi** Girault. D. C.
Elasmus borrowi Girault, 1917 (1916). Insecutor Inscitiae Menstruus 4: 117. ♀.
- floridensis** Girault. Fla.
Elasmus floridensis Girault, 1916. Soc. Ent. 31: 42. ♀.
- maculatus** Howard. Fla.; West Indies. Host: *Apanteles* spp.
Elasmus maculatus Howard, 1894. Linn. Soc. London, Jour., Zool. 25: 103. ♀.
- marylandicus** Girault. Conn., Md., N. C., Okla. Host: Lepidopterous larva in stem of *Ambrosia artemisiifolia*.
Elasmus marylandicus Girault, 1915. Ent. Soc. Amer., Ann. 8: 281. ♀.
 Biology: Schread *et al.*, 1942. Conn. Agr. Expt. Sta., Bul. 461: 502.
- meteori** Ashmead. Fla., Ill., Iowa, Mo., Ark. Host: *Apanteles canarsiae* Ashm., *Meteorus* sp., *M. vulgaris* (Cress.).
Elasmus meteori Ashmead, 1898. Ent. Soc. Wash., Proc. 4: 128. ♀, ♂.
 Morphology: Burks, 1938. Ent. Soc. Amer., Ann. 31: 161 (wing venation).
- mordax** Girault. Md., D. C. Host: *Cameraria guttifinitella* (Clem.).
Elasmus mordax Girault, 1917 (1916). Insecutor Inscitiae Menstruus 4: 114. ♀.
- nigripes** Howard. N. J., Mo., Tex. Host: *Porphyrosela desmodiella* (Clem.).
Elasmus nigripes Howard, 1885. U. S. Dept. Agr., Bur. Ent. Bul. 5: 30. ♂.
Elasmus missouriensis Girault, 1917 (1916). Insecutor Inscitiae Menstruus 4: 117. ♀.
 Taxonomy: Burks, 1965. Biol. Soc. Wash., Proc. 78: 206.
- polistis** Burks. Md., Ga., Pa., Tex. Host: *Polistes annularis* (Linn.), *P. exclamans* Vier., *P. fuscatus* (Fab.), *P. major* Beauv.
Elasmus polistis Burks, 1971. Wash. Acad. Sci., Jour. 61: 195. ♀, ♂.
- pulex** Girault. Md.
Elasmus pulex Girault, 1916. Soc. Ent. 31: 43. ♀.
Elasmus daedalus Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. V, p. 8. ♀.
- setosiscutellatus** Crawford. Md. s. to Fla., w. to Wis., Kans., Ariz., and Calif.; Mexico. Host: *Apanteles* spp. on lepidopterous larvae.
Elasmus setosiscutellatus Crawford, 1910 (1909). Ent. Soc. Wash., Proc. 11: 206. ♀, ♂.

tischeriae Howard, N. J., D. C., Va., Kans. Host: *Tischeria solidaginifoliella* Clem.

Elasmus tischeriae Howard, 1885. U. S. Dept. Agr., Bur. Ent. Bul. 5: 30. ♀.

zigzag Girault, Fla.

Elasmus zigzag Girault, 1917. Descr. Stellarum Nov., p. 16. ♀.

UNPLACED SPECIES OF ELASMUS WESTWOOD

The following species were described from unassociated males and cannot at present be placed. See Burks, 1965. Biol. Soc. Wash., Proc. 78: 203.

Elasmus pullatus Howard, 1885. U. S. Dept. Agr., Bur. Ent. Bul. 5: 30. ♂.

Elasmus varius Howard, 1885. U. S. Dept. Agr., Bur. Ent. Bul. 5: 29. ♂.

Family MYMARIDAE

By B. D. BURKS

All members of this family are egg parasites. The mymarids are easily recognized as a distinct family, but their fundamental thoracic structure shows them to have been derived from the same stem that produced the present-day Eulophidae.

Revision: Girault, 1929. N. Amer. Hym. Mymaridae, pp. 6-27. —Debauche, 1949. Mus. Roy.

Hist. Nat. Belg., Mem. 108: 1-248 (Palearctic fauna). —Debauche, 1949. Cong. Belg., Inst.

Parcs Nat., Expl. Parc Nat. Albert, Miss. de Witte, 49: 1-105 (Ethiopian fauna). —Kryger,

1950. Ent. Meddel. 26: 1-97 (Palearctic fauna). —Annecke and Doutt, 1961. So. Afr. Dept.

Agr., Tech. Ser., Ent. Mem. 5: 1-71 (World genera).

SUBFAMILY ALAPTINAE

TRIBE ANAGRINI

Genus ANAGRUS Haliday

Anagrus Haliday, 1833. Ent. Mag. 1: 346.

Type-species: *Ichneumon atomus* Linnaeus. Desig. by Westwood, 1840.

Pteratomus Packard, 1864. Essex Inst., Proc. 4: 137.

Type-species: *Pteratomus putnamii* Packard. Monotypic.

Packardiella Ashmead, 1904. Carnegie Mus., Mem. 1: 364. N. name, unnecessarily proposed for *Pteratomus* Packard.

Paranagrus Perkins, 1905. Hawaii. Sugar Planters' Assn., Div. Ent. Bul. 1: 199.

Type-species: *Paranagrus optabilis* Perkins. Desig. by Gahan and Fagan, 1923.

armatus (Ashmead). Ont., Conn., and N. Y., s. to Fla., w. to Oreg. and Calif.; West Indies, South Amer., Hawaii, Australia. Host: *Delphacodes* sp., *Edwardsiana rosae* (L.),

Empoasca fabae (Harr.), *Typhlocyba pomaria* McAtee.

Litus armatus Ashmead, 1887. Canad. Ent. 19: 193. ♀.

Eustochus xanthothorax Ashmead, 1887. Canad. Ent. 91: 193. ♀.

Anagrus columbi Perkins, 1905. Hawaii. Sugar Planters' Assn., Div. Ent. Bul. 1: 198. ♀.

Anagrus spiritus Girault, 1911. Ent. News 22: 207. ♀, ♂.

Taxonomy: Girault, 1911. Amer. Ent. Soc., Trans. 37: 277, 289.

Biology: Childs, 1918. Oreg. Agr. Expt. Sta., Bul. 148: 27.

delicatus Dozier. Ill., Calif.

Anagrus delicatus Dozier, 1936. Hawaii. Ent. Soc., Proc. 9: 177. ♀, ♂.

epos Girault. Pa., Md., Va., Fla., Ill., N. Mex., Calif. Host: *Edwardsiana prunicola* (Edw.),

Empoasca fabae (Harr.), *Erythroneura comes* (Say), *E. plena* Beamer, *Typhlocyba*

pomaria McAtee, *T. quercus* (F.).

Anagrus epos Girault, 1911. Amer. Ent. Soc., Trans. 37: 292. ♀, ♂.

Biology: Ackerman, 1919. U. S. Dept. Agr., Bul. 805: 28. —Mulla, 1956. Jour. Econ. Ent. 49:

438-441. —Mulla, 1957. Ent. Soc. Amer., Ann. 50: 85.

giraulti Crawford. Ga., Ala., Idaho, Utah, Calif. Host: *Arilus cristatus* (L.), *Circulifer tenellus* (Baker), *Homalodisca coagulata* (Say).

Anagrus giraulti Crawford, 1913. U. S. Natl. Mus., Proc. 45: 259. ♀, ♂.

Biology: Stahl, 1920. Jour. Agr. Res. 20: 250. —Henderson, 1941. U. S. Dept. Agr., Cir. 593: 2-10. —Turner and Pollard, 1959. U. S. Dept. Agr., Tech. Bul. 1188: 26-27.

nigriceps Girault, new status. Oreg., Calif. Host: *Edwardsiana prunicola* (Edw.), *E. rosae* (L.).
Anagrus armatus var. *nigriceps* Girault, 1915. Ent. Soc. Amer., Ann. 8: 276. ♀.

Biology: Mulla, 1956. Jour. Econ. Ent. 49: 438. —Mulla, 1957. Ent. Soc. Amer., Ann. 50: 86.

nigrieventris Girault, new status. Ont., Conn., s. to S. C., w. to Ill., N. Mex., Utah; New Zealand. Host: *Empoasca fabae* (Harr.), *Typhlocyba pomaria* McAtee.

Anagrus armatus var. *nigrieventris* Girault, 1911. Amer. Ent. Soc., Trans. 37: 291. ♀.

Biology: Ackerman, 1919. U. S. Dept. Agr., Bul. 805: 28. —Armstrong, 1936. Ent. Soc. Ont., Ann. Rpt. 66: 17-22. —Dumbleton, 1937. New Zeal. Jour. Sci. and Technol. 18: 868.

—Steiner, 1938. Conn. Pomol. Soc., Proc. 47: 23-25. —Steiner, 1938. Jour. Econ. Ent. 31: 233-240.

puella Girault. Ill., Colo.

Anagrus puella Girault, 1911. Amer. Ent. Soc., Trans. 37: 293. ♀, ♂.

putnamii Packard. Vt.

Pteratomus Putnamii Packard, 1864. Essex Inst., Proc. 4: 137. ♂.

Genus STETHYNIUM Enoch

Stethynium Enoch, 1909. Roy. Ent. Soc. London, Trans., 1909: 452.

Type-species: *Stethynium triclavatum* Enoch. Monotypic.

annulatum Doutt. Calif.

Stethynium annulatum Doutt, 1947. Pan-Pacific Ent. 23: 152. ♀.

faunum Girault. Ill.

Stethynium faunum Girault, 1911. Amer. Ent. Soc., Trans. 37: 298. ♀, ♂.

TRIBE ALAPTINI

Genus ALAPTUS Westwood

Alaptus Westwood, 1839. Introd. Mod. Class. Ins., v. 2, p. 79.

Type-species: *Mymar minimus* Westwood. Orig. desig.

Parrulinus Mercet, 1912. Soc. Esp. Hist. Nat., Bol. 12: 331.

Type-species: *Parrulinus auranti* Mercet. Monotypic.

Metalaptus Malenotti, 1917. Redia 12: 339.

Type-species: *Metalaptus torquatus* Malenotti. Monotypic.

There has long been a difference of opinion as to the author of this genus and its type-species. They have been listed as *Alaptus* Haliday, with type-species as *Alaptus minimus* Haliday, *Mymar minimus* Walker, *Alaptus minimus* Walker or *Alaptus fuscus* Haliday. However, Annecke and Doutt, 1961 (So. Afr. Dept. Agri., Tech. Ser., Ent. Mem. 5: 8) are of the opinion that the information given by Westwood in his original citation of *Alaptus* and *Mymar minimus* validate him as author of both. This is the most reasonable of all the arguments that have been advanced in this matter.

Some members of this genus are the smallest known insects, being less than 200 microns in overall body length.

Taxonomy: Debauche, 1949. Cong. Belg., Inst. Parcs Nat., Expl. Parc Nat. Albert, Miss. de Witte, 49: 9.

auranti (Mercet). La.; Europe. Ecology: Originally thought to parasitize Coccidae, but actual hosts probably Psocoptera.

Parrulinus auranti Mercet, 1912. Soc. Esp. Hist. Nat., Bol. 12: 333. ♀.

Metalaptus torquatus Malenotti, 1917. Redia 12: 339. ♀, ♂.

Taxonomy: Mercet, 1917. Asoc. Esp. Prog. Ciencia. Cong. de Valladolid, 4: 367. —Cressman et al., 1935. Jour. Agr. Res. 50: 282.

Biology: Dingler, 1923. Ztschr. f. Angew. Ent. 9: 236-239.

caecili Girault. Maine, Fla., Ill., Calif. Host: *Caecilius aurantiacus* (Hag.), *C. manteri* Som., *Ectopsocus californicus* (Banks), *Psocus* sp.

Alaptus caecili Girault, 1908. Ent. Soc. Amer., Ann. 1: 189. ♀, ♂.

Taxonomy: Girault, 1910. N. Y. Ent. Soc., Jour. 18: 241-243. —Ferriere. 1930. Bul. Ent. Res. 21: 41-42.

Biology: Sommerman, 1943. Ent. Soc. Wash., Proc. 45: 35.

eriococci Girault. Calif. Ecology: Parasite of psocids.

Alaptus eriococci Girault, 1908. Ent. Soc. Amer., Ann. 1: 191. ♀, ♂.

globosicornis Girault. Fla.; Hawaii, Australia. Host: *Liposcelis divinatorius* (Mull.), *Psocus* sp.

Alaptus globosicornis Girault, 1908. Ent. Soc. Amer., Ann. 1: 188. ♀.

Taxonomy: Girault, 1911. Arch. f. Naturgesch. 77 (1) sup. 2: 132.

iceryae Riley. Ill., Calif. Ecology: Thought to parasitize *Icerya* sp.

Alaptus iceryae Riley, 1889. U. S. Dept. Agr., Ann. Rpt. for 1888, p. 86.

Taxonomy: Girault, 1908. Ent. Soc. Amer., Ann. 1: 186. —Girault, 1910. N. Y. Ent. Soc., Jour. 18: 240-243.

intonsipennis Girault. Ill.

Alaptus intonsipennis Girault, 1910. N. Y. Ent. Soc., Jour. 18: 244. ♀.

psocidivorus Gahan. Calif. Ecology: Parasite of psocid eggs, probably *Ectopsocus californicus* Banks.

Alaptus psocidivorus Gahan, 1927. Pan-Pacific Ent. 3: 180. ♀, ♂.

Biology: Spruyt, 1927. Pan-Pacific Ent. 3: 182-184.

Genus DICOPUS Enock

Dicopus Enock, 1909. Roy. Ent. Soc. London, Trans. 1909: 455.

Type-species: *Dicopus minutissima* Enock. Monotypic.

halitus Girault. Que.

Dicopus halitus Girault, 1911. Ent. News 22: 347. ♂.

SUBFAMILY MYMARINAE

TRIBE OOCOTONINI

Genus ARESCON Walker

Arescon Walker, 1846. Ann. and Mag. Nat. Hist. 18: 49.

Type-species: *Mymar dimidiatus* Curtis. Monotypic.

Panthus Walker, 1846. Ann. and Mag. Nat. Hist. 18: 52.

Type-species: *Panthus crassicornis* Walker. Desig. by Gahan and Fagan, 1923.

Leimacis Foerster, 1847. Linnaea Ent. 2: 208.

Type-species: *Leimacis rufula* Foerster. Monotypic.

Limacis Foerster, 1856. Hym. Stud., v. 2, p. 120. Emend.

Xenomymar Crawford, 1913. U. S. Natl. Mus., Proc. 46: 343.

Type-species: *Xenomymar urichi* Crawford. Orig. desig.

Neurotes Enock, 1914. Roy. Ent. Soc. London, Proc. 1913: cxxxiv.

Type-species: *Neurotes iridescens* Enock. Monotypic.

aspidioticola (Ashmead). Fla. Ecology: This parasite lays its egg beneath the female scale; the larva hatches and consumes the eggs contained in the body of the scale. It then pupates, and the adult chews a hole in the scale to escape. Host: *Lepidosaphes beckii* (Newm.), *L. gloverii* (Pack.).

Apheleus aspidioticola Ashmead, 1879. Canad. Ent. 11: 159. ♀.

Taxonomy: Howard, 1885. U. S. Dept. Agr., Div. Ent. Bul. 5: 43 (Mymarinae). —Girault, 1911. Arch. f. Naturgesch. 77 (1) Sup. 2: 132 (types lost). —Mercet, 1912. Mus. Nac. Cien. Nat. Madrid, Trab. 10: 95 (genus ?).

Biology: Ashmead, 1880. Orange Insects, pp. 7-9. —Hubbard, 1885. U. S. Dept. Agr., Insects Affecting the Orange, pp. 24, 70.

Genus GONATOCERUS Nees

Gonatocerus Nees, 1834. Hym. Ich. Affin. Monog., v. 2, p. 192.

Type-species: *Gonatocerus longicornis* Nees. Monotypic.

Lymaenon Walker, 1846. Ann. and Mag. Nat. Hist. 18: 49.

Type-species: *Lymaenon acuminatus* Walker. Desig. by Gahan and Fagan, 1923.

Rachistus Foerster, 1847. Linnaea Ent. 2: 203.

Type-species: *Ooctonus litoralis* Haliday. Desig. by Gahan and Fagan, 1923.

Rhachistus Dalla Torre, 1898. Cat. Hym., v. 5, p. 429. Emend.

Oophilus Enock, 1909. Roy. Ent. Soc. London, Trans. 1909: 458.

Type-species: *Oophilus longicauda* Enock. Monotypic.

Agonatocerus Girault, 1913. Canad. Ent. 45: 276.

Type-species: *Agonatocerus humboldti* Girault. Orig. desig.

Gonatoceroideus Girault, 1913. Entomologist 46: 255.

Type-species: *Gonatoceroideus australica* Girault. Orig. desig.

Kryger, 1934 (Ent. Meddel. 18: 503-505) published a paper stating that *Gonatocerus* Nees was not a mymarid, but a chalcidid. Nees' type was destroyed many years ago, so this conclusion was based on a reading of the original description of the genus. The next available name for this genus being *Lymaenon* Walker, numerous authors used it. However, a more careful rereading of Nees' discursive but reasonably exact description of *Gonatocerus* by some later authors led them to the conclusion that Kryger had been mistaken. The characters Nees gives are certainly those of a mymarid. Soyka, 1946 (Zentbl. Gesamtgeb. Ent. 1: 36) first published this correction, and others published it subsequently. Consequently the name *Lymaenon* was widely used for this genus for only about 10 years.

americanus Brues. Wis.

Gonatocerus americanus Brues, 1907. Wis. Nat. Hist. Soc., Bul. 5: 109. ♀.

anthonomi Girault. Ill., Ga., Tex., N. Mex.

Gonatocerus anthonomi Girault, 1905. Ent. News 16: 288. ♀, ♂.

Gonatocerus texanus Girault, 1911. Amer. Ent. Soc., Trans. 37: 270. ♀.

ashmeadi Girault. Ga., Miss., La., Tex. Host: *Cuerna costalis* (F.), *Homalodisca coagulata* (Say), *Oncometopia orbona* (F.).

Gonatocerus dolichocerus var. *ashmeadi* Girault, 1916. Ent. News 27: 8. ♀, ♂.

Biology: Turner and Pollard, 1959. U. S. Dept. Agr., Tech. Bul. 1188: 26-27.

aureus Girault. Ill.

Gonatocerus aureus Girault, 1911. Amer. Ent. Soc., Trans. 37: 263. ♀.

brunneus Girault. Ill.

Gonatocerus brunneus Girault, 1911. Amer. Ent. Soc., Trans. 37: 261. ♀, ♂.

Gonatocerus maevis Girault, 1911. Amer. Ent. Soc., Trans. 37: 272. ♀.

californicus Girault. Calif.

Gonatocerus californicus Girault, 1911. Amer. Ent. Soc., Trans. 37: 271. ♀.

capitatus Gahan. Utah, Ariz., Calif. Host: *Circulifer tenellus* (Baker).

Gonatocerus(?) *capitatus* Gahan, 1932. Ent. Soc. Amer., Ann. 25: 754. ♀, ♂.

dolichocerus Ashmead. Ga., Fla., Ill. Host: *Ceresa bubalus* (F.).

Gonatocerus dolichocerus Ashmead, 1887. Canad. Ent. 19: 192. ♀.

fasciatus Girault. D. C., Va., Ga., Ill. Host: *Homalodisca coagulata* (Say).

Gonatocerus fasciatus Girault, 1911. Amer. Ent. Soc., Trans. 37: 265. ♀.

Biology: Turner and Pollard, 1959. U. S. Dept. Agr., Tech. Bul. 1188: 26-27.

illinoiensis Girault. Ill.

Gonatocerus illinoiensis Girault, 1917. Psyche 24: 91. ♀.

koebelei Perkins. Fla.; Mexico. Host: *Draeculacephala mollipes* (Say), *D. producta* (Walker).

Gonatocerus(?) *koebelei* Perkins, 1912. Hawaii. Sugar Planters' Assoc. Expt. Sta., Div. Ent. Bul. 10: 22. ♀, ♂.

latipennis Girault. N. Y., Pa.

Gonatocerus latipennis Girault, 1911. Amer. Ent. Soc., Trans. 37: 268. ♂.

maga Girault. Ill.

Gonatocerus maga Girault, 1911. Amer. Ent. Soc., Trans. 37: 267. ♀.

marilandicus Girault. Md., Ga. Host: *Gypona* sp.

Gonatocerus marilandicus Girault, 1917 (1916). Insecutor Inscitiae Menstruus 4: 115. ♀.

maximus Girault. Ill.

Gonatocerus maximus Girault, 1911. Amer. Ent. Soc., Trans. 37: 264. ♀.

mexicanus Perkins. Fla., Tex., Ariz., Calif. Host: *Draeculacephala mollipes* (Say).

Gonatocerus mexicanus Perkins, 1912. Hawaii. Sugar Planters' Assoc. Expt. Sta., Div. Ent.

Bul. 10: 21. ♀, ♂.

Gonatocerus eximius Gahan, 1913. U. S. Natl. Mus., Proc. 46: 441. ♀.

Gonatocerus gibsoni Crawford, 1915. U. S. Natl. Mus., Proc. 48: 586. ♀, ♂.

Biology: Gibson, 1915. U. S. Dept. Agr., Bul. 254: 14.

nigritarsis Ashmead. Fla.

Gonatocerus nigritarsis Ashmead, 1887. Canad. Ent. 19: 192. ♀.

novifasciatus Girault. Ga., Tenn., Calif. Host: *Graphocephala versuta* (Say).

Gonatocerus novifasciatus Girault, 1911. Amer. Ent. Soc., Trans. 37: 266. ♀.

Taxonomy: Girault, 1916. Brooklyn Ent. Soc., Bul. 11: 112.

Biology: Turner and Pollard, 1959. U. S. Dept. Agr., Tech. Bul. 1188: 26-27.

ornatus Gahan. Ariz. Host: *Stictocephala festina* (Say).

Gonatocerus ornatus Gahan, 1918. Ent. Soc. Wash., Proc. 20: 23. ♀, ♂.

ovicenatus Leonard and Crosby. N. Y. Host: *Idiocerus decimusquartus* (Schränk).

Gonatocerus ovicenatus Leonard and Crosby, 1915. Jour. Econ. Ent. 8: 545. ♀, ♂.

partifuscipennis Girault. Md.

Gonatocerus partifuscipennis Girault, 1916. Canad. Ent. 48: 102. ♀.

pygmaeus Girault. Miss.

Gonatocerus pygmaeus Girault, 1911. Amer. Ent. Soc., Trans. 37: 269. ♀.

rivalis Girault. Va., Ill., Kans. Ecology: Parasitizes cicadellid eggs in cane stems.

Gonatocerus rivalis Girault, 1911. Amer. Ent. Soc., Trans. 37: 257. ♀, ♂.

tenuipennis Girault. Ill.

Gonatocerus brunneus var. *tenuipennis* Girault, 1911. Amer. Ent. Soc., Trans. 37: 263. ♀.

titillatus Girault. Utah.

Gonatocerus titillatus Girault, 1917. Brooklyn Ent. Soc., Bul. 12: 87. ♀.

triguttus Girault. Tex.; West Indies.

Gonatocerus triguttus Girault, 1916. Ent. Soc. Amer., Ann. 9: 297. ♀, ♂.

utahensis Girault. Utah.

Gonatocerus utahensis Girault, 1917. U. S. Natl. Mus., Proc. 53: 446. ♀.

Genus COSMOCOMOIDEA Howard

Cosmocomoidea Howard, 1908. Ent. Soc. Wash., Proc. 10: 68.

Type-species: *Cosmocomoidea morrilli* Howard. Monotypic.

Taxonomy: Debauche, 1948. Mus. Roy. Hist. Nat. Belg., Mem. 108: 114 (syn. of *Ooctonus*

Haliday). —Ogloblin, 1959. Munchen. Ent. Gesell., Mitt. 49: 50 (subg. of *Lymaenon* Walker). —Annecke and Doult, 1961. So. Afr. Dept. Agr., Tech. Ser., Ent. Mem. 5: 4, 14-15 (subg. of *Lymaenon* Walker).

morrilli Howard. Ga., Fla., Tex.; Mexico, Cent. Amer. Host: *Homalodisca coagulata* (Say).

Cosmocomoidea morrilli Howard, 1908. Ent. Soc. Wash., Proc. 10: 69. ♀, ♂.

Taxonomy: Girault, 1917. Entomologist 50: 36. —Whittaker, 1931. Ent. Soc. Wash., Proc. 3: 192.

Biology: Turner and Pollard, 1959. U. S. Dept. Agr., Tech. Bul. 1188: 26-27.

Genus **OOCTONUS** Haliday

Ooctonus Haliday, 1833. Ent. Mag. 1: 269, 343.

Type-species: *Ooctonus insignis* Haliday. Desig. by Westwood, 1840.

Sphecomicrus Walker, 1846. Ann. Mag. Nat. Hist. 18: errata; and also p. 50.

Type-species: *Ooctonus insignis* Haliday. Desig. by Peck, 1951.

Revision: Whittaker, 1931. Ent. Soc. Wash., Proc. 33: 189-192.

americanus Girault. N. J., D. C., Ohio. Host: *Philaenus spumarius* (L.).

Ooctonus americanus Girault, 1916. Ent. News 27: 69. ♀.

Biology: Weaver and King, 1954. Ohio Agr. Expt. Sta., Res. Bul. 741: 15-17.

aphrophorae Milliron. Ohio, Wis. Host: *Aphrophora saratogensis* (Fitch).

Ooctonus aphrophorae Milliron, 1947. Ent. Soc. Amer., Ann. 40: 217. ♀, ♂.

auripes Whittaker. B. C.

Ooctonus auripes Whittaker, 1931. Ent. Soc. Wash., Proc. 33: 190. ♀.

canadensis Whittaker. B. C.

Ooctonus canadensis Whittaker, 1931. Ent. Soc. Wash., Proc. 33: 191. ♀.

fuscipes Whittaker. Conn., B. C.

Ooctonus fuscipes Whittaker, 1931. Ent. Soc. Wash., Proc. 33: 189. ♀.

occidentalis Whittaker. B. C.

Ooctonus occidentalis Whittaker, 1931. Ent. Soc. Wash., Proc. 33: 191. ♀.

quadricarinatus Girault. N. Y.

Ooctonus quadricarinatus Girault, 1916. Ent. Soc. Amer., Ann. 9: 301. ♂.

silvensis Girault. D. C.

Ooctonus silvensis Girault, 1916. Ent. News 27: 70. ♀.

Genus **CAMPTOPTERA** Foerster

Camptoptera Foerster, 1856. Hym. Stud., v. 2, pp. 116, 119, 144.

Type-species: *Camptoptera papaveris* Foerster. Monotypic.

Pteroclis Foerster, 1856. Hym. Stud., v. 2, p. 144. N. name, unnecessarily proposed for *Camptoptera*.

Stichothrix Foerster, 1856. Hym. Stud., v. 2, pp. 117, 118, 121.

Type-species: *Stichothrix cardui* Foerster. Monotypic.

Macrocamptoptera Girault, 1910. N. Y. Ent. Soc., Jour. 18: 239.

Type-species: *Camptoptera metotarsa* Girault. Orig. desig.

Congolia Ghesquiere, 1942. Rev. Zool. Bot. Africaines 36: 320.

Type-species: *Congolia sycophila* Ghesquiere. Monotypic.

Taxonomy: Soyka, 1953. Natuurh. Maandbl. 42: 57-60.

brunnea Dozier. Del.

Camptoptera brunnea Dozier, 1933. Ent. Soc. Wash., Proc. 35: 97. ♀.

metotarsa Girault. Va.

Camptoptera metotarsa Girault, 1905. Psyche 12: 91. ♀.

Taxonomy: Girault, 1910. N. Y. Ent. Soc., Jour. 18: 238-240.

pulla Girault. Del., Ill., Calif.

Camptoptera pulla Girault, 1909. Ent. Soc. Amer., Ann. 2: 27. ♀.

Taxonomy: Girault, 1910. N. Y. Ent. Soc., Jour. 18: 236-238.

TRIBE ANAPHINI

Genus **PARALLELAPTERA** Enock

Parallelaptera Enock, 1909. Roy. Ent. Soc. London, Trans. 1909: 454.

Type-species: *Parallelaptera panis* Enock. Monotypic.

Anthemella Girault, 1911. Ent. Soc. Wash., Proc. 13: 185.

Type-species: *Anthemella rex* Girault. Orig. desig.

Taxonomy: Girault, 1912. Ent. News 23: 297.

rex (Girault). Ill., Minn., Calif. Host: *Circulifer tenellus* (Baker).
Anthemiella rex Girault, 1911. Ent. Soc. Wash., Proc. 13: 185. ♀.

Genus ERYTHMELUS Enoch

Erythmelus Enoch, 1909. Roy. Ent. Soc. London, Trans. 1909: 454.

Type-species: *Erythmelus goochi* Enoch. Monotypic.

Enaesius Enoch, 1909. Roy. Ent. Soc. London, Trans. 1909: 456.

Type-species: *Enaesius agilis* Enoch. Desig. by Gahan and Fagan, 1923.

Taxonomy: Debauche, 1948. Mus. Roy. Hist. Nat. Belg., Mem. 108: 192. — Annecke and Doutt, 1961. S. Afr. Dept. Agr., Tech. Ser., Ent. Mem. 5: 18.

flandersi Doutt. Calif.

Erythmelus flandersi Doutt, 1949. Pan-Pacific Ent. 25: 77. ♀, ♂.

gracilipes (Girault). N. Mex.

Anaphes gracilipes Girault, 1916. Ent. News 27: 7. ♀.

gracilis (Howard). N. J., s. to Ga., w. to Calif. Host: *Aspidiotus perniciosus* Comst.,
Lepidosaphes ulmi (L.).

Anaphes gracilis Howard, 1881. U. S. Dept. Agr., Ann. Rpt. for 1880, p. 370. ♀.

Anaphes cinctiventris Girault, 1911. Amer. Ent. Soc., Trans. 37: 286. ♀.

Biology: Johnson, 1900. U. S. Dept. Agr., Div. Ent. Bul. (n. s.) 26: 73-74.

io (Girault). Ill., Calif.

Anagrus io Girault, 1911. Amer. Ent. Soc., Trans. 37: 294. ♂.

miridiphagus Dozier. Calif.; Puerto Rico.

Erythmelus miridiphagus Dozier, 1937. Puerto Rico Univ., Jour. Agr. 21: 133. ♀.

piceus (Girault). N. Mex.

Anaphes piceus Girault, 1916. Ent. News 27: 6. ♀.

psallidis Gahan. S. C., Miss., Ark., La., Tex., Ariz., Calif. Host: *Psallus seriatus* (Reut.).

Erythmelus psallidis Gahan, 1937. Ent. Soc. Wash., Proc. 39: 268. ♀, ♂.

Biology: Strong, 1938. U. S. Dept. Agr., Bur. Ent. and P. Q., Ann. Rpt. for 1938, p. 52.

—Ewing and Crawford, 1939. Jour. Econ. Ent. 32: 303-305.

Genus ANAPHES Haliday

Anaphes Haliday, 1833. Ent. Mag. 1: 269, 346.

Type-species: *Ichneumon punctum* Shaw. Desig. by Internatl. Comn. Zool. Nomencl., Opinion 729, 1965.

Clinomymar Kieffer, 1913. Soc. Agr. Alger., Bul. 4: 100.

Type-species: *Clinomymar peyerimhoffi* Kieffer. Orig. desig.

Stammeriella Soyka, 1950. Ent. Nachr. Burgdorf 3: 120.

Type-species: *Stammeriella wolfstali* Soyka. Orig. desig.

Synanaphes Soyka, 1946. Zentbl. Gesamtgeb. Ent. 1: 181.

Type-species: *Synanaphes ranalteri* Soyka. Orig. desig.

Ferrierella Soyka, 1946. Zentbl. Gesamtgeb. Ent. 1: 182.

Type-species: *Ferrierella neoprattensis* Soyka. Orig. desig.

Gahan, 1949 (Wash. Acad. Sci., Jour. 39: 204-205) published a paper about *Anaphes* and *Mymar* in which he changed the application these names had had in literature for about a century. As a result, these names were used in the sense he advocated in the 1951 Hymenoptera Catalog, its First Supplement, and Peck's 1963 catalog. However, Hincks, 1952 (Soc. Brit. Ent., Trans. 11: 163) had proposed submitting this matter to the Internatl. Comn. on Zool. Nomencl., requesting that traditional usage be restored. Annecke and Doutt, 1963 (Bul. Zool. Nomencl. 20: 134-136) formally submitted a petition to the Commission requesting the restoration of traditional usage.

This was approved in Opinion 729, 1965.

alaskae Annecke and Doutt. Alaska.

Anaphes alaskae Annecke and Doutt, 1961. So. Afr. Dept. Agr., Tech. Ser., Ent. Mem. 5: 47. ♀, ♂.

anomocerus Girault. Tex., Ariz. Host: *Psallus seriatus* (Reut.).

Anaphes iole anomocerus Girault, 1929. No. Amer. Hym. Myrmariidae, p. 13. ♂.

Biology: Strong, 1938. U. S. Dept. Agr., Bur. Ent. and P. Q., Ann. Rpt. for 1938, p. 52.

—Ewing and Crawford, 1939. Jour. Econ. Ent. 32: 303-305.

behmani Girault. N. Y., Mich.

Anaphes behmani Girault, 1929. No. Amer. Hym. Myrmariidae, p. 14. ♀, ♂.

flavipes (Foerster). Ont., N. Y., Pa., Md., Va., W. Va., Ohio, Mich., Ind.; Europe. Introduced from Europe for biological control in 1966; first recovered in Mich. Host: *Oulema melanopus* (L.).

Gonatocerus flavipes Foerster, 1841. Beitr. Monog. Pteromalinen, p. 45. ♀.

Anaphes lemae Bakkendorf, 1970. Entomophaga 15: 153. ♀, ♂.

Biology: Anderson and Paschke, 1968. Ent. Soc. Amer., Ann. 61: 1-5. —Anderson and

Paschke, 1969. Ent. Soc. Amer., Ann. 62: 1316-1321. —Anderson and Paschke, 1970. Ent.

Soc. Amer., Ann. 63: 820-828. —Maltby *et al.*, 1971. Jour. Econ. Ent. 64: 693-697. —Morris

and Moorhead, 1971. Ent. Soc. Amer., N. Cent. Br., Proc. 26: 41-46. —Dysart, 1971.

Entomophaga 16: 445-452.

hercules Girault. Ill.

Anaphes hercules Girault, 1911. Amer. Ent. Soc., Trans. 37: 285. ♀.

iole Girault. Ill., Calif. Host: *Hypera nigrirostris* (F.).

Anaphes iole Girault, 1911. Amer. Ent. Soc., Trans. 37: 284. ♀.

nigrellus Girault. Ill.

Anaphes nigrellus Girault, 1911. Amer. Ent. Soc., Trans. 37: 282. ♀.

ovijentatus (Crosby and Leonard). N. Y., La., Calif. Host: *Lygus hesperus* Knight, *L. lineolaris* (P. deB.).

Anagrus ovijentatus Crosby and Leonard, 1914. Canad. Ent. 46: 181. ♀.

Biology: Romney and Cassidy, 1945. Jour. Econ. Ent. 38: 497. —Sillings, 1971. Ent. Soc.

Amer., N. Cent. Br., Proc. 26: 105. —Stoner and Surber, 1971. Jour. Econ. Ent. 64:

1566-1567.

pallipes (Ashmead). Va., Fla.

Alaptus pallipes Ashmead, 1887. Canad. Ent. 19: 193. ♀.

Taxonomy: Girault, 1910. N. Y. Ent. Soc., Jour. 18: 243-244. —Girault, 1911. Amer. Ent. Soc.,

Trans. 37: 278-279.

perdubius Girault. S. C., Minn., Utah. Host: *Halticus bractentus* (Say).

Anaphes perdubius Girault, 1916. Ent. News 27: 6. ♀.

pratensis Foerster. Conn., Ill., Utah; Europe. Introduced from Italy for biological control in 1911-1913, but not recovered; introduced again in 1925 and first recovered in 1926. Host:

Hypera postica (Gyll.), *H. punctata* (F.).

Anaphes pratensis Foerster, 1847. Linnaea Ent. 2: 211. ♀, ♂.

Taxonomy: Girault, 1911. Ent. News 22: 364.

Biology: Pack, 1930. Utah Agr. Expt. Sta., Bul. 216: 29-30. —Clausen, 1956. U. S. Dept. Agr.,

Tech. Bul. 1139: 116.

sinipennis Girault. Ill.

Anaphes sinipennis Girault, 1911. Amer. Ent. Soc., Trans. 37: 280. ♀.

Genus PARACLERUCHUS Yoshimoto

Paracleruchus Yoshimoto, 1971. Canad. Ent. 103: 1079.

Type-species: *Paracleruchus pieloui* Yoshimoto. Orig. desig.

pieloui Yoshimoto. N. B. Ecology: Reared from birch bracket fungus, *Polyporus betulinus*.

Paracleruchus pieloui Yoshimoto, 1971. Canad. Ent. 103: 1079. ♀, ♂.

Biology: Pielou and Verma, 1968. Canad. Ent. 100: 1179-1199 (*Cleruchus* sp.).

Genus PATASSON Walker

Patasson Walker, 1846. Ann. and Mag. Nat. Hist. 18: viii, 50.

Type-species: *Panthus crassicornis* Haliday. Monotypic.

Anaphoidea Girault, 1909. N. Y. Ent. Soc., Jour. 17: 167.

Type-species: *Anaphoidea sordidata* Girault. Orig. desig.

Anaphoides Enock, 1915. Hastings and East Sussex Nat. 2: 181 (no species). —Peck, 1951.

In Muesebeck *et al.*, U. S. Dept. Agr., Agr. Monog. 2: 414. One species.

Type-species: *Patasson crassicornis* (Haliday). Desig. by Peck, 1951.

Antoniella Soyka, 1950. Ent. Nachr. Burgdorf 3: 121.

Type-species: *Fulmekiella stubaiensis* Soyka. Orig. desig.

Mariella Soyka, 1950. Ent. Nachr. Burgdorf 3: 123.

Type-species: *Mariella superaddita* Soyka. Orig. desig.

Revision: Doutt, 1949. Pan-Pacific Ent. 25: 155-160 (*Anaphoidea*).

brunneus (Doutt). Calif.

Anaphoidea brunnea Doutt, 1949. Pan-Pacific Ent. 25: 159-160. ♀.

calendrea (Gahan). N. J., Ind., Miss., Mo. Host: *Calendra callosa* (Oliv.), *C. costipennis* (Horn),

C. destructor (Chitt.), *C. minima* (Hart), *C. parvula* (Gyll.), *C. pertinax* (Oliv.).

Anaphoidea calendrea Gahan, 1927. U. S. Natl. Mus., Proc. 71 (4): 32. ♀, ♂.

Biology: Satterthwaite, 1931. N. Y. Ent. Soc., Jour. 39: 171.

confertus (Doutt). Calif.

Anaphoidea conferta Doutt, 1949. Pan-Pacific Ent. 25: 155-160. ♀.

conotracheli (Girault). Conn., s. to Ga., w. to Minn., Utah, Tex. Host: *Conotrachelus nenuphar*

(Herbst), *Craponius inaequalis* (Say); *Rhagoletis pomonella* (Walsh); *Schizocercella*

pilicornis (Holmgr.).

Anaphes conotracheli Girault, 1905. Ent. News 16: 220. ♀, ♂.

Biology: Johnson and Girault, 1906. U. S. Dept. Agr., Bur. Ent. Cir. 73: 5-6. —Brooks, 1910.

W. Va. Agr. Expt. Sta., Bul. 126: 110. —Pierce, 1910. Jour. Econ. Ent. 3: 453. —Quaintance

and Jenne, 1912. U. S. Dept. Agr., Bur. Ent. Bul. 103: 140-142. —Porter and Alden, 1921.

Ent. Soc. Wash., Proc. 23: 62. —Porter, 1922. Wash. Acad. Sci., Jour. 12: 165. —Porter,

1928. U. S. Dept. Agr., Tech. Bul. 66: 29. —Dozier *et al.*, 1932. Del. Agr. Expt. Sta., Bul.

175: 38. —Moultrie, 1952. Ga. Dept. Ent., Bul. 97: 19. —Garman *et al.*, 1953. Conn. Agr.

Expt. Sta., Bul. 575: 7.

gerrisophaga (Doutt). Calif. Host: *Gerris* sp.

Anaphoidea gerrisophaga Doutt, 1949. Pan-Pacific Ent. 25: 156-160. ♀.

longiclava (Doutt). Calif.

Anaphoidea longiclava Doutt, 1949. Pan-Pacific Ent. 25: 158. ♀.

luna (Girault). Que., Ont., N. Y., N. J., Del., Md., W. Va., Mich., Ky., Wis., Ill., Utah; Europe.

Introduced from Italy in 1911 and 1925 along with *Anaphes pratensis* Foerster. Host:

Hypera postica (Gyll.).

Anaphoidea luna Girault, 1914. Ent. Soc. Wash., Proc. 16: 109. ♀, ♂.

Biology: Silvestri, 1915. Lab. Zool. Agr. Portici, Bol. 10: 80-83. —Chamberlin, 1924. U. S.

Dept. Agr., Cir. 301: 2-3. —Chamberlin, 1924. Jour. Econ. Ent. 17: 627. —Hamlin *et al.*,

1949. U. S. Dept. Agr., Tech. Bul. 975: 58, 83. —Clausen, 1956. U. S. Dept. Agr., Tech. Bul.

1139: 116.

pullicrura (Girault). Ill.

Anaphoidea pullicrura Girault, 1910. N. Y. Ent. Soc., Jour. 18: 252. ♀, ♂.

sordidatus (Girault). N. J., Ill. Host: *Tylocladia foveolatum* Say.

Anaphoidea sordidata Girault, 1909. N. Y. Ent. Soc., Jour. 17: 169. ♀, ♂.

TRIBE MYMARINI

Genus MYMAR Curtis

Mymar Curtis, 1832. Brit. Ent. v. 9, p. 411.

Type-species: *Mymar pulchellum* Curtis. Desig. by Internatl. Comm. Zool. Nomencl., Opinion 729, 1965.

Pterolinononyktera Malac, 1943. Folia Ent. Brno 6: 51.

Type-species: *Pterolinononyktera obenbergeri* Malac. Orig. desig.

Oglobliniella Soyka, 1946. Zentbl. Gesamtgeb. Ent. 1: 180. N. name for *Mymar*.

Refer to remarks about the nomenclature of this genus under *Anaphes* Haliday.

cinnamati Girault. Md.

Mymar cinnamati Girault, 1917. Psyche 24: 99. ♂.

Taxonomy: Annecke and Doutt, 1961. So. Afr. Jour. Agr. Sci. 4: 551-552 (prob. syn. of *Mymar regale* Enock).

pulchellum Curtis. Pa.; Europe.

Mymar pulchellus Curtis, 1832. Brit. Ent. v. 9, p. 411. ♀, ♂.

Mymar venustum Girault, 1911. N. Y. Ent. Soc., Jour. 19: 94, 188. ♀.

Taxonomy: Annecke and Doutt, 1961. So. Afr. Jour. Agr. Sci. 4: 550-551 (syn.).

Genus NEOMYMAR Crawford

Neomymar Crawford, 1913. U. S. Natl. Mus., Proc. 46: 351.

Type-species: *Neomymar vierecki* Crawford. Orig. desig.

vierecki Crawford. Md., Va., Fla., Iowa.

Neomymar Vierecki Crawford, 1913. U. S. Natl. Mus., Proc. 46: 351. ♀.

Neomymar vierecki marilandi Girault, 1917. Chalcidoidea Nova Marilandensis III p. 2. ♀.
N. syn.

Genus CARAPHRACTUS Walker

Caraphractus Walker, 1846. Ann. and Mag. Nat. Hist. 18: 49-52.

Type-species: *Caraphractus cinctus* Walker. Monotypic.

cinctus Walker. N. Y., N. W. T.; Europe. Host: *Gerris remigis* Say, *Notonecta* sp.; *Dytiscus* sp.

Caraphractus cinctus Walker, 1846. Ann. and Mag. Nat. Hist. 18: 52. ♀.

Biology: Matheson and Crosby, 1912. Ent. Soc. Amer., Ann. 5: 68-70. —Hungerford, 1919.

Kans. Univ., Sci. Bul. 11: 32. —Jackson, 1958. Roy. Ent. Soc. London, Trans. 110: 533-554.

Genus ACMOPOLYNEMA Ogloblin

Acmopolynema Ogloblin, 1946. Iowa State Col., Jour. Sci. 20: 286.

Type-species: *Stichothrix bifasciatipennis* Girault. Orig. desig.

bifasciatipenne (Girault). Mass., N. Y., s. to N. C., w. to Kans. and Tex. Host: *Anaxipha exigua* (Say), *Oecanthus* sp., *O. nigricornis nigricornis* Walker, *O. nigricornis quadripunctatus* Beut., *O. niveus* (Deg.).

Stichothrix bifasciatipennis Girault, 1908. Psyche 15: 115. ♀.

Polynema bifasciatipenne var. *varium* Girault, 1917. Psyche 24: 92. ♀, ♂. N. syn.

Biology: Parrott and Fulton, 1914. N. Y. State Agr. Expt. Sta., Bul. 388: 426. —Brandhorst, 1943. Kans. Acad. Sci., Trans. 46: 169-172.

Genus BARYPOLYNEMA Ogloblin

Barypolynema Ogloblin, 1946. Iowa State Col., Jour. Sci. 20: 282.

Type-species: *Barypolynema reticulatum* Ogloblin. Orig. desig.

aspidioti (Girault). Tex.; Mexico. Host: *Psallus seriatus* (Reut.).

Polynema aspidioti Girault, 1911. Ent. News 22: 358. ♂.

Taxonomy: Girault, 1912. Ent. News 23: 298 (correction). —Ogloblin, 1946. Iowa State Col., Jour. Sci. 20: 285.

medicae Annecke and Doutt. D. C., Calif.

Barypolynema medicae Annecke and Doutt, 1961. So. Afr. Dept. Agr. Tech. Ser., Ent. Mem. 5: 57. ♀, ♂.

saga (Girault). D. C., Kans. Host: *Opsius stactogalus* Fieber.

Anagrus saga Girault, 1911. Amer. Ent. Soc., Trans. 37: 296. ♀.

Biology: Lawson, 1929. Ent. Soc. Amer., Ann. 22: 130.

Genus STEPHANODES Enoch

Stephanodes Enoch, 1909. Roy. Ent. Soc. London, Trans. 1909: 457.

Type-species: *Stephanodes elegans* Enoch. Monotypic.

psecas (Girault). Ill., Iowa.

Polynema psecas Girault, 1911. Amer. Ent. Soc., Trans. 37: 319. ♀, ♂.

Taxonomy: Girault, 1912. N. Y. Ent. Soc., Jour. 20: 41 (*Stephanodes*). —Girault, 1912. Canad. Ent. 44: 89 (? syn. of *enockii* Girault, European sp.).

Genus POLYNEMA Haliday

Polynema Haliday, 1833. Ent. Mag. 1: 269, 347.

Type-species: *Ichneumon ovulorum* Linnaeus. Desig. by Westwood, 1840.

Eutriche Nees, 1834. Hym. Ichn. Aff. Monog., v. 2, p. 186.

Type-species: *Eutriche gracilis* Nees. Monotypic.

Callitriche Agassiz, 1848. Nomencl. Zool. Index Univ., pp. 173, 439. Emend of *Eutriche*, Preocc. by Poli, 1791.

Cosmocoma Foerster, 1856. Hym. Stud., v. 2, pp. 117, 120. N. name for *Polynema*, unnecessarily proposed.

Walkerella Westwood, 1878. Linn. Soc. London, Zool., Proc. 1: 584.

Type-species: *Polynema natans* Lubbock. Orig. desig.

Walkerella Westwood, 1883. Roy. Ent. Soc. London, Trans. (2) 1: 32.

Type-species: *Walkerella temeraria* Westwood. Orig. desig.

Maidliella Soyka, 1946. Zentbl. Gesamtgeb. Ent. 1: 178.

Type-species: *Maidliella neofuscipes* Soyka. Orig. desig.

Novickyella Soyka, 1946. Zentbl. Gesamtgeb. Ent. 1: 179.

Type-species: *Novickyella gracilior* Soyka. Orig. desig.

Taxonomy: Soyka, 1956. Zool.-Bot. Ges. Wien., Abhandl. 19: 32.

bimaculatipenne Girault. Tex.

Polynema bimaculatipenne Girault, 1911. Amer. Ent. Soc., Trans. 37: 304. ♀.

boreum Girault. S. Dak. Ecology: Swept from wheat.

Polynema striaticorne var. *boreum* Girault, 1916 (1915). Ent. News 27: 8. ♀.

Taxonomy: Burks, 1969. In Krombein and Burks, U. S. Dept. Agr., Agr. Monog. 2, Sup. 2, p. 216.

caesariatipenne Girault. D. C., Kans. Ecology: Reared from seed pod of ironweed.

Polynema caesariatipenne Girault, 1911. Amer. Ent. Soc., Trans. 37: 305. ♀.

ciliatum (Say). Ind.

Psilus ciliatus Say, 1828. Contrib. Maclur. Lyc. Phila. 1: 80.

consobrinus Girault. Ga., Ohio, Mich., Ill., Minn., Iowa. Host: *Enchenopa binotata* (Say);

Anthonomus signatus Say.

Polynema consobrinus Girault, 1911. Amer. Ent. Soc., Trans. 37: 308, 309. ♀, ♂.

Taxonomy: Girault, 1911. Ent. News 22: 467.

enchenopae Girault. Ill. Host: *Enchenopa binotata* (Say).

Polynema enchenopae Girault, 1911. N. Y. Ent. Soc., Jour. 19: 15. ♀, ♂.

eutettixi Girault. Idaho, Utah, Calif.; Mexico. Host: *Circulifer tenellus* (Baker).

Polynema eutettixi Girault, 1917. Descr. Stellarum Nov., p. 18. ♀, ♂.

Polynema eutettixi Stahl, 1920. Jour. Agr. Res. 20: 250. Emend.

Biology: Stahl, 1920. Jour. Agr. Res. 20: 250.

florum Girault. B. C.

Polynema florum Girault, 1929. No. Amer. Hym. Mymaridae, pp. 18, 28. ♀.

graculus Girault. Wis., Ill., Tex.

Polynema graculus Girault, 1911. Amer. Ent. Soc., Trans. 37: 308. ♂.

howardii (Ashmead). Colo., Calif. Host: *Ceresa bubalus* (F.).

Cosmocoma elegans Howard, 1881. U. S. Dept. Agr., Ann. Rpt. for 1880, p. 371. ♂. Preocc. by *Polynema elegans* Foerster, 1847.

- Cosmocoma Howardii* Ashmead, 1887. Canad. Ent. 19: 194. N. name.
Cosmocoma Howardi Dalla Torre, 1890. Wien. Ent. Ztg. 9: 97. N. name.
- Taxonomy: Girault, 1911. Amer. Ent. Soc., Trans. 37: 300-302. ♂.
- imitatrix** Gahan. Ariz. Host: *Stictocephala festina* (Say).
Polynema imitatrix Gahan, 1918. Ent. Soc. Wash., Proc. 20: 24. ♀, ♂.
- longipes** (Ashmead). Del., Fla., Ohio, Ind., Ill., Tenn. Ecology: Common on wheat plants.
Ooctonus longipes Ashmead, 1887. Canad. Ent. 19: 192. ♀.
Polynema citripes Girault, 1909. Psyche 16: 106.
- Taxonomy: Girault, 1911. Amer. Ent. Soc., Trans. 37: 316, 324. —Girault, 1911. N. Y. Ent. Soc., Jour. 19: 19, 22.
- maculipes** (Ashmead). Fla.
Cosmocoma maculipes Ashmead, 1887. Canad. Ent. 19: 194. ♂.
- Taxonomy: Girault, 1911. Amer. Ent. Soc., Trans. 37: 306-308.
- marilandicum** Girault. Md.
Polynema marilandicum Girault, 1917. Descr. Hym. Chalcidoid. Variorum cum Observ. V, p. 2. ♀.
- mymaripenne** Dozier. Del.
Polynema mymaripennis Dozier, 1933. Ent. Soc. Wash., Proc. 35: 96. ♀.
- nativum** Girault. B. C.
Polynema nativum Girault, 1929. No. Amer. Hym. Mymaridae, pp. 19, 28.
- needhami** Ashmead. Ill. Host: *Lestes dryas* Kirby; *L. unguiculatus* Hagen.
Polynema needhami Ashmead, 1900. Ent. News 11: 616. ♀, ♂.
- picipes** Girault. N. Y., Ga.
Polynema picipes Girault, 1905. Psyche 12: 91. ♀.
Polynema piceipes Girault, 1911. N. Y. Ent. Soc., Jour. 19: 18, 22. Emend.
- Taxonomy: Girault, 1911. Amer. Ent. Soc., Trans. 37: 313.
- pratensiphagum** Walley. Ont. Host: *Lygus lineolaris* (P. de B.).
Polynema pratensiphaga Walley, 1929. Canad. Ent. 61: 193. ♀, ♂.
- Biology: Painter, 1929. Ent. Soc. Ont., Ann. Rpt. 60: 105.
- regina** Girault. B. C.
Polynema regina Girault, 1912. Ent. Soc. Wash., Proc. 14: 24. ♀.
- sibylla** Girault. Va., Ill., Wis.
Polynema sibylla Girault, 1911. Amer. Ent. Soc., Trans. 37: 311. ♀, ♂.
- striaticorne** Girault. N. S., s. to Va., w. to B. C. and Calif. Host: *Ceresa borealis* (Fairm.); *C. bubalus* (F.), *C. taurina* (Fitch), *Oncopsis sobrius* (Walk.), *Stictocephala inermis* (F.).
Polynema striaticorne Girault, 1911. N. Y. Ent. Soc., Jour. 19: 12. ♀, ♂.
- Taxonomy: Girault, 1911. Amer. Ent. Soc., Trans. 37: 302-308.
- Biology: Balduf, 1928. Ent. Soc. Amer., Ann. 21: 419-435. —Craighead, 1950. U. S. Dept. Agr., Misc. Pub. 657: 619.
- Morphology: Burks, 1938. Ent. Soc. Amer., Ann. 31: 161 (venation).
- zetes** Girault. D. C., Ill.
Polynema zetes Girault, 1911. Amer. Ent. Soc., Trans. 37: 314. ♀.

Family TRICHOGRAMMATIDAE

By B. D. BURKS

All members of this family are parasites in the eggs of other insects. Their thoracic structures show them to have affinities with the Eulophidae, but they must have diverged from the eulophid stem at some remote time in chalcidoid evolution. Since all trichogrammatids have 3-segmented tarsi, lack the strigil of the foretibia, have greatly reduced antennae, never have the abdomen petiolate, and the forewing usually bears characteristic lines of cilia, they are widely separated from their nearest relatives in the Eulophidae.

Revision: Girault, 1912 Wis. Nat. Hist. Soc., Bul. 10: 81-100. — Girault, 1914. Wis. Nat. Hist. Soc., Bul. 12: 55-71. — Girault, 1918. No. Amer. Hym. Trichogrammatidae, Sydney, Austral. 11 pp. — Dount and Viggiani, 1968. Calif. Acad. Sci. Proc. (4) 35: 477-586.

Taxonomy: Kryger, 1918. Ent. Meddel. 12: 257-354 (European spp.). — Mani, 1938. Cat. Indian Insects, pt. 23, pp. 133-141 (bibliography and cat. of Indian spp.). — Kloete and Hincks, 1945. Check List Brit. Insects, Arboath, Scotland, p. 303 (list Brit. spp.).

Genus OLIGOSITA Walker

Oligosita Walker, 1851. Ann. and Mag. Nat. Hist. (2)7: 212-213. (Cited as Haliday MS.)

Type-species: *Oligosita collina* Walker. Monotypic.

Westwoodella Ashmead, 1904. Carnegie Mus., Mem. 1: 359.

Type-species: *Oligosita subfasciata* Westwood. Monotypic.

Paroligosita Kurdjumov, 1911. Russ. Ent. Obozr. 11: 434.

Type-species: *Paroligosita bella* Kurdjumov. Orig. desig.

Pseudoligosita Girault, 1913. Queensland Mus., Mem. 2: 104.

Type-species: *Pseudoligosita arnoldi* Girault. Orig. desig.

Zorontogramma Silvestri, 1915. Lab. Zool. Agr. Portici, Bol. 9: 327.

Type-species: *Zorontogramma distinctum* Silvestri. Orig. desig.

americana Girault. Ind. and Ill., s. to S. C., Ga., Tex., and N. Mex. Host: *Dorycephalus platyrhynchus* Osb., *Homalodisca insolita* (Walk.), cicadellid eggs in grasses.

Oligosita americana Girault, 1909. Psyche 16: 106. ♀.

Taxonomy: Girault, 1911. Amer. Ent. Soc., Trans. 37: 56-62.

clarimaculosa (Girault). Va., Ill.

Westwoodella clarimaculosa Girault, 1911. Amer. Ent. Soc., Trans. 37: 67. ♀.

comosipennis (Girault). N. Y.

Westwoodella comosipennis Girault, 1911. Amer. Ent. Soc., Trans. 37: 66. ♀.

marilandia Girault. Md.

Oligosita marilandia Girault, 1917. Chalcidoid. nova Marilandensis II, p. 1. ♀.

plebeia (Perkins). Okla.; Mexico. Host: Cicadellid eggs in cane.

Westwoodella plebeia Perkins, 1912. Hawaii. Sugar Planters' Assoc. Expt. Sta., Div. Ent. Bul. 10: 16. ♀.

sanguinea (Girault). Conn. w. to N. Dak., s. to Fla., Ariz., Calif.; Mexico and Brazil Host: Cicadellid eggs in wheat, grasses, and clover.

Westwoodella sanguinea Girault, 1911. Amer. Ent. Soc., Trans. 37: 58-62. ♀, ♂.

Oligosita sanguinea var. *claripes* Girault, 1916. Ent. News 27: 4. ♀.

subfasciatipennis (Girault). Vt., Wis., Iowa, N. Dak., Wash. Host: Cicadellid eggs in wheat.

Westwoodella subfasciatipennis Girault, 1911. Amer. Ent. Soc., Trans. 37: 63-66.

Genus MEGAPHRAGMA Timberlake

Megaphragma Timberlake, 1924. Hawaii. Ent. Soc., Proc. 5: 413.

Type-species: *Megaphragma mymaripenne* Timberlake. Monotypic.

Sethosiella Kryger, 1932. Soc. Ent. d'Egypte, Bul. p. 38.

Type-species: *Sethosiella priesneri* Kryger. Monotypic.

Members of this genus, being parasites in thrips eggs, are thought to be the smallest of all insects. Some specimens have an overall body length of only 170 or 180 microns. However, some of the mymarids of the genus *Alaptus* Haliday have a body length of only 200 microns and are much more slender, so that it is difficult to decide which is actually the smaller.

Revision: Ghesquiere, 1939. Rev. Zool. Bot. Africaines 33: 39.

mymaripenne Timberlake. La., Calif.; Hawaii; Haiti. Host: Eggs of *Heliothrips haemorrhoidalis* Bouche and *Leucothrips* sp.

Megaphragma mymaripenne Timberlake, 1924. Hawaii. Ent. Soc., Proc. 5: 413. ♀.

Biology: Dozier, 1932. Ent. Soc. Wash., Proc. 34: 29-30.

Genus HYDROPHYLITA Ghesquiere

Hydrophylax Matheson and Crosby, 1912. Ent. Soc. Amer., Ann. 5: 65. Preocc. by Fitzinger, 1843.

Type-species: *Hydrophylax aquivolans* Matheson and Crosby. Monotypic.

Hydrophylita Ghesquiere, 1946. Rev. Zool. Bot. Africaines 39: 371. N. name.

Lutzimicron Costa Lima, 1960. Sao Paulo Inst. Biol., Arq. 27: 197.

Type-species: *Lutzimicron lestesi* Costa Lima. Monotypic.

Taxonomy: DeSantis, 1964. Comision inv. Cient. Prov. B. A., Notas 2(3): 3-5. —Doutt and Viggiani, 1968. Calif. Acad. Sci., Proc. (4) 35: 493.

aquivolans (Matheson and Crosby). N. Y., Ohio, Kans. Host: Eggs of *Ischnura verticalis* (Say).

Hydrophylax aquivolans Matheson and Crosby, 1912. Ent. Soc. Amer., Ann. 5: 65. ♂, ♀.

Biology: Davis, 1962. Limnol. and Oceanog. 7: 390-392.

Genus PARACENTROBIA Howard

Paracentrobia Howard, 1897. Linn. Soc. London, Jour., Zool. 26: 178.

Type-species: *Paracentrobia punctata* Howard. Monotypic.

Abbella Girault, 1911. Amer. Ent. Soc., Trans. 37: 9.

Type-species: *Abbella subflava* Girault. Orig. desig.

Ittys Girault, 1911. Amer. Ent. Soc., Trans. 37: 25.

Type-species: *Trichogramma ceresarum* Ashmead. Monotypic.

Brachistella Girault, 1911. N. Y. Ent. Soc., Jour. 19: 184.

Type-species: *Trichogramma acuminata* Ashmead. Monotypic.

Jassidophthora Perkins, 1912. Hawaii. Sugar Planters' Assoc. Expt. Sta., Div. Ent. Bul. 10: 17.

Type-species: *Jassidophthora prima* Perkins. Monotypic.

Abbellisca Ghesquiere, 1946. Rev. Zool. Bot. Africaines 39: 371. N. name, unnecessarily proposed.

Taxonomy: Doutt and Viggiani, 1968. Calif. Acad. Sci., Proc. (4) 35: 562.

acuminata (Ashmead). N. Y. and Minn. s. to Fla., La., Tex., and Calif.; Mexico, West Indies.

Host: *Lestes dryas* Kirby, *L. unguiculatus* Hagen, *Cuerna costalis* (Fab.), *Draeculacephala minor* (Walk.), *D. mollipes* (Say), *D. portola* (Ball), *Homalodisca insolita* (Walk.). There is some evidence that a complex of species is at present under this one name.

Trichogramma acuminatum Ashmead, 1888. Canad. Ent. 20: 107. ♀, ♂.

Brachista pallida Ashmead, 1900. Ent. News 11: 616. ♀.

Biology: Gibson, 1915. U. S. Dept. Agr., Bul. 254: 14. —Turner and Pollard, 1959. U. S. Dept. Agr., Tech. Bul. 1188: 26-27.

americana (Girault). Utah. Host: Cicadellid eggs in *Elymus*.

Abbella americana Girault, 1917. U. S. Natl. Mus., Proc. 53: 445. ♀, ♂.

auriscutellum (Girault). Ariz.; Mexico. Host: *Draeculacephala mollipes* (Say).

Abbella auriscutellum Girault, 1916. Ent. News 27: 4. ♀.

Biology: Gibson, 1915. U. S. Dept. Agr., Bul. 254: 14.

ceresarum (Ashmead). N. S., N. J., Ohio, Ill., Calif. Host: *Ceresa borealis* Fairm., *C. bubalus* (Fab.), *C. taurina* (Fitch), *Stictocephala inermis* (Fab.).

Trichogramma ceresarum Ashmead, 1888. Canad. Ent. 20: 107. ♀.

livii (Girault). Md.

Neobrachistella livii Girault, 1918. No. Amer. Hym. Trichogrammatidae, Sydney, Austral., p. 11. ♀.

nympha (Girault). Tex. Host: Cicadellid eggs in stems of *Ambrosia*; eggs of *Psallus seriatus* (Reuter).

Abbella nympha Girault, 1911. Entomologist 44: 197. ♀.

perditrix (Gahan). Ariz. Host: *Stictocephala festina* (Say).

Abbella (Ittys) perditrix Gahan, 1918. Ent. Soc. Wash., Proc. 20: 25. ♀, ♂.

prima (Perkins). Fla., Tex.; Mexico. Host: Cicadellid eggs in cane.

Jassidophthora prima Perkins, 1912. Hawaii. Sugar Planters' Assoc. Expt. Sta., Div. Ent. Bul. 10: 18. ♀, ♂.

subflava (Girault). D. C., S. C., Ill., Kans., S. Dak., Idaho, Wash., Calif.; Mexico, Argentina, Australia. Host: *Blissus leucopterus* (Say) (?), *Balclutha impicta* (Van Duzee), *Circulifer tenellus* (Baker), *Deltocephalus minutus* Van Duzee, *D. sonorus* Ball, *Empoasca solana* De Long, *Halticus bracteatus* (Say). The conspecificity of the North American and Australian specimens of this species should be reinvestigated, even though the identifications of both were made by the author of this species. A careful reading of the paper by McColloch and Yuasa, cited below, shows that the record of *subflava* from the eggs of the chinch bug is either incorrect or fortuitous.

Abbella subflava Girault, 1911. Amer. Ent. Soc., Trans. 37: 11. ♀, ♂.

Biology: McColloch and Yuasa, 1915. Ent. News 26: 147-148. — Stahl, 1920. Jour. Agr. Res. 20: 250. — Henderson, 1941. U. S. Dept. Agr., Cir. 593: 1-18. — Henderson, 1955. U. S. Dept. Agr., Cir. 967: 1-16. — Flock *et al.*, 1962. Jour. Econ. Ent. 55: 279.

Genus UFENS Girault

Ufens Girault, 1911. Amer. Ent. Soc., Trans. 37: 32.

Type-species: *Trichogramma nigrum* Ashmead. Orig. desig.

Ufensia Girault, 1913. Queensland Mus., Mem. 2: 101.

Type-species: *Ufensia pretiosa* Girault. Orig. desig. Genus redescribed the following year with the same type-species in Ent. Soc. Wash., Proc. 16: 118.

Neocentrobia Blood, 1923. Bristol Nat. Soc., Ann. Rpt. and Proc. 2: 101. Nom. nud.

Neocentrobia Blood and Kryger, 1928. Ent. Meddel. 16: 203. Preoc. by Girault, 1912.

Type-species: *Neocentrobia hirticornis* Blood and Kryger. Orig. desig.

Stephanotheisa Soyka, 1931. Natuurh. Maandbl. 20: 111.

Type-species: *Stephanotheisa vitoldi* Soika. Monotypic.

Grantanna Girault, 1939. Ohio Jour. Sci. 39: 324. N. name for *Neocentrobia*.

Taxonomy: Doutt and Viggiani, 1968. Calif. Acad. Sci., Proc. (4) 35: 576.

beneficus Dozier. Tex.; Mexico, West Indies. Host: Orthopterous eggs, probably of Tettigoniidae, deposited on leaf surfaces.

Ufens beneficus Dozier, 1932. Ent. Soc. Wash., Proc. 34: 33. ♀, ♂.

niger (Ashmead). Del., Md., w. to Ohio, Ill., Idaho, and Wash., s. to Fla., La., Tex., and Calif.; Mexico, West Indies. Host: *Colladonus geminatus* (Van Duzee), *Cuerna costalis* (Fab.), *Keonolla confuens* (Uhler), *Draeculacephala mollipes* (Say), *Homalodisca* sp., *Saccharosydne saccharivora* (Westw.). This may represent a complex of species.

Trichogramma nigrum Ashmead, 1888. Canad. Ent. 20: 107. ♀.

spiritus Girault. Md., Ga., Fla., La. Host: *Homalodisca coagulata* (Say), *Oncometopia orbona* (Fab.).

Ufens spiritus Girault, 1918. No. Amer. Hym. Trichogrammatidae, Sydney, Austral., p. 6.

Ufens spiritus americanus Girault, 1918. No. Amer. Hym. Trichogrammatidae, Sydney, Austral., p. 6.

Genus BRACHYUFENS Viggiani

Brachyufens Viggiani, 1968. In Doutt and Viggiani, Calif. Acad. Sci., Proc., (4) 35: 566.

Type-species: *Ufens osborni* Dozier. Orig. desig.

osborni (Dozier). Fla.; West Indies. Host: *Diaprepes* spp., *Pachnaeus litus* (Germ.). This may be a secondary parasite.

Ufens osborni Dozier, 1932. Ent. Soc. Wash., Proc. 34: 36. ♀, ♂.

Biology: Tucker, 1936. Barbados Agr. Jour. 5: 9. — Baranowski, 1960. Fla. Ent. 43: 197.

Genus ZAGELLA Girault

Zagella Girault, 1918. No. Amer. Trichogrammatidae, Sydney, Austral., pp. 2, 7.

Type-species: *Paracentrobia flavipes* Girault. Orig. desig.

Burksiella De Santis, 1957. La Plata Univ. Nac, Facultad de Cien. Nat. y Mus., Notas de Mus. 19: 133.

Type-species: *Burksiella subannulata* De Santis. Orig. desig.

Taxonomy: Doutt and Viggiani, 1968. Calif. Acad. Sci., Proc. (4) 35: 572.

flavipes (Girault). D. C., Ga., Calif. Host: *Lestes* sp., lepidopterous eggs.

Paracentrobia flavipes Girault, 1905. Ent. News 16: 287. ♀, ♂.

Genus TRICHOGRAMMA Westwood

Trichogramma Westwood, 1833 (June). London, Edinb. and Dublin Phil. Mag. and Jour. Sci. (3) 2: 444.

Type-species: *Trichogramma evanescens* Westwood. Monotypic.

Callepites Haliday, 1833 (July). Ent. Mag. 1: 340.

Type-species: *Callepites latipennis* Haliday. Monotypic.

Pentarthron Packard, 1872 (1871). Rec. Amer. Ent., p. 8.

Type-species: *Trichogramma ? minuta* Riley. Monotypic.

Trichogramma subg. *Aprobosca* Westwood, 1878. Linn. Soc. London, Trans., Zool., (2) 1: 592.

Type-species: *Trichogramma (Aprobosca) erosicornis* Westwood. Monotypic.

Oophthora Aurivillius, 1898 (1897). Ent. Tidskr. 18: 250.

Type-species: *Oophthora semblidis* Aurivillius. Monotypic.

Pentarthrum Dalla Torre, 1898. Cat. Hym., v. 5, p. 3. Emend.

Xanthoatomus Ashmead, 1904. Carnegie Mus., Mem. 1: xi, 360.

Type-species: *Xanthoatomus albipes* Ashmead. Orig. desig.

Neotrichogramma Girault, 1911. Amer. Ent. Soc., Trans. 37: 38-39.

Type-species: *Neotrichogramma acutiventre* Girault. Orig. desig.

Trichogramma subg. *Trichogrammatana* Girault, 1932. New lower Hymenoptera from Australia and India, Brisbane, Austral., p. 1.

Type-species: *Trichogramma singularis* Girault. Monotypic.

The latest revision of this genus was published in 1960. Although it was a very great improvement over the 1918 revision, it left most workers unsatisfied. At present other revisional works are in progress, and new papers revising *Trichogramma* may be published at about the time this catalog appears. Several undescribed species from North America are at present known to be in manuscript. Fundamental studies are also currently being made on the genetics, hybridization, male genitalia, and biologies of the described species of *Trichogramma*. Consequently, the arrangement of the species in this catalog is provisional.

Due to the fact that much of the older literature on biology cannot now be assigned to individual species as they are listed in this catalog, a large part of the biological literature on *Trichogramma* that was published before 1960 has been omitted. This literature is cited in full elsewhere; see Peck, 1963. Canad. Ent., Sup. 30: 51-73.

Any species of this genus can be reared in the laboratory or insectary on the eggs of almost any convenient host, although Salt, 1938. Bul. Ent. Res. 29: 223-246 showed that a few insect eggs may be physically or chemically unsuitable. The true host specificity for *Trichogramma* in nature seems to be to appropriate insect eggs that are deposited in particular environmental niches rather than simply to the eggs of particular host species. Consequently, host species are not listed here for the species of *Trichogramma*, but their ecological requirements, as far as they are known, are indicated.

Revision: Girault, 1918. N. Amer. Hym. Trichogrammatidae, Sydney, Austral., p. 4.

—Quednau, 1960. Biol. Bund. fur Land- u. Forstwirtschaft, Mitt. 100: 11-50.

Taxonomy: Flanders, 1937. Ent. Soc. Amer., Ann. 30: 208-210. —Flanders, 1938. Jour. Econ. Ent. 31: 456-457. —Ishii, 1941. Kontyu 14: 169-176 (Japanese spp., male genitalia).

—Quednau, 1956. Ber. Hundertjahr Deut. Ent. Ges. Berlin, pp. 87-92. —Quednau, 1956.

Ztschr. Pflanzkrankh. u. Pflanzensch. 63: 333-344. —Telenga, 1959. First Internatl.

Cong. Insect Path. Biol. Control Prague, Trans. pp. 355-360. —Flanders and Quednau,

1960. Entomophaga 5: 285-294. —Quednau, 1960 Biol. Bund fur Land- u. Forstwirtschaft,

Mitt. 100: 11-50. —Tseng, 1965. Acta Ent. Sinica 14: 404 (Chinese spp., male genitalia).

- Nagarkatti and Nagaraja, 1968. Commonwealth Inst. Biol. Control, Tech. Bul. 10: 81-96 (hybridization, male genitalia). —Doutt and Viggiani, 1968. Calif. Acad. Sci., Proc., (4) 35: 533-535. —Chepetilnikova, 1970 (1968). Ann. Zool. Ecol. Anim., pub. 70-3, pp. 71-76. —Fazaluddin and Nagarkatti, 1971. Ent. Soc. Amer., Ann. 64: 1470-1471. —Nagarkatti and Nagaraja, 1971. Bul. Ent. Res. 61: 13-31 (male genitalia).
- Biology:** Evans, 1930. Austral. Jour. Council Sci. Indus. Res. 3: 106-116. —Marchal, 1931. Paris Acad. des Sci., Compt. Rend. 192: 316-318. —Thompson, 1932. Indian Jour. Agr. Sci. 2: 413-415. —Nikolskaja, 1933. Zashch. rast. 3: 25-34. —Schread and Garman, 1933. Conn. Agr. Expt. Sta., Bul. 353: 691-756. —Schread and Garman, 1934. N. Y. Ent. Soc., Jour. 42: 263-283. —Flanders, 1935. Pan-Pacific Ent. 11: 175-177. —Bowen, 1936. Ent. Soc. Amer., Ann. 29: 119-125. —Marchal, 1936. Ann. des Epiphyt. et de Phytogenet., n. ser., 2: 447-567. —Meyer, 1938. Zool. Zhur. 17: 924-932. —Meyer, 1941. Leningrad Inst. Zool. Appl. Phytopath., Bul. 12: 273-277. —Meyer, 1941. Trichogramma, Tadzhikistan Agr., 176 pp. —Kovaleva, 1954. Zool. Zhur. 33: 77-86. —Quednau, 1956. Ztschr. f. Parasitenk. 17: 360-364. —Kovaleva, 1957. Zool. Zhur. 36: 225-229. —Quednau, 1959. Ztschr. f. Pflanzenkrank. 66: 77-86. —Mayer, 1960. Biol. Bund. fur Land- u. Forstwirtschaft., Mitt. 100: 3-10. —Stein, 1960. Entomophaga 5: 237-259. —Klink, 1961. Ztschr. f. Angew. Zool. 48: 476-492. —Quednau, 1961. Entomophaga 6: 155-161. —Parnell, 1964. Roy. Ent. Soc. London, Trans. 116: 80. —Kot, 1964. Ekol. Polska, (A) 2: 243-303. —Nagarkatti, 1970. Current Sci. 39(4): 76-78.
- euproctidis** (Girault). Mass., D. C., Ill.; Europe, Japan. Ecology: Insect eggs deposited in fields and forest-edge, orchards are parasitized.
- Pentarthron euproctidis* Girault, 1911. Amer. Ent. Soc., Trans. 37, 46. ♂.
- Taxonomy:** Nagarkatti and Nagaraja, 1971. Bul. Ent. Res. 61: 18.
- Biology:** Schread, 1934. Conn. Agr. Expt. Sta., Bul. 360: 463. —Garman, 1936. Conn. Agr. Expt. Sta., Bul. 383: 326. —Neiswander, 1936. Ohio Agr. Expt. Sta., Bul. 569: 19. —Allen *et al.*, 1940. U. S. Dept. Agr., Cir. 561: 18, 40, 59. —Flanders, 1968. Ent. Soc. Amer., Ann. 61: 1122-1124.
- evanescens** Westwood. Scattered areas throughout S. Canada and the U. S. Ecology: Insect eggs deposited on herbaceous vegetation, primarily in cultivated areas, are parasitized. Introd. from Europe.
- Trichogramma evanescens* Westwood, 1833. London, Edinb. and Dublin Phil. Mag. and Jour. Sci. (3) 2: 444.
- Taxonomy:** Quednau, 1960. Biol. Bund. fur Land- u. Forstwirtschaft., Mitt. 100: 11-50. —Nagarkatti and Nagaraja, 1971. Bul. Ent. Res. 61: 18.
- Biology:** Gatenby, 1918. Quart. Jour. Micros. Sci. 63: 161-174. —Thompson and Parker, 1928. U. S. Dept. Agr., Tech. Bul. 59: 17. —Hase, 1929. Internatl. Corn Borer Invest., Sci. Rpt. 2: 85-89. —Salt, 1935. Roy. Soc. London, Proc. (B) 117: 413-415. —Zimin, 1935. Zashch. rast. 1: 69-80. —Marchal, 1936. Ann. des Epiphyt. et de Phytogenet., n. s., 2: 495-522. —Salt, 1936. Jour. Expt. Biol. 13: 363-375. —Salt, 1937. Roy. Soc. London, Proc. (B) 122: 57-75. —Laing, 1937. Jour. Anim. Ecol. 6: 298-317. —Dirsh, 1937. Zashch. rast. 15: 69-80. —Salt, 1938. Bul. Ent. Res. 29: 223-246. —Laing, 1938. Jour. Expt. Biol. 15: 281-302. —Salt, 1939 (1938). Parasitology 30: 511-522. —Salt, 1940. Roy. Ent. Soc. London, Proc. (A) 15: 81-95. —Meyer, 1940. Zashch. Rast. Byul. 4: 70-77. —Salt, 1942 (1941). Biol. Rev. Cambridge Phil. Soc. 16: 242-262. —Telenga, 1956. Ent. Obozr. 35: 599-609. —Kot, 1960. Polskie Pismo, Ent. (B) 1-2: 23-30. —Lee, 1961. Acta Ent. Sinica 10: 340. —Pu and Liu, 1962. Acta Ent. Sinica 11: 409. —Kaitazov, 1963. Rast. Zashch. Sofia 11: 20. —Kot, 1964. Ekol. Polska, (A) 12: 247. —Karpova, 1965. Ent. Obozr. 44: 500. —Oatman *et al.*, 1968. Ent. Soc. Amer., Ann. 61: 956-959. —Oatman *et al.*, 1968. Jour. Econ. Ent. 61: 724-730. —Lewis and Redlinger, 1969. Ent. Soc. Amer., Ann. 62: 1482-1484. —Oatman *et al.*, 1970. Ent. Soc. Amer., Ann. 63: 633-635. —Shchichenkov, 1971. Akad. Nauk Eston. SSR Inst. Zool. i Bot., Apr., pp. 152-155. —Iren and Gurkan, 1971. Bitki Koruma Bul. 11: 157-168. —Parker *et al.*, 1971. Jour. Econ. Ent. 64: 721-735. —Lewis *et al.*, 1971. Jour. Econ. Ent. 64: 557-558.
- fasciatum** (Perkins). Fla., La., and S. Gulf Coast of Tex.; Mexico, West Indies, Cent. Amer., No. S. Amer. Ecology: Insect eggs on sugarcane, corn, and other Gramineae; also eggs deposited on vegetation in tropical or subtropical savannah habitats are parasitized.
- Pentarthron fasciatum* Perkins, 1912. Hawaii. Sugar Planters' Assn., Ent. Ser. Bul. 10: 19.

- Taxonomy: Quednau, 1960. Biol. Bund. fur Land- u. Forstwirtschaft, Mitt. 100: 11-50.
—Nagarkatti and Nagaraja, 1971. Bul. Ent. Res. 61: 20.
- Biology: Burrell and McCormick, 1962. Jour. Econ. Ent. 55: 880. —Breniere, 1965. Entomophaga 10: 274. —Chen, 1967 (1966). Mushi 39(suppl.): 104. —Drummond *et al.*, 1970. Lepidopterists' Soc., Jour. 24: 140.
- minutum** Riley. S. Canada, U. S. except for most southern and southwestern areas. Ecology: Insect eggs deposited in arboreal habitats are parasitized.
Trichogramma minutum Riley, 1871. Mo. State Bd. Agr., Ann. Rpt. 6: 157.
- Taxonomy: Flanders, 1953. Ent. Soc. Amer., Ann. 46: 85. —Quednau, 1960. Biol. Bund. fur Land- u. Forstwirtschaft, Mitt. 100: 11-50. —Nagarkatti and Nagaraja, 1971. Bul. Ent. Res. 61: 21, 23.
- Biology: Langston, 1957. Univ. Calif. Pubs., Ent. 14: 25-26. —Downey, 1958 (1957). Ill. State Acad. Sci., Trans. 50: 299. —Schaffner, 1959. U. S. Dept. Agr., Misc. Pub. 767: 81. —Glass, 1963. Ent. Soc. Amer., Ann. 56: 564. —Kulman, 1965. Ent. Soc. Amer., Ann. 58: 241-243. —Flanders, 1968. Ent. Soc. Amer., Ann. 61: 1122-1124. —Oatman *et al.*, 1970. Ent. Soc. Amer., Ann. 63: 633-635. —Fazalludin and Nagarkatti, 1971. Ent. Soc. Amer., Ann. 64: 1470-1471.
- pretiosum** Riley. S. Canada, U. S. except most southern and southwestern areas. Ecology: Insect eggs deposited on herbaceous vegetation in campestral habitats are parasitized.
Trichogramma pretiosum Riley, 1879. Canad. Ent. 11: 161. ♀, ♂.
- Taxonomy: Flanders, 1953. Ent. Soc. Amer., Ann. 46: 85. —Flanders, 1968. Ent. Soc. Amer., Ann. 61: 1122-1124. —Orphanides and Gonzalez, 1970. Ent. Soc. Amer., Ann. 63: 1784-1785. —Nagarkatti and Nagaraja, 1971. Bul. Ent. Res. 61: 24-25.
- Biology: Oatman, 1966. Jour. Econ. Ent. 59: 831. —Orphanides and Gonzalez, 1970. Ent. Soc. Amer., Ann. 63: 1734-1740. —Oatman *et al.*, 1970. Ent. Soc. Amer., Ann. 63: 633-635. —Orphanides and Gonzalez, 1971. Ent. Soc. Amer., Ann. 64: 824-834. —Fazalludin and Nagarkatti, 1971. Ent. Soc. Amer., Ann. 64: 1470-1471. —Oatman and Platner, 1971. Jour. Econ. Ent. 64: 501-506.
- retorridum** (Girault). Iowa s. to no. New Mexico, w. to Great Basin and Pacific Coast Range in Central Calif. Ecology: Insect eggs deposited in dry, but not arid, environments are parasitized.
Pentarthron retorridum Girault, 1911. Amer. Ent. Soc., Trans. 37: 52. ♀, ♂.
- Taxonomy: Quednau, 1960. Biol. Bund fur Land- u. Forstwirtschaft, Mitt. 100: 11-50.
—Nagarkatti and Nagaraja, 1971. Bul. Ent. Res. 61: 25-27.
- Biology: Webster, 1912. Jour. Econ. Ent. 5: 335-336. —Stern and Atallah, 1965. Ent. Soc. Amer., Ann. 58: 76-81. —Orphanides and Gonzalez, 1971. Ent. Soc. Amer., Ann. 64: 824-834.
- semlidis** (Aurivillius). Canada and No. U. S.; Europe. Ecology: Insect eggs deposited in aquatic or semi-aquatic habitats are parasitized. In nature this species parasitizes the eggs of such insects as *Chrysops*, *Tabanus*, *Sialis*, and *Chauliodes* that occur in an aquatic habitat. When it is reared in the insectary on such hosts as the eggs of *Ephestia* the progeny are so different they would be taken for another species were their derivation not known.
Oophthora semlidis Aurivillius, 1897. Ent. Tidskr. 18: 253. ♀, ♂.
- Taxonomy: Quednau, 1960. Biol. Bund fur Land- u. Forstwirtschaft, Mitt. 100: 11-50.
—Kolomiets, 1962. Akad. Nauk SSSR Sibirskoi Otdel. Biol. Inst., p. 134. —Nagarkatti and Nagaraja, 1971. Bul. Ent. Res. 61: 26-27.
- Biology: Cameron, 1926. Bul. Ent. Res. 17: 38-39. —Salt, 1937. Parasitology 29: 539-553. —Van Steenburgh, 1938. Ent. Soc. Ontario, Ann. Rpt. 69: 74-75. —Salt, 1939 (1938). Parasitology 30: 511-522. —Reid, 1941. Roy. Ent. Soc. London, Trans. 91: 434. —Salt, 1942 (1941). Cambridge Phil. Soc., Biol. Rev. 16: 239-264. —Quednau, 1955. Nachr. Deut. Pflanzenschutzdienst. 7: 145-148. —Quednau, 1957. Deut. Ent. Ztschr. (N. F.) 4: 364.
- Morphology: Bouillon, 1949. La Cellule 53: 35-95.

semifumatum (Perkins). West Tex., N. Mex., Ariz., Southern Calif.; Hawaii, Mexico, Colombia.

Ecology: Insect eggs deposited in semi-arid habitats are parasitized.

Pentarthron semifumatum Perkins, 1910. Fauna Hawaii., v. 2, pt. 6, p. 659. ♀.

Taxonomy: Quednau, 1960. Biol. Bund für Land- u. Forstwirtschaft, Mitt. 100: 11-50.

—Nagarkatti and Nagaraja, 1971. Bul. Ent. Res. 61: 27-29.

Biology: Hinkley, 1961. Jour. Econ. Ent. 54: 207. —Stern and Bowen, 1963. Ent. Soc. Amer.,

Ann. 56: 358-372. —Poinar, 1964. Jour. Econ. Ent. 57: 381. —Stern and Atallah, 1965. Ent.

Soc. Amer., Ann. 58: 76-81. —Stern *et al.*, 1965. Ent. Soc. Amer., Ann. 58: 234-240.

—Elbadry, 1965. Ent. Soc. Amer., Ann. 58: 209-212. —Bowen and Stern, 1966. Ent. Soc.

Amer., Ann. 59: 823-834. —Stern and Shorey, 1968. Jour. Econ. Ent. 61: 898-901. —Taylor,

1969. Ghana Jour. Sci. 9: 30-34. —Davis, 1969. Hawaii. Ent. Soc., Proc. 20: 521-525.

—Oatman *et al.*, 1970. Ent. Soc. Amer., Ann. 63: 633-635. —Taylor and Stern, 1971. Ent.

Soc. Amer., Ann. 64: 1381-1390.

UNPLACED SPECIES OF TRICHOGRAMMA WESTWOOD

The following species have for many years been listed as synonyms of *minutum* Riley. Now that *minutum* itself is being redefined, all its synonyms must be re-evaluated.

Trichogramma minutissimum Packard, 1881. Boston Soc. Nat. Hist., Proc. 21: 37. ♀, ♂.

Trichogramma odontotae Howard, 1885. Ent. Amer. 1: 117. ♀, ♂.

Trichogramma intermedium Howard, 1889. In Scudder, Butterflies of Eastern U. S. and

Canada, pp. 1872, 1895. ♀, ♂.

Xanthoatomus albipes Ashmead, 1904. Carnegie Mus., Mem. 1: xi, 360. ♀.

Trichogramma pretiosa var. *nigra* Girault, 1906. Canad. Ent. 38: 82. ♀, ♂.

Trichogramma heliocharae Perkins, 1907. Hawaii. Sugar Planters' Assoc. Expt. Sta., Div. Ent.

Bul. 4: 58. (Probably not *Trichogramma*).

Genus TRICHOGRAMMATOMYIA Girault

Trichogrammatomyia Girault, 1916. Canad. Ent. 48: 268.

Type-species: *Trichogrammatomyia tortricis* Girault. Orig. desig.

tortricis Girault. Ont., N. B., Conn., N. Y. Host: *Archips argyrospilus* (Wlkr.), *A. cerasivoranus* (Fitch).

Trichogrammatomyia tortricis Girault, 1916. Canad. Ent. 48: 268. ♀, ♂.

Biology: Baird, 1918. Agr. Gaz. Canada 5: 766, 771. —Chapman, Pearce, and Avens, 1941.

Jour. Econ. Ent. 34: 643-644.

Genus POROPOEA Foerster

Poropoea Foerster, 1851. Naturh. Ver. Rheinlande, Verh. 8: 28.

Type-species: *Poropoea stollwerckii* Foerster. Monotypic.

Poropoea subg. *Poropoeoides* Nowicki, 1936. Ztschr. f. Angew. Ent. 23: 125.

Type-species: *Poropoea* (*Poropoeoides*) *bohemiae* Nowicki. Monotypic.

attelaborum Girault. S. E. U. S.; Puerto Rico. Host: *Attelabus analis* Illiger.

Poropoea attelaborum Girault, 1911. Ent. Soc., Trans. 37: 68. ♂.

Genus XENUFENS Girault

Xenufens Girault, 1916. Ent. News 27: 5.

Type-species: *Xenufens ruskini* Girault. Monotypic.

ruskini Girault. Fla.; Cuba. Host: *Calpodus ethlius* (Stoll), *Lerema accius* (A. and S.), *Preneis nero* (Fab.), *Urbanus proteus* (L.), undet. Hesperidae eggs.

Xenufens ruskini Girault, 1916. Ent. News 27: 6.

Genus GIRAULTIOLA Nowicki

Giraultiola Nowicki, 1936. Ztschr. f. Angew. Ent. 23: 136.

Type-species: *Brachysticha fidae* Ashmead. Monotypic. This species has been considered also to be the type-species of *Brachista* Walker, 1851, by subsequent

reference of Ashmead, 1894; see Gahan and Fagan, 1923. U. S. Natl. Mus. Bul. 124: 23. Nowicki, 1936, rejects this and designates *fidiae* type-species of his new genus, but does so on the basis of very weak arguments. Doutt and Viggiani, 1968, accept Nowicki's action, however, in order to preserve *Brachista* as usage dictates; that is, with *B. pungens* (Mayr) as type-species. *Brachista* in that sense does not occur in North America.

Taxonomy: Nowicki, 1936. Ztschr. f. Angew. Ent. 23: 127, 136. —Doutt and Viggiani, 1968. Calif. Acad. Sci., Proc. (4) 35: 497, 552.

fidiae (Ashmead). Pa., Va., Ohio. Host: *Magieicada septendecim* (L.); *Fidia viticida* Walsh. *Brachysticha fidiae* Ashmead, 1894. Cincinnati Soc. Nat. Hist., Jour. 17: 171. ♀. *Lathromeris cicadae* Howard, 1898. Canad. Ent. 30: 102. ♀, ♂.

Biology: Johnson and Hammar, 1910. U. S. Dept. Agr., Bur. Ent. Bul. 89: 51, 56-57. —Marlatt, 1898. U. S. Dept. Agr., Bur. Ent. Bul. 14(n. s.): 99. —Hyslop, 1936. Jour. Econ. Ent. 29: 676.

Genus TUMIDICLAVA Girault

Tumidiclava Girault, 1911. Amer. Ent. Soc., Trans. 37: 6.

Type-species: *Tumidiclava pulchrinotum* Girault. Orig. desig.

Orthoneura Blood and Kryger, 1928. Ent. Medd. 16: 211. Preocc. by Macquart, 1829.

Type-species: *Orthoneura bimaculata* Blood and Kryger. Orig. desig.

Orthoneurella Blood and Kryger, 1929. Ent. Medd. 16: 322. N. name.

pulchrinotum Girault. Fla., Ill., La. Host: Eggs of Tettigoniidae.

Tumidiclava pulchrinotum Girault, 1911. Amer. Ent. Soc., Trans. 37: 8. ♀.

Genus ZAGA Girault

Zaga Girault, 1911. Amer. Ent. Soc., Trans. 37: 30.

Type-species: *Zaga latipennis* Girault. Orig. desig.

latipennis Girault. Del., Va., Ill., La., Idaho, Utah. Host: Eggs of *Entylia sinuata* (Fab.), undet. membracid eggs.

Zaga latipennis Girault, 1911. Amer. Ent. Soc., Trans. 37: 31. ♀.

Genus APHELINOIDEA Girault

Aphelinoidea Girault, 1911. Amer. Ent. Soc., Trans. 37: 2.

Type-species: *Aphelinoidea semifuscipennis* Girault. Orig. desig.

Lathromeroides Girault, 1913. Ent. News 24: 211.

Type-species: *Lathromeroides longicarpus* Girault. Orig. desig.

Diaclava Blood and Kryger, 1928. Ent. Medd. 16: 213.

Type-species: *Diaclava waterhousei* Blood and Kryger. Orig. desig.

Krygeriola Nowicki, 1934. Polski Pismo Ent. 12: 3.

Type-species: *Krygeriola dolichoptera* Nowicki. Monotypic.

Thalesanna Girault, 1938. Rev. de Ent. 8: 80.

Type-species: *Aphelinoidea nigrioculae* Girault. Orig. desig.

Lathromeroides subg. *Lengerkeniola* Nowicki, 1946. Zentbl. Gesamtgeb. Ent. 1: 45.

Type-species: *Lengerkeniola bischoffi* Nowicki. Monotypic.

Encyrtogramma De Santis, 1957. La Plata Univ. Nac., Facultad de Cien. Nat. y Mus., Notas del Mus. 19: 33.

Type-species: *Encyrtogramma habros* De Santis. Orig. desig.

Tanygramma De Santis, 1957. La Plata Univ. Nac., Facultad de Cien. Nat. y Mus., Notas del Mus. 19: 37.

Type-species: *Tanygramma riphias* De Santis. Orig. desig.

Taxonomy: Doutt and Viggiani, 1968. Calif. Acad. Sci., Proc. (4) 35: 527.

neomexicana (Girault). Iowa, N. Dak., Mont., N. Mex., Idaho, Calif. Host: Undet. hemipterous eggs in grasses.

Lathromeroides neomexicanus Girault, 1916. Ent. News 27: 5. ♀.

plutella Girault. Va., Ill., Tex., N. Mex., Idaho, Utah, Ariz., Calif.; Mexico. Host: *Circulifer tenellus* (Baker).

Aphelinoidea plutella Girault, 1912. Ent. News 23: 296. ♀, ♂.

Biology: Henderson, 1941. U. S. Dept. Agr., Cir. 593: 1-18. —Henderson, 1955. U. S. Dept. Agr., Cir. 967: 1-16. —Flock *et al.*, 1962. Jour. Econ. Ent. 55: 279.

semifuscipennis Girault. Ill., Okla., Tex. Host: Leafhopper eggs in grasses.

Aphelinoidea semifuscipennis Girault, 1911. Amer. Ent. Soc., Trans. 37: 4. ♀.

Genus LATHROMEROIDEA Girault

Lathromeroidea Girault, 1912. Queensland Mus., Mem. 1: 94.

Type-species: *Lathromeroidea nigra* Girault. Orig. desig.

Centrobrips Girault, 1918. No. Amer. Hym. Trichogrammatidae, Sydney, Austral., pp. 4, 7.

Type-species: *Centrobria odonatae* Ashmead. Orig. desig.

Taxonomy: Doutt and Viggiani, 1968. Calif. Acad. Sci., Proc. (4) 35: 506-507.

odonatae (Ashmead). N. Y., Ill. Host: *Lestes uncatus* Kirby, *L. unguiculatus* Hagen.

Centrobria odonatae Ashmead, 1900. Ent. News 11: 616. ♀.

Genus USCANA Girault

Uscana Girault, 1911. Amer. Ent. Soc., Trans. 37: 22.

Type-species: *Uscana semifumipennis* Girault. Monotypic.

Bruchoctonus Grese, 1924. In Korab, Saratov Admin. State Assoc. Sugar Indus., Bul. 7: 116-117.

Type-species: *Bruchoctonus senax* Grese. Monotypic. *Lathromeris* of authors, not Foerster, 1856.

marilandica Girault. Md. Host: *Callosobruchus maculatus* (Fab.).

Uscana marilandica Girault, 1918. No. Amer. Hym. Trichogrammatidae, Sydney, Austral., p. 10.

semifumipennis Girault. N. J., D. C., N. Dak., Tex., Mont., Ariz.; Hawaii. Host: *Acanthoscelides alboscuteellatus* (Horn), *Althaeus hibisci* (Oliv.), *Callosobruchus maculatus* (Fab.), *Stator limbatus* (Horn).

Uscana semifumipennis Girault, 1911. Amer. Ent. Soc., Trans. 37: 23. ♀, ♂.

Biology: Paddock and Reinhard, 1919. Tex. Agr. Expt. Sta., Bul. 256: 81-83. —Steffan, 1954.

Paris Mus. d'Hist. Nat., Bul. (2) 26: 669.

UNPLACED TAXA IN CHALCIDOIDEA

By B. D. BURKS

Entedon antiopae Packard, 1881. Boston Soc. Nat. Hist., Proc. 21: 36. ♂. Type not located.

Stenomesus? aphidicola Ashmead, 1880. Orange Insects, p. 67. ♀, ♂. Type lost.

Smicra bimaculatas Strecker, 1878. U. S. War Dept., Ann. Rpt. 2 (3): 1878. Type not located.

Diomorus biorhizae Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 186. ♀. Type lost; from original description not *Diomorus*.

Halticoptera brodii Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 192. ♀. Type lost; from original description not *Halticoptera*.

Coccophagus brunneus Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 205. Type broken, but fragments look to be *Pteromalini*.

Taxonomy: Dalla Torre, 1898. Cat. Hym., v. 5, p. 224 (*Coccophagus*). —Burks, 1964 (1963).

Canad. Ent. 95: 1257 (type).

Camptotera clavata Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 404. ♀, ♂. Type lost.

Entedon coquillettii Riley, 1889. U. S. Dept. Agr., Ann. Rpt. for 1888, p. 86. Type lost.

Stinoplus cyaneus Ashmead, 1894. Amer. Ent. Soc., Trans. 21: 338. ♂. Type lost.

Trichogramma flavus Ashmead, 1880. Orange Insects, p. 33. ♀. Type lost.

Solenotus fletcheri Cockerell, 1889. Colo. Biol. Assoc., Rpt. 6: 2. Type lost.

Leucospis integra Haldeman, 1844. Acad. Nat. Sci. Phila., Proc. 2: 53. ♂. Type lost; from original description not *Leucospis*; *Brachymeria*?

Taxonomy: Cresson, 1872. Amer. Ent. Soc., Trans. 4: 35.

Cricellius megachilis Ashmead, 1897. South. Calif. Acad. Sci., Proc. 1 (3): 6. ♀, ♂. Type missing.

Semiotellus minimus Provancher, 1881. Nat. Canad. 12: 295.. ♀. Type fragmentary.

Taxonomy: Burks, 1964 (1963). Canad. Ent. 95: 1262 (type).

Meraporus monticola Ashmead, 1889. Colo. Biol. Assoc., Rpt. 3: 4. Type lost.

Pteromalus nigricornis Provancher, 1881. Nat. Canad. 12: 297. ♀. Type fragmentary, but not *Pteromalus*.

Taxonomy: Burks, 1964 (1963). Canad. Ent. 95: 1260 (type).

Eurytoma orbiculata Say, 1836. Boston Jour. Nat. Hist. 1: 272. Type lost.

Rhopalicus pallipies Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 407. ♀. Type lost, but from original description, not *Rhopalicus*.

Taxonomy: Burks, 1964 (1963). Canad. Ent. 95: 1261.

Enlophus ramosus Provancher, 1881. Nat. Canad. 12: 297. ♀, ♂. Type lost.

Taxonomy: Burks, 1964 (1963). Canad. Ent. 95: 1258 (type).

Trigonoderus varipes Viereck, 1903. Amer. Ent. Soc., Trans. 29: 75. ♀. Type lost.

Superfamily CYNIPOIDEA

By B. D. BURKS

The Cynipoidea have gone through an evolutionary development that approximately parallels that of the Chalcidoidea. Both superfamilies have parasitic and phytophagous forms, although the Cynipoidea does not include known genera that have phytophagous as well as parasitic species. In the Chalcidoidea several genera include phytophagous and parasitic species; in the Cynipoidea no such mixtures occur below the family level. It should be borne in mind, however, that the present classification of the Cynipoidea may have given unjustifiable weight to the habits of the forms placed in the various higher categories. In any case, in each superfamily it is debatable whether the phytophagous or parasitic habit is the more primitive. Although all authorities agree that the members of each superfamily came originally from phytophagous ancestors, there is disagreement as to whether the first Hymenoptera recognizable as representing either superfamily were parasitic or phytophagous. If they were parasitic, as many authorities believe, the present-day phytophagous species are secondarily evolved from parasitic ancestors. The close agreement in essential morphological characters among all members of each superfamily excludes the possibility of polyphyletic origin for the parasitic and phytophagous forms.

Revision: Dalla Torre and Kieffer, 1910. *Das Tierreich*, 24, Hymenoptera, Cynipidae, 891 pp. (world monograph, literature through 1905). — Weld, 1952. *Cynipoidea 1905-1950*. Ann Arbor, Mich., Privately Printed, 351 pp. (supplement to Dalla Torre and Kieffer; illustrated keys).

Taxonomy: Felt, 1940. *Plant Galls and Gall Makers*, pp. 78-228; 254-269; 329-338 (illustrated keys to galls). — Weld, 1957. *Cynipid Galls of Pacific Slope*. Ann Arbor, Mich., Privately Printed, 80 pp. (illustrated keys to galls). — Weld, 1959. *Cynipid Galls of the Eastern United States*, Ann Arbor, Mich., Privately Printed, 158 pp. (illustrated keys to galls). — Weld, 1960. *Cynipid Galls of the Southwest*. Ann Arbor, Mich., Privately Printed, 51 pp. (illustrated keys to galls).

Biology: Mani, 1964. *Ecology of Plant Galls*, 434 pp.

Family IBALIIDAE

SUBFAMILY IBALIINAE

Genus IBALIA Latreille

Ibalia Latreille, 1802. *Hist. Nat. Crust. Ins.* v. 3, p. 306

Type-species: *Ophion cultellator* Fabricius. Monotypic.

Sagaris Panzer, 1806. *Krit. Rev. Insektenf. Deutschlands*, v. 2, p. 91.

Type-species: *Ophion cultellator* Fabricius. Monotypic.

Parasitic on Siricidae. The European species *leucospoides* Hochenwarth has been successfully introduced into New Zealand for the control of *Sirex noctilio* (Fabricius) in plantings of introduced species of *Pinus*. *I. leucospoides* is now considered to be a senior synonym of *cultellator* Fabricius.

Taxonomy: Weld, 1952. Cynipoidea 1905-1950, p. 150 (key to U. S. spp.).

Biology: Cameron, 1965. Commonw. Inst. Biol. Control, Tech. Bul. 5: 18.

anceps Say, Minn., Ark., Tex.

Ibalia anceps Say, 1824. In Keating, Narr. Long's 2nd Exped., App., p. 325. ♀.

leucospoides ensiger Norton. Transcont. introd. into N. Zeal. and Australia. *Ibalia leucospoides leucospoides* (Hochenwarth) is Palearctic. Host: Siricidae and Syntexidae in conifers.

Ibalia ensiger Norton, 1862. Ent. Soc. Phila., Proc. 1: 200. ♀.

Biology: Wickman, 1964. Pan-Pacific Ent. 40: 19. — Wickman, 1967. Ent. Soc. Amer., Ann. 60: 1294. — Cameron, 1968. Pan-Pacific Ent. 44: 168. — Zondag, 1969. New Zeal. Jour. Sci. 12: 744.

maculipennis Haldeman. Que., Ont., Eastern U. S. Host: *Tremex coloumba* (L.). Differs from *scalpellator* Westwood only by slight differences in color, *teste* Weld, 1952. Cynipoidea 1905-1950, p. 150.

Ibalia maculipennis Haldeman, 1846. Acad. Nat. Sci. Phila., Proc. 3: 127. ♀.

Ibalia fasciipennis Kieffer, 1909. Soc. Hist. Nat. Metz, Bul. 26: 57. ♀.

Morphology: Snodgrass, 1941. Smithsn. Misc. Collect. 99: 37 (male genitalia).

montana Cresson. Labrador, Nev., Wash., Oreg., Calif.

Ibalia montana Cresson, 1879. Amer. Ent. Soc., Trans. 7: Proc. xvii. ♀.

ruficollis Cameron. N. Mex., Ariz.; Mexico. Host: *Sirex* in conifers.

Ibalia ruficollis Cameron, 1884. Roy. Ent. Soc. London, Trans. 1884: 488. ♀.

rufipes rufipes Cresson. Nova Scotia, N. B., Que., Ont., Man., Alta., Host: *Sirex cyaneus* Fab., *Urocera gigas flavicornis* (Fab.). The subspecies *rufipes drewseni* Borries is Palearctic.

Ibalia rufipes Cresson, 1879. Amer. Ent. Soc., Trans. 7: Proc. xvii. ♀.

Ibalia gigantea Yoshimoto, 1970. Canad. Ent. 102: 1196. ♀, ♂.

scalpellator Westwood. Ga.

Ibalia scalpellator Westwood, 1837. In Guerin, Mag. Zool. 7: cl. 9, pl. 179, fig. 2. ♂.

Family LIOPTERIDAE

SUBFAMILY MESOCYNIPINAE

Mostly exotic. Habits unknown.

Genus PARAMBLYNOTUS Cameron

Paramblynotus Cameron, 1908. Entomologist 41: 299.

Type-species: *Paramblynotus punctulatus* Cameron. Desig. by Rohwer and Fagan, 1917.

Allocynips Kieffer, 1914. Philippine Jour. Sci. 9 D: 185.

Type-species: *Allocynips ruficeps* Kieffer. Monotypic.

Mayrella Hedicke, 1922. Deut. Ent. Ztschr., p. 190.

Type-species: *Mayrella formosana* Hedicke. Monotypic.

Baviana Barbotin, 1954. Soc. Ent. France, Bul. 59: 125.

Type-species: *Baviana ferruginea* Barbotin. Monotypic.

Decellea Benoit, 1956. Rev. Zool. Bot. Africaines 53: 51.

Type-species: *Decellea yangambicola* Benoit. Monotypic.

Taxonomy: Weld, 1962 (1961). Ent. Soc. Wash., Proc. 63: 279. — Maa, 1962. Taiwan Mus., Quart. Jour. 15: 124.

zonatus Weld. Tex.

Paramblynotus zonatus Weld, 1944. Ent. Soc. Wash., Proc. 46: 56, fig. 2. ♀.

Genus **KIEFFERIELLA** Ashmead

Kiefferia Ashmead, 1903. *Psyche* 10: 10. Preocc. by Mik, 1895 and Kunstler and Chaine, 1902.

Type-species: *Kiefferia rugosa* Ashmead. Monotypic.

Kiefferiella Ashmead, 1903. *Ent. Soc. Wash., Proc.* 5: 221. N. name.

acmaeodera Weld. Idaho.

Kiefferiella acmaeodera Weld, 1956. *Ent. Soc. Wash., Proc.* 58: 291. ♀.

rugosa (Ashmead). Calif. (Santa Cruz Mts.).

Kiefferia rugosa Ashmead, 1903. *Psyche* 10: 10.

Taxonomy: Weld, 1921. *U. S. Natl. Mus., Proc.* 59: 435. ♀.

Family **FIGITIDAE**SUBFAMILY **ASPICERATINAE**

Parasites in the puparia of Syrphidae.

Genus **PARASPICERA** Kieffer

Paraspicera Kieffer, 1907. *Ent. Ztschr. Stuttgart* 21: 152.

Type-species: *Paraspicera bakeri* Kieffer. Monotypic.

bakeri Kieffer. Md., D. C., Ill., Wis.

Paraspicera bakeri Kieffer, 1907. *Ent. Ztschr. Stuttgart* 21: 152. ♂.

Taxonomy: Weld, 1944. *Ent. Soc. Wash., Proc.* 46: 57. (female).

clarimontis (Kieffer). Calif.

Aspicera clarimontis Kieffer, 1907. *Ent. Ztschr. Stuttgart* 21: 152. ♀.

utahensis (Ashmead), n. comb. Utah.

Aspicera utahensis Ashmead, 1896. *Amer. Ent. Soc., Trans.* 23: 183. ♀.

Genus **PROSASPICERA** Kieffer

Prospicera Kieffer, 1907. *Ent. Ztschr. Stuttgart* 21: 152.

Type-species: *Prospicera ensifera* Kieffer. Desig. by Rohwer and Fagan, 1917.

albihirta (Ashmead). Fla.

Aspicera albihirta Ashmead, 1887. *Amer. Ent. Soc., Trans.* 14: 156. ♀.

similis (Ashmead). Pa., Fla., Ark.

Aspicera similis Ashmead, 1887. *Amer. Ent. Soc., Trans.* 14: 156. ♀.

Aspicera albinervis Kieffer, 1910. *Lab. Zool. Gen. e Agr. Portici, Bol.* 4: 337. ♀, ♂.

Genus **OMALASPIS** Giraud

Omalaspis Giraud, 1860. *Zool.-Bot. Gesell. Wien, Verhandl.* 10: 155.

Type-species: *Omalaspis norica* Giraud. Monotypic.

Lambertonia Kieffer, 1901. *Soc. Ent. France, Bul.* 1901, pp. 158, 159.

Type-species: *Lambertonia abnormis* Kieffer. Desig. by Ashmead, 1903.

Tavaresia Kieffer, 1901. *Soc. Ent. France, Bul.* 1901, pp. 158, 160.

Type-species: *Tavaresia carinata* Kieffer. Desig. by Ashmead, 1903.

Taxonomy: Weld, 1931. *Ent. Soc. Wash., Proc.* 33: 22. —Weld, 1952. *Cynipoidea 1905-1950*, p. 168.

nigra (Hartig). N. Y., Del., Va., Ala., Ill., Okla., Colo., Idaho; Europe. Prob. adventive. Host: Syrphid puparia.

Figites niger Hartig, 1840 (1839). *Ztschr. f. Ent.* 2: 202. ♀.

Genus **CALLASPIDIA** Dahlbom

Callaspidia Dahlbom, 1842. *Onychia och Callaspidia*, p. 10.

Type-species: *Callaspidia De fonscolombe* Dahlbom. Desig. by Rohwer and Fagan, 1917.

- provancheri** Ashmead. Que., Maine, N. H., Mass., N. Y., Conn., Pa., Mich., Ind., Ill., Wis., Idaho.
Host: *Metasyrphus americanus* (Wiedemann).
Callaspidia provancheri Ashmead, 1887. *In* Provancher, Addit. Corr. Faune Ent. Canada Hym., p. 167. ♀.

SUBFAMILY ANACHARITINAE

Parasitic in the cocoons of lace-wing flies: *Chrysopa*, *Symphorobius*, *Hemerobius*.

Genus XYALASPIS Hartig

- Xyalaspis* Hartig, 1843. Ztschr. f. Ent. 4: 416.
Type-species: *Xyalaspis laevigata* Hartig. Monotypic.
Conaspicera Hedicke, 1914. Nyt. Mag. Nat. Kristiana 52: 354.
Type-species: *Conaspicera norvegica* Hedicke. Orig. desig.
flavipes Ashmead. Md., Va.
Xyalaspis flavipes Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 183. ♂.
microstyla Kieffer. Ala.
Xyalaspis microstyla Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 151. ♂.

Genus ACOTHYREUS Ashmead

- Acothyreus* Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 157.
Type-species: *Acothyreus osceola* Ashmead. Monotypic.
mellipes Provancher. Que.
Acothyreus mellipes Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 438. ♀.
osceola Ashmead. Fla.
Acothyreus osceola Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 157. ♂.

Genus ANACHARIS Dalman

- Anacharis* Dalman, 1823. Anal. Ent., p. 96.
Type-species: *Cynips eucharoides* Dalman. Monotypic.
Megapelmus Hartig, 1840 (1839). Ztschr. f. Ent. 2: 186.
Type-species: *Megapelmus sphecoformis* Hartig. Monotypic.
flavicornis Kieffer. Wis.
Anacharis flavicornis Kieffer, 1909. Soc. Hist. Nat. Metz, Bul. 26: 80. ♂.
lamyi Cockerell. N. Mex.
Anacharis mexicana Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 184. ♀. Preocc. by Cameron, 1884.
Anacharis lamyi Cockerell, 1899. Kans. Acad. Sci., Trans. 16: 213. N. name.
Anacharis ashmeadi Dalla Torre and Kieffer, 1902. *In* Wytsman, Gen. Ins., fasc. 9, p. 141. N. name, unnecessarily proposed.
levifrons Kieffer. Pa.
Anacharis levifrons Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 143. ♀.
marginata Provancher. Que. (Cap Rouge).
Anacharis marginata Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 168. ♂.
melanoneura Ashmead. Va., S. C., Ga., Fla., La., Tex.
Anacharis melanoneura Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 158. ♂.
pediculata Provancher. Ont. (Ottawa).
Anacharis pediculata Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 169. ♂.
punctatifrons Kieffer. Calif.
Anacharis punctatifrons Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 143. ♀.
Taxonomy: Kieffer, 1908. Soc. Sci. Bruxelles, Ann. 32: 64. ♂.
subcompressa (Provancher). Que., Ill., Iowa.
Encoila subcompressa Provancher, 1881. Nat. Canad. 12: 237. ♀.
tripartita Kieffer. Calif.
Anacharis tripartita Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 143. ♀.

Genus **HEXACHARIS** Kieffer

Hexacharis Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 142.

Type-species: *Hexacharis flavipes* Kieffer. Monotypic.

flavipes Kieffer. Colo.

Hexacharis flavipes Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 142. ♂.

Genus **AEGILIPS** Walker

Aegilips Walker, 1835. Ent. Mag. 3: 160.

Type-species: *Cynips nitidula* Dalman. Desig. by Westwood, 1840.

aciculatus Provancher. Canada.

Aegilips aciculatus Provancher, 1881. Nat. Canad. 12: 239. ♂, ♀.

clarimontis Kieffer. Calif. Host: *Chrysopa californica* Coq.

Aegilips clarimontis Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 143. ♀.

nevadensis Kieffer. Nev.

Aegilips nevadensis Kieffer, 1908. Soc. Sci. Bruxelles, Ann. 32: 63. ♂.

obtusilobae Osten Sacken. D. C.

Aegilips? obtusilobae Osten Sacken, 1861. Ent. Soc. Phila., Proc. 1: 68. ♀.

reticulata Kieffer. Calif.

Aegilips reticulata Kieffer, 1908. Soc. Sci. Bruxelles, Ann. 32: 63. ♂.

rugata Kieffer. Colo.

Aegilips rugata Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 144. ♀.

trisecta Kieffer. Wis.

Aegilips trisecta Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 143. ♂.

victoriae Ashmead. B. C. (Victoria).

Aegilips victoriae Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 184. ♀.

SUBFAMILY FIGITINAE

Parasitic in the puparia of Diptera.

Genus **NERALSIA** Cameron

Neralsia Cameron, 1883. Biol. Centr.-Amer., Hym., v. 1, p. 74.

Type-species: *Neralsia rufipes* Cameron. Monotypic.

Solenaspis Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 155. Preocc. by Osten Sacken, 1881.

Type-species: *Solenaspis hyalinipennis* Ashmead. Monotypic.

Xyalosema Dalla Torre and Kieffer, 1910. Das Tierreich, v. 24, p. 94. N. name for

Solenaspis Ashmead.

armata (Say). East and middle U. S. Host: *Sarcophaga bullata* Parker, *S. plinthopyga* Wied.

Diptolepis armatus Say, 1836. Boston Jour. Nat. Hist. 1: 266. ♂.

Biology: Roberts, 1935. Jour. Agr. Res. 50: 487-488.

hyalinipennis (Ashmead). Va. s. to Fla. Ecology: Reported on human excrement.

Solenaspis hyalinipennis Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 155. ♀.

Xyalosema dubiosa Kieffer, 1910. Lab. Zool. Gen. e Agr. Portici, Bol. 4: 338. ♂, ♀.

nigriventris (Kieffer). Nev.

Xyalophora impatiens var. *nigriventris* Kieffer, 1908. Soc. Sci. Bruxelles, Ann. 32: 64. ♂.

Genus **XYALOPHORA** Kieffer

Xyalophora Kieffer, 1901. Soc. Ent. France, Bul. p. 344.

Type-species: *Figites clavatus* Giraud. Orig. desig.

leviventris Kieffer. Colo.

Xyalophora leviventris Kieffer, 1908. Soc. Sci. Bruxelles, Ann. 32: 64. ♂.

quinquelineata (Say). Transcont. in Transit. zone. Host: *Sarcophaga* sp.

Diptolepis 5-lineata Say, 1836. Boston Jour. Nat. Hist. 1: 267. ♀.

Xyalophora armata var. *nigricornis* Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 157. ♂, ♀.

singularis (Ashmead). Ill.

Solenaspis singularis Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 183. ♂, ♀.

Genus PARASCHIZA Weld

Paraschiza Weld, 1944. Ent. Soc. Wash., Proc. 46: 58.

Type-species: *Paraschiza cupressana* Weld. Orig. desig.

cupressana Weld. Calif. Ecology: Taken from holes of *Citellus* in mushrooms.

Paraschiza cupressana Weld, 1944. Ent. Soc. Wash., Proc. 46: 58. ♀.

Genus LONCHIDIA Thomson

Lonchidia Thomson, 1861. Ofvers. Svensk. Vet.-Akad., Forh. 18: 413.

Type-species: *Figites maculipennis* Dahlbom. Desig. by Foerster, 1869.

hirta Provancher. Que. (Cap Rouge).

Lonchidia hirta Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 170. ♀.

Genus MELANIPS Walker

Melanips Walker, 1835. Ent. Mag. 3: 161. No species. —Giraud, 1860. Zool.-Bot. Gesell.

Wien, Verh. 10: 163. Seven species.

Type-species: *Scytodes opacus* Hartig. Desig. by Foerster, 1869.

Scytodes Hartig, 1840 (1839). Ztschr. f. Ent. 2: 187, 202. Preocc. by Latreille, 1804.

Type-species: *Scytodes opacus* Hartig. Desig. by Rohwer and Fagan, 1917.

Amblynotus Hartig, 1843. Ztschr. f. Ent. 4: 419. N. name for *Scytodes* Hartig.

bilineatus (Kieffer). Idaho, Wash.

Amblynotus bilineatus Kieffer, 1909. Soc. Hist. Nat. Metz, Bul. 26: 82. ♀.

coxalis (Kieffer). Nev., Calif.

Amblynotus jowensis (!) var. *coxalis* Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 161. ♂, ♀.

coxalis var. *dipteriorum* (Kieffer). Ark.

Amblynotus coxalis var. *dipteriorum* Kieffer, 1910. Lab. Zool. Gen. e Agr. Portici, Bol. 4: 339. ♂.

iowensis Ashmead. Iowa.

Melanips iowensis Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 158. ♂, ♀.

opacus (Hartig). Calif.; Europe.

Scytodes opacus Hartig, 1840. Ztschr. f. Ent. 2: 202. ♂, ♀.

Biology: Belizin, 1966. Kishinev. Moldavian Nauch.-Issled Inst. Sadov. Vinograd.: Vinod. Ent., Trudy 13: 9. (Russian hosts).

semirugosus (Crawford). N. Y. (Adirondack Mts.).

Amblynotus semirugosus Crawford, 1917. Ent. Soc. Wash., Proc. 19: 172. ♀.

slossonae (Crawford). N. H. (Mt. Washington).

Amblynotus slossonae Crawford, 1917. Ent. Soc. Wash., Proc. 19: 171. ♀.

Genus SAROTHRUS Hartig

Sarothrus Hartig, 1840 (1839). Ztschr. f. Ent. 2: 187.

Type-species: *Sarothrus canaliculatus* Hartig. Desig. by Foerster, 1869.

Amphithectus Hartig, 1840 (1839). Ztschr. f. Ent. 2: 203.

Type-species: *Amphithectus dahlbomii* Hartig. Monotypic.

californicus Kieffer. Calif.

Sarothrus californicus Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 161. ♂, ♀.

canadensis Kieffer. Ont., Colo.

Sarothrus canadensis Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 161. ♀.

nasoni Ashmead. Ill. (Algonquin).

Sarothrus (!) *nasoni* Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 182. ♀.

Genus TRISCHIZA Foerster

Trischiza Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 364, 367.

Type-species: *Figites agaricolarum* Dahlbom. Monotypic.

Figitodes Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 150.

Type-species: *Figitodes atricornis* Ashmead. First included species, Ashmead, 1896.

atricornis (Ashmead). N. Mex. (Santa Fe).

Figitodes atricornis Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 182. ♀.

leviventris Kieffer. Nev. (Ormsby Co.).

Trischiza leviventris Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 161. ♂.

Genus ZYGOSIS Foerster

Zygosis Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 363, 365.

Type-species: *Figites urticeti* Dahlbom. Orig. desig.

Dicerava Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 364, 367.

Type-species: *Figites urticeti* Dahlbom. Orig. desig.

Thyreocera Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 154.

Type-species: *Thyreocera nigrifemora* Ashmead. Monotypic.

laevicutum (Provancher). Que.

Figites laevicutum Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 170. ♂, ♀.

Thyreocera nigrifemora Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 155. ♀.

Genus FIGITES Latreille

Figites Latreille, 1802. Hist. Nat. Crust. Ins., v. 3, p. 307.

Type-species: *Cynips scutellaris* Rossi. Desig. by Latreille, 1810.

Psilogaster Hartig, 1840 (1839). Ztschr. f. Ent. 2: 187.

Type-species: *Psilogaster anthomyiarum* Bouche. Desig. by Rohwer and Fagan, 1917.

Pychnotrichia Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 363, 366.

Type-species: *Pychnotrichia erythroga* Foerster. Orig. desig.

Omalaspoides Hedicke, 1913. Ent. Mitt. 2: 146.

Type-species: *Omalaspoides letzneri* Hedicke. Orig. desig.

Seitneria Tavares, 1928. Broteria, Rev. Luso-Brazil. Ser. Zool. 25: 5.

Type-species: *Seitneria austriaca* Tavares. Monotypic.

albinervis Kieffer. Wis. (Polk Co.).

Figites albinervis Kieffer, 1909. Soc. Hist. Nat. Metz, Bul. 26: 82. ♂.

coloradensis Ashmead. Colo. (Westcliffe).

Figites coloradensis Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 12, 38. ♀.

consobrinus Giraud. D. C., Va.; Europe. Prob. adventive. Host: *Sarcophaga* sp.

Figites consobrinus Giraud, 1860. Zool.-Bot. Gesell. Wien, Verh. 10: 153. ♂, ♀.

floridanus Ashmead. Fla. (Jacksonville).

Figites floridanus Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 155. ♀.

floridanus var. *dubius* Kieffer. Pa., Ark.

Figites dubius Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 161. ♂.

Figites floridanus var. *dubius* Kieffer, 1910. Lab. Zool. Gen. e Agr. Portici, Bol. 4: 339. ♂.

floridensis Weld. N. Y., Va., Fla., Ala., Tex.

Omalaspis floridanus Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 155. ♂. Preocc. by Ashmead, 1887.

Figites floridensis Weld, 1944. Ent. Soc. Wash., Proc. 46: 62. ♀. N. name.

impatiens Say. Ind.

Figites impatiens Say, 1836. Boston Jour. Nat. Hist. 1: 268. ♀.

inermis (Provancher). Que. (Cap Rouge).

Onychia inermis Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 171. ♂.

parvulus Kieffer. Colo.

Figites parvulus Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 161. ♂.

popenoei Crawford. D. C.

Figites popenoei Crawford, 1915. U. S. Natl. Mus., Proc. 48: 582. ♂, ♀.

Family EUCOILIDAE

Parasites in the puparia of Diptera.

Taxonomy: Quinlan, 1967. R. Ent. Soc. London, Proc. (B) 36: 1-10 (key to genera).

Genus KLEIDOTOMA Westwood

Genus KLEIDOTOMA Subgenus KLEIDOTOMA Westwood

Kleidotoma Westwood, 1833. Mag. Nat. Hist. 6: 494.Type-species: *Kleidotoma psiloides* Westwood. Monotypic.*Clidotoma* Westwood, 1869. In Foerster, Zool.-Bot. Gesell. Wien, Verh. 19: 342, 348. Emend.*Schizosema* Kieffer, 1901. Feuille Jeunes Nat. (4)31: 161.Type-species: *Cothonaspis emarginatus* Hartig. Desig. by Ashmead, 1903.*Coptereucoila* Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 151.Type-species: *Coptereucoila americana* Ashmead. Monotypic.*Trirhoptrasema* Kieffer, 1901. Soc. Ent. France Bul., p. 344.Type-species: *Kleidotoma americana* Ashmead. Monotypic.*americana* Ashmead. Que. (Cap Rouge).*Kleidotoma americana* Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 152, line 6. ♀.*Trirhoptrasema ashmeadi* Rohwer and Fagan, 1911. U. S. Natl. Mus., Proc. 53: 377, footnote. N. name, unnecessarily proposed.*ashmeadi* (Kieffer). Fla. (Jacksonville).*Coptereucoila americana* Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 152, top line. ♀. Preocc. by Ashmead, 1887.*Cleidotoma* (*Cleidotoma*(!)) *ashmeadi* Kieffer, 1901. Feuille Jeunes Nat. (4)31: 161. N. name.*fossa* Kieffer. Calif. (San Mateo Co.).*Kleidotoma fossa* Kieffer, 1908. Soc. Sci. Bruxelles, Ann. 32: 60. ♀.*marginata* (Gillette). Ill. (Quincy, Normal).*Coptereucoila marginata* Gillette, 1891. Ill. State Lab. Nat. Hist., Bul. 3: 203. ♀.*marginata* var. *glabra* Kieffer. Calif. (San Mateo Co.).*Kleidotoma marginata* var. *glabra* Kieffer, 1908. Soc. Sci. Bruxelles, Ann. 32: 61. ♂, ♀.

Genus KLEIDOTOMA Subgenus TETRARHOPTRA Foerster

Tetrarhoptra Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 342, 349.Type-species: *Kleidotoma heterotoma* Thomson. Orig. desig.*Tetratoma* Cameron, 1890. Monog. Brit. Phytophagous Hym., v. 3, p. 223.Type-species: *Kleidotoma heterotoma* Thomson. Desig. by Rohwer and Fagan, 1917.*alaskensis* (Ashmead). Alaska (St. Paul Island).*Tetrarhapta*(!) *alaskensis* Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 141. ♂, ♀.*lugens* Kieffer. Colo., Calif.*Kleidotoma lugens* Kieffer, 1908. Soc. Sci. Bruxelles, Ann. 32: 62. ♀.*tristis* Kieffer. Calif. (San Mateo Co.).*Kleidotoma* (*Tetrarhoptra*) *tristis* Kieffer, 1908. Soc. Sci. Bruxelles, Ann. 32: 62. ♀.

Genus KLEIDOTOMA Subgenus KLEIDOTOMIDEA Rohwer and Fagan

Kleidotomidea Rohwer and Fagan, 1917. U. S. Natl. Mus., Proc. 53: 369.Type-species: *Kleidotoma hexatoma* Thomson. Orig. desig.*californica* Kieffer. Calif.*Kleidotoma* (*Hexacola*) *californica* Kieffer, 1908. Soc. Sci. Bruxelles, Ann. 32: 62. ♂, ♀.

Genus KLEIDOTOMA Subgenus HEPTAMERIS Foerster

Heptameris Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 342, 350.Type-species: *Eucoela pygmaea* Dahlbom. Monotypic.

oscinidis (Ashmead). Ohio. Host: *Oscinella* sp. in wheat stems.

Heptameris oscinidis Ashmead, 1893. Ohio Agr. Expt. Sta., Tech. Ser., Bul. 1(3): 159. ♀.

UNPLACED SPECIES IN KLEIDOTOMA WESTWOOD

avenae (Fitch). N. Y. Ecology: Captured in grain field.

Allotria Avenae Fitch, 1861(1860). N. Y. State Agr. Soc. Trans. 20: 842. ♂.

carolinensis Kieffer. "Carolina."

Kleidotoma carolinensis Kieffer, 1910. Lab. Zool. Gen. e Agr. Portici, Bol. 4: 334. ♂.

rufitarsis (Ashmead). Kans. (Riley Co.).

Copterencoilia (!) *rufitarsis* Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App. p. I. ♀.

Genus HEXACOLA Foerster

Hexucola Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 342, 349.

Type-species: *Eucoela picicrus* Giraud. Monotypic.

Hexuplasta Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 345, 359.

Type-species: *Cothonaspis hexatoma* Hartig. Orig. desig.

Taxonomy: Weld, 1962 (1961). Ent. Soc. Wash., Proc. 63: 280.

hexatoma (Hartig). Va.; Europe. Prob. introduced with its host. Host: *Oscinella frit* (L.).

Cothonaspis hexatoma Hartig, 1841. Ztschr. f. Ent. 3: 357. ♀.

subaperta (Kieffer). Pa. (Jeannette).

Ganaspis subaperta Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 131. ♀.

websteri (Crawford). Kans. (Wellington). Host: *Euxesta nitidiventris* Loew.

Hexaplasta websteri Crawford, 1915. U. S. Nat. Mus., Proc. 48: 582. ♀.

Genus EUTRIAS Foerster

Eutrias Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 344, 357.

Type-species: *Eucoela tritoma* Thomson. Monotypic.

tritoma (Thomson). Tex. Introduced from Europe. Host: Sepsidae in cow dung.

Eucoela tritoma Thomson, 1861. Ofvers. Svensk. Vet.-Akad., Forh. 18: 403. ♀.

Genus EUCOILA Westwood

Eucoila Westwood, 1833. Mag. Nat. Hist. 6: 494.

Type-species: *Eucoila crassinerva* Westwood. Monotypic.

Eucoela Agassiz, 1846. Nomencl. Zool. Index Univ., p. 146. Emend.

Psilodora Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 348, 354.

Type-species: *Cothonaspis boyenii* Hartig. Orig. desig.

Lytosema Kieffer, 1901. Feuille Jeunes Nat. (4)31: 162.

Type-species: *Eucoila guerini* Dahlbom. Desig. by Ashmead, 1903.

atricornis (Kieffer). "Carolina."

Lytosema atricornis Kieffer, 1910. Lab. Zool. Gen. e Agr. Portici, Bol. 4: 330. ♂.

cultra (Girault). Ill. (Urbana).

Psilodora cultra Girault, 1920. U. S. Natl. Mus., Proc. 58: 182. ♀.

erythrope (Ashmead). Va. s. to Ga., w. to Mo., Tex. Ecology: Reported on human excrement.

Cothonaspis erythropus. Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App. p. I. ♂.

hirticornis (Kieffer). Pa.

Lytosema hirticornis Kieffer, 1910. Lab. Zool. Gen. e Agr. Portici, Bol. 4: 330. ♀.

impatiens (Say). N. Y., Ill., Tex., N. Mex. Introduced into Hawaii. Host: *Sarcophaga* sp.,

Haematobia irritans (L.), dung-fly larvae.

Diplolepis impatiens Say, 1836. Boston Jour. Nat. Hist. 1: 267. ♂.

Kleidotoma cupulifera Provancher, 1881. Nat. Canad. 12: 238. ♂, ♀.

rufocincta (Kieffer). Western and Southwest. U. S. Host: Maggots in cow dung and blow-fly larvae in carrion.

Psilodora rufocincta Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 131. ♂.

rufoscutata Kieffer. Ark. (Fayetteville).

Eucoila rufoscutata Kieffer, 1910. Lab. Zool. Gen. e Agr. Portici, Bol. 4: 332. ♂.

septempinosus Gillette. Ill. (Quincy).

Eucoila 7-spinosa Gillette, 1891. Ill. State Lab. Nat. Hist., Bul. 3: 204. ♀.

vagabunda (Ashmead). Gulf coast, Fla. to Tex.

Kleidotoma vagabunda Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 302. ♀.

Genus APOREUCOELA Kieffer

Aporeucoela Kieffer, 1908. Soc. Sci. Bruxelles, Ann. 32: 49.

Type-species: *Aporeucoela fuscipes* Kieffer. Monotypic.

floridana (Ashmead). Fla. (Archer).

Piezobria floridana Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 185. ♀.

fuscipes Kieffer. Calif. (Claremont).

Aporeucoela fuscipes Kieffer, 1908. Soc. Sci. Bruxelles, Ann. 32: 49. ♀.

Genus TRYBLOGRAPHA Foerster

Genus TRYBLOGRAPHA Subgenus TETRAPLASTA Ashmead

Tetraplasta Ashmead, 1903. Psyche 10: 68.

Type-species: *Tetraplasta unica* Ashmead. Orig. desig.

Taxonomy: Weld, 1952. Cynipoidea 1905-1950, p. 220.

bakeriana (Kieffer). Calif. (San Mateo Co.).

Cothonaspis bakeriana Kieffer, 1908. Soc. Sci. Bruxelles, Ann. 32: 56. ♀, ♂.

pictipennis (Kieffer). Calif. (Claremont).

Cothonaspis (Tetraplasta) pictipennis Kieffer, 1909. Soc. Hist. Nat. Metz, Bul. 26: 70. ♂, ♀.

Genus TRYBLOGRAPHA Subgenus PENTAPLASTIDIA Weld

Trybliographa subg. *Pentaplastidia* Weld, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 603.

Type-species: *Cothonaspis (Pentarhoptra) clarimontis* Kieffer. Orig. desig.

Taxonomy: Weld, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 603.

clarimontis (Kieffer). Calif. (Claremont).

Cothonaspis (Pentarhoptra) clarimontis Kieffer, 1909. Soc. Hist. Nat. Metz, Bul. 26: 72. ♀.

Genus TRYBLOGRAPHA Subgenus DIDYCTIUM Riley

Didyctium Riley, 1879. In Comstock, Rpt. on Cotton Ins., pp. 197-198.

Type-species: *Didyctium zigzag* Riley. Monotypic.

Didyctium Comstock, 1879. Rpt. on cotton Ins., pp. 214, 500. Emend.

Didyctium Weld, 1952. Cynipoidea 1905-1950, p. 221. Emend.

Taxonomy: Weld, 1962 (1961). Ent. Soc. Wash., Proc. 63: 280.

fungicola (Crawford). D. C.

Hexaplasta fungicola Crawford, 1915. U. S. Natl. Mus., Proc. 48: 581. ♀.

lucida (Rohwer). N. Y. (Syracuse).

Hexaplasta lucida Rohwer, 1920. U. S. Natl. Mus., Proc. 57: 219. ♂, ♀.

marlatti (Crawford). Va. (Warrenton).

Hexaplasta marlatti Crawford, 1915. U. S. Natl. Mus., Proc. 48: 580. ♂, ♀.

minuta (Crawford). Tenn. (Nashville).

Hexaplasta minuta Crawford 1917 (1916). Insector Inscitiae Menstruus 4: 101. ♀.

zigzag (Riley). Fla., Ala. Host: *Megaselia aletiae* (Comst.).

Didyctium zig-zag Riley, 1879. In Comstock, Rpt. on Cotton Ins., pp. 198, 214, 500. ♂, ♀.

Taxonomy: Weld, 1962 (1961). Ent. Soc. Wash., Proc. 63: 280.

Genus TRYBLOGRAPHA Subgenus TRYBLOGRAPHA Foerster

Trybliographa Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 345, 359.

Type-species: *Cothonaspis scutellaris* Hartig. Orig. desig.

Dimicrostrophis Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 160. No included spp.

Dimicrostrophis(!) Ashmead, 1887. In Provancher, Addit. Corr. Faune Ent. Canada Hym., p. 172.

Type-species: *Dimicrostrophis ruficornis* Ashmead. First included sp.

Dimicrostrophis Sharp, 1888. Zool. Rec. 24 (Ins.): 204. Emend.

Dusmetiola Tavares, 1924. Broteria, Rev. Luso-Brazil., Ser. Zool. 21: 18.

Type-species: *Dusmetiola hispanica* Tavares. Monotypic.

fuscostrata (Kieffer). Calif. (San Mateo).

Cothonaspis fuscostrata Kieffer, 1908. Soc. Sci. Bruxelles, Ann. 32: 55. ♂, ♀.

neocera (Kieffer). Pa. (Jeannette).

Cothonaspis (Anectoclis) neocera Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 131. ♂, ♀.

rapae (Westwood). Ont., N. Y., N. J., Mich., Ill., Minn., Colo., B. C., Wash. Introduced from Europe. Host: *Hylemya* sp.

Eucoila rapae Westwood, 1835. Mag. Nat. Hist. 8: 178. ♂, ♀.

Pseudeucoila gillettei Washburn, 1906. Minn. Agr. Expt. Sta., Bul. 100: 8. ♀.

Biology: Wishart and Monteith, 1954. Canad. Ent. 56: 145-154 (immature stages).

ruficornis (Ashmead). Que. (Cap Rouge).

Dimicrostrophis ruficornis Ashmead, 1887. In Provancher, Addit. Corr. Faune Ent. Canada Hym., p. 173. ♀.

Genus TRYBLIOGRAPHA Subgenus Undetermined

aperta (Kieffer). Calif. (San Mateo Co.).

Eucoila (Rhoptromeris) aperta Kieffer, 1908. Soc. Sci. Bruxelles, Ann. 32: 58. ♂.

bakeriana var. **nigriventris** (Kieffer). Calif. (San Mateo).

Cothonaspis bakeriana var. *nigriventris* Kieffer, 1909. Soc. Hist. Nat. Metz, Bul. 26: 73. ♂.

coloradensis (Kieffer). Colo.

Cothonaspis coloradensis Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 136. ♂.

klagesi (Kieffer). Pa. (Jeannette).

Cothonaspis klagesi Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 136. ♂.

melanopa (Ashmead). Ohio. Host: *Leucopis* sp.

Hexaplasta melanopa Ashmead, 1894. Cincinnati Soc. Nat. Hist., Jour. 17: 40, 45. ♂.

nigricornis (Provancher). Ont. (Ottawa).

Dimicrostrophis nigricornis Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 436. ♀.

Genus PSICHACRA Foerster

Psichacra Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 344, 356.

Type-species: *Cothonaspis longicornis* Hartig. Monotypic.

laticeps (Kieffer). Nev. (Ormsby Co.).

Eucoila (Psichacra) laticeps Kieffer, 1908. Soc. Sci. Bruxelles, Ann. 32: 57. ♀.

troglydites (Kieffer). Wis. (Polk Co.).

Eucoila (Psichacra) troglydites Kieffer, 1909. Soc. Hist. Nat. Metz, Bul. 26: 74. ♀.

Genus GANASPIS Foerster

Ganaspis Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 334, 355.

Type-species: *Ganaspis mundata* Foerster. Monotypic.

diastrophis Ashmead. Nebr.

Ganaspis diastrophis Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 184. ♂, ♀.

nigra (Kieffer). Pa. (Jeannette).

Miteucoila nigra Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 121. ♀.

reclusa Kieffer. Calif.

Ganaspis reclusa Kieffer, 1908. Soc. Sci. Bruxelles, Ann. 32: 51. ♀.

Genus GANASPIDIUM Weld

Ganaspidium Weld, 1955. Ent. Soc. Wash., Proc. 57: 274.

Type-species: *Ganaspidium pusillae* Weld. Monotypic.

pusillae Weld. Tex. Host: *Liriomyza* sp., a serpentine leaf miner on peas.

Ganaspidium pusillae Weld, 1955. Ent. Soc. Wash., Proc. 57: 274. ♀, ♂.

Genus HYPOLETHRIA Foerster

Hypoethria Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 343, 354.

Type-species: *Eucoela melanoptera* Hartig. Monotypic.

vitellinipes (Kieffer). Pa. (Jeannette).

Eucoela vitellinipes Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 138. ♂.

Genus RHOPTRONERIS Foerster

Rhoptroneris Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 344, 356.

Type-species: *Cothonaspis encera* Hartig. Orig. desig.

nigroclavata (Kieffer). Pa. (Jeannette).

Eucoela (Rhoptroneris) nigroclavata Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 138. ♂, ♀.

Genus AGLAOTOMA Foerster

Aglatoma Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 334, 354.

Type-species: *Cothonaspis codrina* Hartig. Monotypic.

Crypteucoela Kieffer, 1904. In Andre, Spec. Hym. Eur. Alg., v. 7 bis, p. 618.

Type-species: *Cothonaspis codrina* Hartig. Desig. by Rohwer and Fagan, 1917.

Aglatoomidea Rohwer and Fagan, 1917. U. S. Natl. Mus., Proc. 53: 360.

Type-species: *Aglatoma foersteri* Kieffer. Orig. desig.

texana Crawford. Tex. (Dallas).

Aglatoma texana Crawford, 1913. U. S. Natl. Mus., Proc. 45: 309. ♂, ♀.

Genus PSEUDEUCOILA Ashmead

Genus PSEUDEUCOILA Subgenus HEXAMEROCERA Kieffer

Hexamerocera Kieffer, 1901. Feuille Jeunes Nat. (4) 31: 174, 175, 176.

Type-species: *Eucoila rufiventris* Giraud. Desig. by Ashmead, 1903.

maculipes (Ashmead). Fla.

Hexaplasta maculipes Ashmead, 1887. Amer. Ent. Soc., Trans. 4: 152. ♀.

quadripunctata (Kieffer). Calif.

Eucoela mexicana Ashmead, 1895. Calif. Acad. Sci., Proc. (2)5: 541. ♀. Preocc. by Cameron, 1889.

Eucoela (Psichacra) quadripunctata Kieffer, 1901. Feuille Jeunes Nat. (4)31: 176. N. name.

zimmermanni (Kieffer). "Carolina."

Eucoela (Hexamerocera) zimmermanni Kieffer, 1910. Lab. Zool. Gen. e Agr. Portici, Bol. 4: 333. ♀.

Genus PSEUDEUCOILA Subgenus PSEUDEUCOILA Ashmead

Pseudeucoila Ashmead, 1903. Ent. Soc. Wash., Proc. 5: 222.

Type-species: *Eucoela (Cothonaspis) trichopsila* Hartig. Monotypic.

alaskensis (Ashmead). Alaska (Seldovia).

Eucoela alaskensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 142. ♀.

bochei Weld. Pa., Md., Va., Ohio. Host: *Drosophila* spp. in decayed fruit.

Pseudeucoila bochei Weld, 1944. Ent. Soc. Wash., Proc. 46: 65. ♀, ♂.

Biology: Weld, 1944. Ent. Soc. Wash., Proc. 46: 65-66. —Jenni, 1951. Acta Zool. 32: 177.

—Bakker *et al.*, 1967. Ent. Expt. et Appl. 10: 295. —Meyer-Grassmann, 1967. Rev. Suisse de Zool. 74: 411. —Streams, 1968. Ent. Soc. Amer., Ann. 61: 158-164.

hunteri (Crawford). Tex. (Dallas). Host: *Liriomyza* sp., a cotton leaf miner.

Encoila hunteri Crawford, 1913. U. S. Natl. Mus., Proc. 45: 310. ♀.

stigmata (Say). Mass., N. Y., N. J., D. C., Va., Ind., Ill., Canada.

Diplolepis stigmata Say, 1836. Boston Jour. Nat. Hist. 1: 268. ♀.

Kleidotoma maculipennis Provancher, 1881. Nat. Canad. 12: 237. ♀.

Genus PSEUDEUCOILA Subgenus MACROCEREUCOILA Ashmead

Macrocerucoila Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 153.

Type-species: *Macrocerucoila longicornis* Ashmead. Monotypic.

ashmeadiana (Dalla Torre and Kieffer). Fla.

Macrocerucoila longicornis Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 153. ♂. Preocc. by Hartig, 1840.

Eucoila (*Macrocerucoila*!) *Ashmeadiana* Dalla Torre and Kieffer, 1902. In Wytsman, Gen. Ins., fasc. 9, p. 26. N. name.

Encoila (*Macrocerucoila*) *ashmeadi* Dalla Torre and Kieffer, 1910. Das Tierreich, v. 24, p. 181.

Genus PSEUDEUCOILA Subgenus Undetermined

bruneocincta (Kieffer). Pa. (Jeannette).

Eucoila bruneocincta Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 138. ♂.

clavatipalpis (Kieffer). Ont. (Toronto).

Eucoila clavatipalpis Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 138. ♂.

mellipes (Say). Ont., Ind., Ill.

Figites mellipes Say, 1836. Boston Jour. Nat. Hist. 1: 269. ♀.

Kleidotoma minima Provancher, 1883. Nat. Canad. 14: 20. ♀.

nigrimanus (Kieffer). Calif. (Claremont).

Eucoila nigrimanus Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 138. ♂.

nudicollis (Kieffer). Wis. (Polk Co.).

Eucoila (*Eucoila*) *nudicollis* Kieffer, 1909. Soc. Hist. Nat. Metz, Bul. 26: 74. ♂.

pedata (Say). Ind.

Diplolepis pedata Say, 1836. Boston Jour. Nat. Hist. 1: 267. ♂.

rubripes (Ashmead). Fla. (Jacksonville).

Eucoila rubripes Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 153. ♂.

siphonophorae (Ashmead). Fla. (Jacksonville).

Eucoila siphonophorae Ashmead, 1887. U. S. Dept. Agr., Div. Ent., Bul. 14: 21. ♂.

xystiformis (Ashmead). Fla. (Jacksonville).

Dimicrostrophis xystiformis Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 153. ♂.

Genus COTHONASPIS Hartig

Cothonaspis Hartig, 1840 (1839). Ztschr. f. Ent. 2: 186.

Type-species: *Cothonaspis pentatomus* Hartig. Desig. by Foerster, 1869.

Psilosema Kieffer, 1901. Feuille Jeunes Nat. (4)31: 160.

Type-species: *Cothonaspis pentatoma* Giraud. Desig. by Rohwer and Fagan, 1917.

The type-species of this genus, *Cothonaspis pentatoma* Giraud, 1860, is a homonym of *Cothonaspis pentatoma* Hartig, 1840, and was renamed *giraudi* by Dalla Torre and Kieffer, 1910.

americana (Girault). Ill. (Urbana).

Microstilba americana Girault, 1920. U. S. Natl. Mus., Proc. 58: 182. ♀.

pratti (Crawford). Tex. (Dallas).

Psilosema pratti Crawford, 1913. U. S. Natl. Mus., Proc. 45: 310. ♀, ♂.

Genus EUCOILIDEA Ashmead

Eucoilidea Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 154.

Type-species: *Eucoilidea canadensis* Ashmead. Desig. by Ashmead, 1903.

- Eucoelidea* Dalla Torre, 1893. Cat. Hym., v. 2, p. 15. Emend.
arcuata Kieffer. Wis. (Polk Co.).
Eucoelidia(!) *arcuata* Kieffer, 1909. Soc. Hist. Nat. Metz., Bul. 26: 65. ♂, ♀.
canadensis Ashmead. Que. (Cap Rouge).
Eucoelidea canadensis Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 154. ♀.
crenulata Kieffer. Colo. (Gunnison).
Eucoelidea crenulata Kieffer, 1908. Soc. Sci. Bruxelles, Ann. 32: 47. ♀.
fuscipes Kieffer. Calif. (Claremont).
Eucoelidia(!) *fuscipes* Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 112. ♂.
longicornis Ashmead. Fla. (Jacksonville).
Eucoelidea longicornis Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 154. ♂.
rufipes Gillette. Ill. (Morris).
Eucoelidea rufipes Gillette, 1891. Ill. State Lab. Nat. Hist., Bul. 3: 205. ♀.

Family ALLOXYSTIDAE

Parasites of braconid or chalcidoid primary parasites of aphids or other Hemiptera-Homoptera.

Taxonomy: Fallen, 1963. Fauna Fenn. 15: 3-23.

Genus LYTOXYSTA Kieffer

- Lytoxysta* Kieffer, 1909. Naturw. Ztschr. f. Forst. u. Landw. 7: 479.
 Type-species: *Lytoxysta brevipalpis* Kieffer. Desig. by Rohwer and Fagan, 1917.
brevipalpis Kieffer. Mass., Ohio, Ark., Idaho, Utah.
Lytoxysta brevipalpis Kieffer, 1909. Naturw. Ztschr. f. Forst. u. Landw. 7: 480. ♀.
 Taxonomy: Weld, 1939. Ent. Soc. Wash., Proc. 41: 53 (male).
brevipalpis var. *nigra* Kieffer. Ark.
Lytoxysta brevipalpis var. *nigra* Kieffer, 1909. Naturw. Ztschr. f. Forst. u. Landw. 7: 480.
 ♀.

Genus ALLOXYSTA Foerster

- Allotria* Westwood, 1833. Mag. Nat. Hist. 6: 494. Preocc. by Huebner, 1823.
 Type-species: *Allotria victrix* Westwood. Monotypic.
Xystus Hartig, 1840 (1839). Ztschr. f. Ent. 2: 186. Preocc. by Schoenherr, 1826.
 Type-species: *Xystus erythrocephalus* Hartig. Desig. by Rohwer and Fagan, 1917.
Alloxysta Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 338, 340.
 Type-species: *Xystus macrophadnus* Hartig. Monotypic.
Pezophycta Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 338, 339.
 Type-species: *Xystus brachypterus* Hartig. Orig. desig.
Nephycta Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 338, 339.
 Type-species: *Nephycta discreta* Foerster. Orig. desig.
abdominalis Baker. Colo. (Ft. Collins).
Alloxysta abdominalis Baker, 1896. Canad. Ent. 28: 135. ♀.
affinis (Baker). Colo. (Ft. Collins).
Dylita(!) *affinis* Baker, 1896. Canad. Ent. 28: 132. ♀.
alaskensis Ashmead. Alaska (Muir Inlet, St. Paul Is.).
Alloxysta alaskensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 142. ♂, ♀.
ambrosiae (Ashmead). Mass. (Cambridge).
Allotria ambrosiae Ashmead, 1897. Ent. Soc. Wash., Proc. 4: 149, 156. ♀.
apicalis Baker. Colo. (Ft. Collins).
Alloxysta apicalis Baker, 1896. Canad. Ent. 28: 135. ♀.
areolata (Kieffer), n. comb. Mass. (Forest Hills).
Charips areolata Kieffer, 1909. Naturw. Ztschr. f. Forst. u. Landw. 7: 481. ♂, ♀.

bakeri (Kieffer), n. comb. Calif. (San Mateo).

Allotria bakeri Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 162. ♀.

bicolor (Baker). Colo. (Ft. Collins).

Dylita(!) *bicolor* Baker, 1896. Canad. Ent. 28: 132. ♀.

brassicæ (Ashmead), n. comb. N. Y., Fla., Mich., Mo., N. Dak., Ariz., Calif.

Allotria brassicæ Ashmead, 1887. U. S. Dept. Agr., Div. Ent., Bul. 14: 14. ♀, ♂.

coloradensis (Baker). Colo. (Ft. Collins).

Dylita(!) *coloradensis* Baker, 1896. Canad. Ent. 28: 133. ♂.

gracilis Baker. Colo. (Ft. Collins).

Alloxysta gracilis Baker, 1896. Canad. Ent. 28: 134. ♀.

hayhursti (Kieffer), n. comb. Mass. (Forest Hills).

Charips hayhursti Kieffer, 1909. Naturw. Ztschr. f. Forst. u. Landw. 7: 481. ♂, ♀.

lachni (Ashmead). Fla.

Allotria lachni Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 297, 302. ♂, ♀.

leguminosa (Weld), n. comb. Idaho, Utah, Oreg. Host: *Aphelinus lapisligni* How. in *Roepkea bakeri* (Cowen).

Charips (*Charips*) *leguminosa* Weld, 1920. Ent. News 31: 15. ♀, ♂.

longiventris Baker. Colo. (Ft. Collins).

Alloxysta longiventris Baker, 1896. Canad. Ent. 28: 134. ♀.

magna Baker. Colo. (Ft. Collins).

Alloxysta magna Baker, 1896. Canad. Ent. 28: 134. ♀.

megourae (Ashmead). Fla. (Jacksonville). Ecology: Reared from tomato aphid.

Allotria megourae Ashmead, 1887. U. S. Dept. Agr., Div. Ent., Bul. 14: 19. ♀.

robusta Baker. Colo. (Ft. Collins).

Alloxysta robusta Baker, 1896. Canad. Ent. 28: 133. ♀.

ruficeps (Baker). Colo. (Ft. Collins).

Dylita(!) *ruficeps* Baker, 1896. Canad. Ent. 28: 132. ♀.

rufipleura Baker. Colo. (Ft. Collins).

Alloxysta rufipleura Baker, 1896. Canad. Ent. 28: 135. ♂.

similis (Baker). Colo. (Ft. Collins).

Dylita(!) *similis* Baker, 1896. Canad. Ent. 28: 133. ♂.

tritici (Fitch). N. Y., N. J., D. C., Va., N. C., Ohio, Ind. Ecology: Reared from *Schizaphis graminum* (Rond.). Host: *Aphidius nigripes* (Ashmead).

Allotria tritici Fitch, 1861 (1860). N. Y. State Agr. Soc., Trans. 20: 841. ♀.

vagans Kieffer. Mass. (Forest Hills). Ecology: Reared from *Hyalopteroides humilis* (Walk.).

Alloxysta vagans Kieffer, 1909. Naturw. Ztschr. f. Forst. u. Landw. 7: 480. ♀.

victrix (Westwood). Greenland; Europe.

Allotria victrix Westwood, 1833. Mag. Nat. Hist. 6: 495. ♀.

xanthopsis (Ashmead). Fla., Calif.

Allotria xanthopsis Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 185. ♂.

Genus DILYTA Foerster

Dilyta Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 338, 340.

Type-species: *Dilyta subclavata* Foerster. Orig. desig.

Charips Marshall, 1870. Ent. Monthly Mag. 6: 181.

Type-species: *Charips microcera* Marshall. Monotypic.

Glyptoxysta Thomson, 1877. Opusc. Ent., v. 8, pp. 811, 814.

Type-species: *Glyptoxysta heterocera* Thomson. Desig. by Ashmead, 1903.

necans (Kieffer), n. comb. Mass. (Forest Hills).

Glyptoxysta necans Kieffer, 1909. Naturw. Ztschr. f. Forst. u. Landw. 7: 481. ♀.

Genus HEMICRISIS Foerster

Hemicrisis Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 338, 339.

Type-species: *Hemicrisis ruficornis* Kieffer. Monotypic.

brevicornis Kieffer. Nev. (Ormsby Co.).

Hemicrisis brevicornis Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 162. ♂.

nevadensis Kieffer. Nev. (Ormsby Co.).

Hemicrisis nevadensis Kieffer, 1907. Ent. Ztschr. Stuttgart 21: 162. ♀.

Genus PHAENOGLYPHIS Foerster

Phaenoglyphis Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 338.

Type-species: *Phaenoglyphis xanthochroa* Foerster. Monotypic.

Auloxysta Thomson, 1877. Opusc. Ent., v. 8, p. 811.

Type-species: *Auloxysta nigripes* Thomson. Desig. by Ashmead, 1903.

Bothrioxysta Kieffer, 1902. Soc. Hist. Nat. Metz, Bul. (2) 10: 11.

Type-species: *Auloxysta nigripes* Thomson. Desig. by Rohwer and Fagan, 1917.

americana Baker. Colo. (Ft. Collins).

Phaenoglyphis americana Baker, 1896. Canad. Ent. 28: 131. ♂.

Family CYNIPIDAE

All the species of this family inhabit plants, either as gall-makers or asinquilines. The latter develop in galls produced by other Cynipidae, by Chalcidoidea, or by Diptera. The first subfamily, Synerginae, contains only inquilines, or as often designated in cynipid literature, guests. The second subfamily, Cynipinae, is composed entirely of gall producing species.

The arrangement of genera and species used here is based on the published papers of the late L. H. Weld, his unpublished notes, and his arrangement of the U. S. N. M. collection. The nomenclature used here may or may not agree with that used by Felt in his 1940 publication, Plant Galls and Gall Makers, 364 pp. All evidence is that Mr. Weld thoroughly considered Felt's nomenclature before he prepared the Cynipidae section of the 1951 Hymenoptera Catalog.

As was done in the 1951 Hymenoptera Catalog, two large papers by A. C. Kinsey are cited as separate publications. This is done primarily because those works were widely distributed by Kinsey as separate volumes. The complete references for them are as follows: Kinsey, 1930. The Gall Wasp Genus Cynips, Ind. Univ. Studies 16 (84, 85, 86): 1-577, June, Sept., Dec. 1929, issued Feb. 1930. (Waterman Inst. Sci. Res. Pub. 42; Contrib. Dept. Zool., Ind. Univ. No. 220, Ent. Ser. No. 7). Kinsey, 1936. The Origin of Higher Categories in Cynips, Ind. Univ. Pubs., Sci. Ser. No. 4: 1-334, issued Nov. 1936. (Contrib. Dept. Zool., Ind. Univ. No. 242, Ent. Ser. No. 10).

SUBFAMILY SYNERGINAE

All members of this subfamily develop as inquilines, or guests, in galls on various plants. Although all the species of this subfamily emerge from galls, in no instance do they induce the formation of the galls. There is, however, evidence that some inquilines cause slight changes in the structure of the galls they inhabit. Their entire development occurs in galls induced by members of the subfamily Cynipinae, some chalcidoids, or the dipterous gall makers in the family Cecidomyiidae. It often occurs, however, that so many inquilines emerge from the galls, and so few of the gall-makers emerge (in some instances no gall-makers emerge), that it is easy to misjudge the habits of the inquilines. As a matter of fact, some of the inquilines have been described as gall-makers, but in no instance is that true. Mani, 1964, (Ecology of Plant Galls, pp. 236-238), gives a summary of the existing literature on cynipid inquilines.

The subfamily name Synerginae was first proposed by Ashmead, 1896, (Amer. Ent. Soc., Trans. 23: 186). This group somewhat corresponds to the "Group Inquilinae" proposed by Hartig, 1840, (Ztschr. f. Ent. 2: 197). Hartig's name Inquilinae is not available for use because it is not based on a generic name in the Cynipidae. Actually, Hartig's name Inquilinae was a descriptive term that meant "Einmieter" or lodger.

Genus SAPHONECRUS Dalla Torre and Kieffer

Saphonecrus Dalla Torre and Kieffer, 1910. Das Tierreich, Lief. 24, p. 605.

Type-species: *Synergus connatus* Hartig. Orig. desig.

Guests in galls on oak.

brevicornis (Ashmead). Calif.

Synergus brevicornis Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 189. ♀, ♂.

Taxonomy: Weld, 1952. U. S. Natl. Mus., Proc. 102: 315.

brevis Weld, N. Mex., Ariz. Host: *Andricus ruginosus* Bassett gall.

Saphonecrus brevis Weld, 1926. U. S. Natl. Mus., Proc. 68(10): 109. ♀, ♂.

favanus Weld, D. C., Mo. Host: *Dryocosmus fавus* Beutenmueller gall.

Saphonecrus favanus Weld, 1944. U. S. Natl. Mus., Proc. 95: 1. ♀, ♂.

gemmariae (Ashmead). Fla. Host: *Callirhytis quercusgemmaria* (Ashmead) gall.

Sapholytus gemmariae Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 297, 302. ♂.

Genus SYNERGUS Hartig

Synergus Hartig, 1840 (1839). Ztschr. f. Ent. 2: 186.

Type-species: *Synergus vulgaris* Hartig. Desig. by Foerster, 1869.

Sapholytus Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 332, 337.

Type-species: *Synergus apicalis* Hartig. Monotypic.

Guests in galls on oak.

agrifoliae Ashmead. Calif. Host: *Neuroterus saltatorius* (Edwards) gall.

Synergus agrifoliae Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 189. ♀, ♂.

Synergus maculatus Fullaway, 1911. Ent. Soc. Amer., Ann. 4: 371. ♀, ♂.

Synergus obscurus McCracken and Egbert, 1922. Stanford Univ., Pubs., Univ. Ser. Biol.

Sci. 3(1): 57. ♀.

Taxonomy: Weld, 1952. U. S. Natl. Mus., Proc. 102: 337.

atra Gillette. Colo. Host: *Disholcaspis rubens* (Gillette) gall.

Synergus atra Gillette, 1896. Amer. Ent. Soc., Trans. 23: 86. ♀, ♂.

atripennis Ashmead. Fla. Host: *Disholcaspis spongiosa* (Karsch) gall.

Synergus atripennis Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 189. ♀.

atripes Gillette. Colo. Host: *Atrusca brevipennata* (Gillette) gall.

Synergus atripes Gillette, 1896. Amer. Ent. Soc., Trans. 23: 90, 96. ♀, ♂.

batatoides Ashmead. Fla. Host: *Callirhytis quercusbatatoides* (Ashmead) gall.

Synergus batatoides Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 297, 301. ♀, ♂.

bellus McCracken and Egbert. Calif.

Synergus bellus McCracken and Egbert, 1922. Stanford Univ., Pubs., Univ. Ser. Biol. Sci.

3(1): 54. ♀, ♂.

bicolor Ashmead. Fla. Host: *Andricus quercusfoliatus* (Ashmead) gall.

Synergus bicolor Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 297, 302. ♀, ♂.

campanula Osten Sacken. N. Y., N. J., D. C., Ill., Wis. Host: *Disholcaspis quercusglobulus* (Fitch) gall.

Synergus campanula Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 376. ♀.

castanopsidis (Beutenmueller). Calif. Host: *Dryocosmus castanopsidis* (Beutenmueller) gall.

Periclistus castanopsidis Beutenmueller, 1918. Ent. News 29: 251. ♀.

citriformis (Ashmead). Fla. Host: *Amphibolips quercuscitriformis* (Ashmead) gall.

Ceroptres citriformis Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 300. ♀, ♂.

confertus McCracken and Egbert. Calif. Host: *Andricus confertus* McCracken and Egbert gall.

Synergus confertus McCracken and Egbert, 1922. Stanford Univ., Pubs., Univ. Ser. Biol.

Sci. 3(1): 55. ♀, ♂.

coniferae Ashmead. Fla. Host: *Callirhytis quercusventricosa* (Bassett) gall.

Synergus coniferae Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 297, 301. ♀, ♂.

davisi (Beutenmueller). N. J. Host: *Callirhytis quercusgemmaria* (Ashmead) gall.

Andricus davisi Beutenmueller, 1907. Amer. Mus. Nat. Hist., Bul. 23: 463. ♀, ♂.

digressus McCracken and Egbert. Calif.

Synergus digressus McCracken and Egbert, 1922. Stanford Univ., Pubs., Univ. Ser. Biol.

Sci. 3(1): 52. ♀, ♂.

dimorphus Osten Sacken. D. C.

Synergus dimorphus Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 376. ♀, ♂.

distinctus McCracken and Egbert. Calif. Host: *Disholcaspis canescens* (Bassett) gall.

Synergus distinctus McCracken and Egbert, 1922. Stanford Univ., Pubs., Univ. Ser. Biol. Sci. 3(1): 58. ♀, ♂.

dorsalis (Provancher). Calif.

Ceroptres dorsalis Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 298. ♀, ♂.

duricoria Gillette. Del. Host: *Disholcaspis quercusmamma* (Walsh) gall.

Synergus duricoria Gillette, 1896. Amer. Ent. Soc., Trans. 23: 90, 93. ♀.

erinacei Gillette. N. Y., Iowa.

Synergus erinacei Gillette, 1896. Amer. Ent. Soc., Trans. 23: 90, 94. ♀, ♂.

ficigeræ Ashmead. Fla. Host: *Disholcaspis quercuseirens* (Ashmead) gall.

Synergus ficigeræ Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 297, 301. ♀, ♂.

flavens McCracken and Egbert. Calif. Host: *Heteroecus flavens* (McCracken and Egbert) gall.

Synergus flavens McCracken and Egbert, 1922. Stanford Univ., Pubs., Univ. Ser. Biol. Sci. 3(1): 55. ♀.

flavus Kieffer. Calif. Host: *Callirhytis quercuspomiformis* (Bassett) gall.

Synergus flavus Kieffer, 1904. Soc. Hist. Nat. Metz, Bul. (2) 11: 133. ♀, ♂.

garryana Gillette. Wash., Oreg. Host: *Disholcaspis eldoradensis* (Beutenmueller) gall.

Synergus garryana Gillette, 1893. Canad. Ent. 25: 110. ♀, ♂.

incisus Gillette. Colo. Host: *Callirhytis frequens* (Gillette) gall.

Synergus incisus Gillette, 1896. Amer. Ent. Soc., Trans. 23: 90, 92. ♀, ♂.

laeviventris (Osten Sacken). D. C. Host: *Amphibolips quercuspongifica* (Osten Sacken) gall.

Synophrus laeviventris Osten Sacken, 1861. Ent. Soc. Phila., Proc. 1: 57. ♀.

lignicola (Osten Sacken). D. C., N. Y., Mich., Ind. Host: *Callirhytis cornigera* (Osten Sacken),

Callirhytis quercuspunctata (Bassett) galls.

Cynips (*Synergus*?) *lignicola* Osten Sacken, 1862. Ent. Soc. Phila., Proc. 1: 252. ♀, ♂.

Synergus (?) *rhoditiformis* Walsh, 1864. Ent. Soc. Phila., Proc. 2: 499. ♀, ♂.

magnificus Weld. Calif. Host: *Disholcaspis truckeeensis* (Ashmead) gall.

Synergus magnificus Weld, 1957. U. S. Natl. Mus., Proc. 107: 107. ♀, ♂.

magnus Gillette. Mich. Host: *Amphibolips cookii* Gillette gall.

Synergus magnus Gillette, 1891. Ill. State Lab. Nat. Hist., Bul. 3: 202. ♀.

medullæ Ashmead. Fla. Host: *Callirhytis quercusmedullæ* (Ashmead) gall.

Synergus medullæ Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 297, 302. ♀, ♂.

mendax Walsh. Ill. Host: *Callirhytis quercuspunctata* (Bassett) gall.

Synergus (?) *mendax* Walsh, 1864. Ent. Soc. Phila., Proc. 2: 498. ♀.

multiplicatus Fullaway. Calif. Host: *Andricus chrysolepidicola* (Ashmead) gall.

Synergus multiplicatus Fullaway, 1911. Ent. Soc. Amer., Ann. 4: 370. ♀, ♂.

niger Fullaway. Calif.

Synergus niger Fullaway, 1911. Ent. Soc. Amer., Ann. 4: 369. ♀, ♂.

nigroornatus McCracken and Egbert. Calif. Host: *Heteroecus pacificus* (Ashmead) gall.

Synergus nigro-ornatus McCracken and Egbert, 1922. Stanford Univ., Pubs., Univ. Ser. Biol. Sci. 3(1): 57. ♀, ♂.

obtusilobæ (Ashmead). Fla.

Ceroptres obtusilobæ Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 300. ♀.

ochreus Fullaway. Calif. Host: *Callirhytis quercuspomiformis* (Bassett) gall.

Synergus ochreus Fullaway, 1911. Ent. Soc. Amer., Ann. 4: 368. ♀.

oneratus **oneratus** (Harris). Mass., N. Y., N. J., D. C., Mich., Ill., Iowa. Host: *Disholcaspis quercusglobulus* (Fitch), *Adleria quercusstrobilana* (Osten Sacken) galls.

Cynips oneratus Harris, 1841. Rpt. Ins. Mass. Injurious to Veg., p. 398.

oneratus **coloradensis** Gillette. Colo. Host: *Disholcaspis rubens* (Gillette), *Atrusca brevipennata* (Gillette) galls.

Synergus oneratus var. *coloradensis* Gillette, 1896. Amer. Ent. Soc., Trans. 23: 90. ♀, ♂.

- pacificus** McCracken and Egbert. Calif. Host: *Heteroecus pacificus* (Ashmead) gall.
Synergus pacificus McCracken and Egbert, 1922. Stanford Univ., Pubs., Univ. Ser. Biol. Sci. 3(1): 56. ♂, ♀.
- pomiformis** (Ashmead). Calif. Host: *Callirhytis quercuspomiformis* (Bassett) gall.
Ceroptres pomiformis Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 300. ♂.
- profusus** McCracken and Egbert. Calif. Host: *Disholcaspis canescens* (Bassett) gall.
Synergus profusus McCracken and Egbert, 1922. Stanford Univ., Pubs., Univ. Ser. Biol. Sci. 3(1): 59. ♀, ♂.
- punctatus** Gillette. Colo. Host: *Disholcaspis rubens* (Gillette), *Xanthoterus eburneum* (Bassett) galls.
Synergus punctata Gillette, 1896. Amer. Ent. Soc., Trans. 23: 90, 94. ♀, ♂.
- quercuslana** (Fitch). N. Y., Iowa. Host: *Audricus quercusflocci* (Walsh) gall.
Cynips Quercus-lana Fitch, 1859 (1858). N. Y. State Agr. Soc., Trans. 18: 814. ♀.
- reniformis** McCracken and Egbert. Host: *Audricus reniformis* McCracken and Egbert gall.
Synergus reniformis McCracken and Egbert, 1922. Stanford Univ., Pubs., Univ. Ser. Biol. Sci. 3(1): 53. ♀, ♂.
- rutulus** McCracken and Egbert. Calif. Host: *Disholcaspis plumbella* Kinsey gall.
Synergus rutulus McCracken and Egbert, 1922. Stanford Univ., Pubs., Univ. Ser. Biol. Sci. 3(1): 60. ♀.
- similis** Gillette. Colo. Host: *Atrusca brevipennata* (Gillette) gall.
Synergus similis Gillette, 1896. Amer. Ent. Soc., Trans. 23: 90, 92. ♀.
- splendidus** Fullaway. Calif. Host: *Callirhytis quercuspomiformis* (Bassett) gall.
Synergus splendidus Fullaway, 1911. Ent. Soc. Amer., Ann. 4: 369. ♀.
Synergus dubiosus Fullaway, 1911. Ent. Soc. Amer., Ann. 4: 372. ♀, ♂.
- succinipedis** (Ashmead). Fla. Host: *Disholcaspis quercussuccinipes* (Ashmead) gall.
Ceroptres succinipedis Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 300. ♀.
- varicolor** Fullaway. Calif. Host: *Callirhytis quercuspomiformis* (Bassett) gall.
Synergus varicolor Fullaway, 1911. Ent. Soc. Amer., Ann. 4: 371. ♀, ♂.
- variegatus** McCracken and Egbert. Calif. Host: *Heteroecus pacificus* (Ashmead) gall.
Synergus variegatus McCracken and Egbert, 1922. Stanford Univ., Pubs., Univ. Ser. Biol. Sci. 3(1): 51. ♀, ♂.
- villosus** Gillette. Mich. Host: *Acraspis villosa* (Gillette) gall.
Synergus villosus Gillette, 1891. Ill. State Lab. Nat. Hist., Bul. 3: 202. ♀.
- virentis** (Ashmead). Fla. Host: *Belonocnema quercusvirens* (Osten Sacken) gall.
Ceroptres virentis Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 300. ♀.
- walshii** Gillette. Ill.
Synergus albipes Walsh, 1864. Ent. Soc. Phila., Proc. 2: 479, 496. ♀, ♂. Preocc. by Hartig, 1841.
Synergus walshii Gillette, 1896. Amer. Ent. Soc., Trans. 23: 97. N. name.

Genus SYNOPHRUS Hartig

- Synophrus* Hartig, 1843. Ztschr. f. Ent. 4: 411.
 Type-species: *Synophrus politus* Hartig. Monotypic.
- mexicanus** (Gillette). N. Mex.
Synergus mexicana Gillette, 1896. Amer. Ent. Soc., Trans. 23: 90, 96. ♀.

Genus SYNOPHROMORPHA Ashmead

- Synophromorpha* Ashmead, 1903. Psyche 10: 145.
 Type-species: *Synophromorpha salicis* Ashmead. Orig. desig.
- Guests in galls on *Rubus* and *Rosa*. Unfortunately the type-species of this genus, *S. salicis* Ashmead, is from an unknown locality and its host was supposed to be a dipterous gall-maker on *Salix*. The type of *salicis* has not been located and probably does not exist.
- Taxonomy: Weld, 1952. Cynipoidea 1905-1950, p. 266.

- rubi** Weld. Ill. Host: *Diastrophus cuscuteaeformis* (Osten Sacken) gall.
Synophronomorpha rubi Weld, 1952. U. S. Natl. Mus., Proc. 102: 317. ♀, ♂.
- sylvestris** (Osten Sacken). Conn., Ont., N. Y., D. C., Mich. Host: *Diptolepis ignota* (Osten Sacken) gall.
Synophrus sylvestris Osten Sacken, 1861. Stettin Ent. Ztg. 22: 415. ♀.
- Taxonomy: Weld, 1952. U. S. Natl. Mus., Proc. 102: 316.
- terricola** Weld. D. C., Va. Host: *Diastrophus bassetti* Beutenmueller, *D. radicum* Bassett galls.
Synophronomorpha terricola Weld, 1952. U. S. Natl. Mus., Proc. 102: 316. ♀, ♂.

Genus PERICLISTUS Foerster

- Periclistus* Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 332, 337.
 Type-species: *Aylax caninae* Hartig. Monotypic.
- Guests in galls on roses.
- arefactus** McCracken and Egbert. Calif. Host: *Diptolepis arefacta* (Gillette) gall.
Periclistus arefactus McCracken and Egbert, 1922. Stanford Univ., Pubs., Univ. Ser. Biol. Sci. 3(1): 62. ♀, ♂.
- californicus** Ashmead. Calif. Host: *Diptolepis polita* (Ashmead) gall.
Periclistus californicus Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 188. ♀, ♂.
- obliquus** Provancher. Calif.
Periclistus obliquus Provancher, 1888. Addit. Corr. Faune Ent. Canada, Hym. p. 397. ♀.
- piceus** Fullaway. Calif. Host: *Diptolepis polita* (Ashmead) gall.
Periclistus piceus Fullaway, 1911. Ent. Soc. Amer., Ann. 4: 374. ♀, ♂.
- pirata** (Osten Sacken). D. C. Host: *Diptolepis ignota* (Osten Sacken) gall.
Aulax pirata Osten Sacken, 1863. Ent. Soc. Phila., Proc. 2: 42. ♀, ♂.
Rhodites globulus Beutenmueller, 1892. Amer. Mus. Nat. Hist., Bul. 4: 247. ♀, ♂.
- semipiceus** (Harris). Mass. Host: *Diptolepis* sp., galls on rose roots.
Cynips semipiceus Harris, 1841. Rpt. Ins. Mass. Injurious to Veg., p. 400. ♀, ♂.
- smilacis** Ashmead. Fla. Host: *Diastrophus smilacis* Ashmead gall. Host may be incorrect.
Periclistus smilacis Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 188. ♀, ♂.

Genus MYRTOPSEN Rubsaamen

- Myrtopsen* Rubsaamen, 1908. Marcellia 6: 136.
 Type-species: *Myrtopsen mayri* Rubsaamen. Monotypic.
- Reared from woody galls on leguminous trees and shrubs.
- mosae** Weld. Ariz. Host: *Tanaostigmodes* sp. galls on *Mimosa biuncifera*.
Myrtopsen mosae Weld, 1926. U. S. Natl. Mus., Proc. 68(10): 116. ♀, ♂.

Genus CEROPTRES Hartig

- Ceroptres* Hartig, 1840 (1839). Ztschr. f. Ent. 2: 186, 197.
 Type-species: *Ceroptres clavicornis* Hartig. Desig. by Foerster, 1869.
- Guests in galls on oak.
- catesbaei** Ashmead. Fla. Host: *Bassetia quercusatesbaei* (Ashmead) gall.
Ceroptres catesbaei Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 301. ♀, ♂.
- confertus** (McCracken and Egbert). Calif. Host: *Andricus confertus* McCracken and Egbert gall.
Periclistus confertus McCracken and Egbert, 1922. Stanford Univ., Pubs., Univ. Ser. Biol. Sci. 3(1): 62. ♀.
- frondosae** Ashmead. Mo.
Ceroptres frondosae Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 186. ♀.
- inermis** (Walsh). Ill. Host: *Cincticornia pilulae* (Osten Sacken) gall.
Amblynotus inermis Walsh, 1864. Ent. Soc. Phila., Proc. 2: 498. ♀, ♂.

- lanigeræ** Ashmead. Fla. Host: *Andricus quercustaniger* (Ashmead) gall.
Ceroptres lanigeræ Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 301. ♀.
- minutissimi** Ashmead. Fla. Host: *Neuroterus quercusminutissimus* (Ashmead) gall.
Ceroptres minutissimi Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 301. ♀, ♂.
- montensis** Weld. Calif. Host: *Andricus reniformis* McCracken and Egbert gall.
Ceroptres montensis Weld, 1957. U. S. Natl. Mus., Proc. 107: 108. ♀, ♂.
- niger** Fullaway. Calif. Specimen now labeled as Type in California Academy of Science is not a *Ceroptres*, but an undetermined gall-maker; original description of *niger* is clearly that of a true *Ceroptres*.
Ceroptres niger Fullaway, 1911. Ent. Soc. Amer., Ann. 4: 373. ♀.
- Taxonomy: Weld, 1952. Cynipoidea 1905-1950, p. 268.
- petiolicola** (Osten Sacken). D. C., Ill. Host: *Andricus quercuspetiolicola* (Bassett) gall.
Amblynotus petiolicola Osten Sacken, 1861. Ent. Soc. Phila., Proc. 1: 67. ♀.
Amblynotus ensiger Walsh, 1864. Ent. Soc. Phila., Proc. 2: 487, 496. ♀.
- politus** Ashmead. Va. Ecology: Ovipositing in leaf of red oak.
Ceroptres politus Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 187. ♀, ♂.
- quercusarbores** (Fitch). N. Y. Host: *Callirhytis clacula* (Osten Sacken) gall.
Cynips Quercus-arbores Fitch, 1859 (1858). N. Y. State Agr. Soc., Trans. 18: 809. ♂.
- quercusficus** (Fitch). N. Y. Host: *Xanthoteras quercusforticorne* (Walsh) gall.
Cynips Quercus-ficus Fitch, 1859 (1858). N. Y. State Agr. Soc., Trans. 18: 812. ♀, ♂.
- quercusobtusilobæ** Karsch. Tex. Host: Galls on *Quercus stellata*.
Diplolepis q. obtusilobæ Karsch, 1880. Ztschr. f. Gesam. Naturw. 53: 292. ♀.
Cynips obtusilobæ Dalla Torre, 1893. Cat. Hym., v. 2, p. 74.
Ceroptres obtusilobensis Weld, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 614.
- quercuspisum** (Fitch). N. Y. Host: *Acraspis pezomachoides* (Osten Sacken) gall.
Cynips Quercus-pisum Fitch, 1859 (1858). N. Y. State Agr. Soc., Trans. 18: 818. ♀, ♂.
- quercustuber** (Fitch). N. Y. Host: *Callirhytis clarula* (Osten Sacken) gall.
Cynips Quercus-tuber Fitch, 1859 (1858). N. Y. State Agr. Soc., Trans. 18: 806. ♀, ♂.
- rufiventris** Ashmead. Mo. Host: *Andricus quercusostensackenii* (Bassett) gall.
Ceroptres rufiventris Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 186. ♀.

Genus EUCEROPTRES Ashmead

Euceroptres Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 187.

Type-species: *Euceroptres primus* Ashmead. Monotypic.

Guests in galls on oak.

- maritimus** Weld. Calif. Host: *Callirhytis quercusuttoni* (Bassett) gall.
Euceroptres maritimus Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 113, 116. ♀, ♂.
- montanus** Weld. Calif. Host: *Disholcaspis truckeensis* (Ashmead) gall.
Euceroptres montanus Weld, 1926. U. S. Natl. Mus., Proc. 68(10): 113, 116. ♀, ♂.
- primus** Ashmead. Fla. Host: *Andricus quercuspetiolicola* (Bassett) gall and other oak galls.
Euceroptres primus Ashmead, 1896. Amer. Ent. Soc., Trans. 23: 187. ♀, ♂.
Aglaz(?) futilis Osten Sacken, 1861. Ent. Soc. Phila., Proc. 1: 51, 64. ♂.

SUBFAMILY CYNIPINAE

In this subfamily all species are gall-makers. The species of the first few genera, *Gonaspis* through *Diplolepis*, produce galls on plants other than *Quercus*. From the genus *Neuroterus* to the end of the subfamily all but two of the species produce galls only on *Quercus*. The two exceptions are *Andricus mendocinensis* Weld, which is a gall-maker on the tanbark oak, *Lithocarpus densiflorus*, and *Dryocosmus castanopsidis* (Beutenmueller), which produces galls on *Castanopsis chrysophylla* and *C. sempervirens*. *Lithocarpus* and *Castanopsis* have by some Botanists been considered to be synonyms of *Quercus*. The prevalent current opinion is that those two genera are very closely related to *Quercus*, but are distinct.

The subfamily Cynipinae is limited here as it was by Ashmead, 1903. (Psyche 10: 145). This

corresponds somewhat with the old term *Psenides* Hartig, 1840. (Ztschr. f. Ent. 2: 187). The name *Psenides* Hartig is not based on any generic name in the Cynipoidea, but is a descriptive term meaning "Gallenerzeuger" or gall producer.

There are European species of gall-makers that are commonly intercepted at our ports of entry, but they are not known to have been established in North America. The best known of these is *Andricus kollari* (Hartig). This produces bud galls on *Quercus rober* and other European oaks. The galls produced by this species are imported for the production of permanent inks that are required by law in some states for signatures to certain documents. The cynipid gall-makers occasionally have been known to emerge in factories where these inks are produced, and some factory workers have complained that they were stung by the cynipids. Many of the species of oaks on which this cynipid produces galls in Europe are grown in North America as rare ornamentals. This cynipid has not yet been found developing here. "Nut galls" or "Aleppo galls," produced by *Adleria gallaetinctoriae* (Olivier), are also commonly imported, as are the acorn galls of *Andricus glandium* (Giraud). The cynipids producing these galls are not known to be established in North America.

Taxonomy: Eady and Quinlan, 1963. Handb. Ident. Brit. Ins. 8(1a): 1-81.

Genus GONASPIS Ashmead

Gonaspis Ashmead, 1897. Psyche 8: 68.

Type-species: *Diastrophus scutellaris* Gillette. Orig. design.

Produce galls on *Potentilla*.

potentillae (Bassett). N. B. s. to Va., w. to Ill., Mo. Ecology: Produces globular galls in leaf axils of *Potentilla* spp.

Diastrophus potentillae Bassett, 1864. Ent. Soc. Phila., Proc. 3: 689. ♀, ♂, gall.

Diastrophus scutellaris Gillette, 1891. Ill. State Lab. Nat. Hist., Bul. 3: 191.

Taxonomy: Weld, 1959. Cynipid Galls Eastern U. S., p. 84.

Genus ANTISTROPHUS Walsh

Antistrophus Walsh, 1869. Amer. Ent. 2: 74.

Type-species: *Antistrophus lygodesmiaepisum* Walsh. Monotypic.

Asclepiadiphila Ashmead, 1897. Canad. Ent. 29: 263.

Type-species: *Asclepiadiphila stephanotidis* Ashmead. Monotypic.

Produce galls on various composites.

bicolor Gillette. Ill. Ecology: Said to produce galls on *Silphium integrifolium*.

Antistrophus bicolor Gillette, 1891. Ill. State Lab. Nat. Hist., Bul. 3: 197.

chrysothamni (Beutenmueller). Ariz. Ecology: Produce galls on *Chrysothamnus* sp. that are stem swellings covered with feltlike pubescence.

Aulax chrysothamni Beutenmueller, 1908. N. Y. Ent. Soc., Jour. 16: 45. ♀, ♂, gall.

laciniatus Gillette. Ill. Ecology: Produces minute galls among disk florets in flower heads of *Silphium laciniatum*.

Antistrophus laciniatus Gillette, 1891. Ill. State Lab. Nat. Hist., Bul. 3: 194. ♀, ♂, gall.

lygodesmiaepisum Walsh. Ill., N. Dak., S. Dak., Kans., Wyo., Colo., N. Mex. Ecology: Produces pea-shaped galls along stem of *Lygodesmia juncea*.

Antistrophus lygodesmiaepisum Walsh, 1869. Amer. Ent. 2: 73. ♀, ♂, gall.

Antistrophus pisum Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 294.

Asclepiadiphila stephanotidis Ashmead, 1897. Canad. Ent. 29: 263. ♀, ♂, gall.

microseris (McCracken and Egbert). Calif. Ecology: Produces gall on stem of *Microseris* sp.

Aylax microseris McCracken and Egbert, 1922. Stanford Univ., Pubs., Univ. Ser. Biol. Sci. 3(1): 45. ♀, gall.

minor Gillette. Ill. Ecology: Bred from galls hidden in stems of *Silphium laciniatum*.

Antistrophus minor Gillette, 1891. Ill. State Lab. Nat. Hist., Bul. 3: 196. ♀, ♂, gall.

Aulax Gillettei Kieffer, 1902. Soc. Hist. Nat. Metz., Bul. (2) 10: 95. N. name unnecessarily proposed.

- rufus** Gillette. Ill., Kans. Ecology: Bred from galls hidden in stem of *Silphium laciniatum*.
Antistrophus rufus Gillette, 1891. Ill. State Nat. Hist., Bul. 3: 195. ♀, ♂, gall.
silphii Gillette. Va., Ill., Nebr. Ecology: Produces club-shaped subterminal stem galls on
Silphium perfoliatum.
Antistrophus silphii Gillette, 1891. Ill. State Nat. Hist., Bul. 3: 192. ♀, ♂, gall.
Antistrophus leavenworthi Bassett, 1900. Amer. Ent. Soc., Trans. 26: 310. ♀, ♂, gall.

Genus DIASTROPHUS Hartig

Diastrophus Hartig, 1840 (1839). Ztschr. f. Ent. 2: 186.

Type-species: *Diastrophus rubi* Hartig. Monotypic.

Produce galls on *Rubus*, *Fragaria*, *Potentilla*.

bassettii Beutenmueller. N. Y., N. J., Pa. Ecology: Produce irregularly globose galls half buried in ground at tips of running *Rubus* stems.

Diastrophus bassettii Beutenmueller, 1892. Amer. Mus. Nat. Hist., Bul. 4: 248. ♂, gall.

cuscutaeformis Osten Sacken. Conn. to S. C., w. to Ont., Ill., Iowa. Ecology: Produce seedlike galls on *Rubus* stems near ground level.

Diastrophus cuscutaeformis Osten Sacken, 1863. Ent. Soc. Phila., Proc. 2: 39. ♀, ♂, gall.

fragariae Beutenmueller. R. I., N. Y., s. to Va., w. to Ont., Ill. Ecology: Produce galls on petiole of strawberry, *Fragaria virginiana*.

Diastrophus fragariae Beutenmueller, 1915. Canad. Ent. 47: 353. ♂, gall.

Taxonomy: Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 118 (description of female).

fusiformans Ashmead. Ont., Colo. Ecology: Produce galls on *Potentilla* sp. that are slight swellings, often curved, in stems.

Diastrophus fusiformans Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 13, 38. ♀, gall.

kincaidii Gillette. Colo., Idaho, B. C., Wash., Oreg., Calif. Ecology: Produce lumpy and pithy stem galls on *Rubus parviflorus*.

Diastrophus kincaidii Gillette, 1893. Canad. Ent. 25: 110. ♀, ♂, gall.

Diastrophus kincaidii var. *austrior* Kinsey, 1922. Ind. Univ. Studies 53: 54. ♀, ♂, gall.

minimus Bassett. Mass., Conn., N. J. Ecology: Produce small, oval galls on internodes of *Potentilla canadensis*.

Diastrophus minimus Bassett, 1900. Amer. Ent. Soc., Trans. 26: 325. ♀, ♂, gall.

nebulosus (Osten Sacken). Conn. to Fla., w. to Ont., Kans., Okla. Ecology: Produce stem galls on *Rubus* sp., blackberries, that are large, abrupt, pithy, subterminal swellings with longitudinal grooves.

Cynips (*Diastrophus*?) *nebulosus* Osten Sacken, 1861. Stettin. Ent. Ztg. 22: 415. ♀, gall.

niger Bassett. Mass., N. Y., D. C., Mich., Ill., Mo., Ark. Ecology: Produce spindle-shaped stem galls on *Potentilla canadensis*.

Diastrophus niger Bassett, 1900. Amer. Ent. Soc., Trans. 26: 324. ♀, gall.

piceus Provancher. Ont. (Ottawa).

Diastrophus piceus Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 161. ♀, ♂.

radicum Bassett. Conn. s. to N. C., w. to Ont., Mich., Colo. Ecology: Produce irregular, globose root galls on black raspberry, *Rubus occidentalis*.

Diastrophus radicum Bassett, 1870. Canad. Ent. 2: 98. ♀, ♂, gall.

smilacis Ashmead. Ill. Originally described from specimens said to be from gall on *Smilax*; this species has not been reared again since. The plant record may be incorrect.

Diastrophus smilacis Ashmead, 1896. Amer. Ent. Soc., Trans. 19: 135. ♀, gall.

tumefactus Kinsey. Que., Ont. Ecology: Produce enlarged stem galls on *Potentilla*.

Diastrophus tumefactus Kinsey, 1920. Amer. Mus. Nat. Hist., Bul. 42: 299. ♀, gall.

turgidus Bassett. Que., Maine, Ont., Conn., D. C., N. Y., Ind., Ill., Mo. Ecology: Produce abrupt stem swelling galls on red raspberries, *Rubus strigosus*.

Diastrophus turgidus(!) Bassett, 1870. Canad. Ent. 2: 99. ♀, gall.

Diastrophus turgidus Bassett, 1870. Canad. Ent. 2: 100.

Genus LIPOSTHENES Foerster

Liposthenus (!) Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 332.

Liposthenes Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 336.

Type-species: *Aulax glechomae* Hartig. Orig. desig.

Produce galls on *Nepeta hederacea*, in Europe and North America.

glechomae (Linnaeus). Maine s. to Va., w. to Ont., W. Va., Ill. Europe. Ecology: Produce globular, green, fleshy galls on *Nepeta hederacea*. Introduced from Europe with its host plant and established in the Eastern U. S. and Ontario.

Cynips Glechomae Linnaeus, 1758. Syst. Nat., Ed. 10, p. 553. ♀, gall.

Diastrophus similis Bassett, 1881. Canad. Ent. 13: 95. ♀, gall.

Aulax Latreillei Kieffer, 1898. Wien. Ent. Ztg. 17: 257. ♀, ♂, gall.

Taxonomy: Weld, 1952. Cynipoidea 1905-1950, p. 273.

Genus AYLAX Hartig

Aylax Hartig, 1840 (1839). Ztschr. f. Ent. 2: 186, 195.

Type-species: *Cynips rhoeadis* Bouche. Desig. by Ashmead, 1903.

Aulax Hartig, 1843. Ztschr. f. Ent. 4: 412. Emend.

Pseudaulax Ashmead, 1903. Psyche 10: 213.

Type-species: *Cynips hieracii* Linnaeus. Orig. desig.

papaveris (Perris). North America ?; Europe. Ecology: Produce galls in seed-heads of *Papaver*. Introduced from Europe into North America many times but not certainly known to be established here.

Diptolepis papaveris Perris, 1840. Soc. Ent. France, Ann. 9: 95. ♀, ♂, gall.

quinquecostatus (Provancher). Ont. (Toronto).

Diastrophus 5-costatus Provancher, 1883. Nat. Canad. 14: 19. ♀, ♂.

Genus PHANACIS Foerster

Phanacis Foerster, 1860. Naturh. Ver. Rheinlande, Verh. 17: 145.

Type-species: *Phanacis centaureae* Foerster. Monotypic.

Timaspis Mayr, 1881. Zwanzig. Jahresber. Comm.-Oberrealsch. I. Bez. Wien., p. 18.

Type-species: *Diastrophus lampsanae* Karsch. Monotypic.

Gillettea Ashmead, 1897. Psyche 8: 69.

Type-species: *Gillettea taraxaci* Ashmead. Orig. desig.

Taxonomy: Eady and Quinlan, 1963. Handb. Ident. Brit. Ins. 8 (1a): 17-18.

hypochaeridis (Kieffer). Wash., Oreg., Calif.; Europe. Ecology: Produce stem swelling galls on *Hypochaeris radicata*. Introduced from Europe into Pacific Coast states.

Aulax hypochaeridis Kieffer, 1887. Zool.-Bot. Gesell. Wien, Verh. 37: 205. ♀, gall.

taraxaci (Ashmead). Ont., N. Y., Ill., Minn., Iowa; Hawaii, Europe. Ecology: Produce fusiform galls on petiole, leaf midrib, or base of peduncle. Introduced from Europe along with its host plant, *Taraxacum officinale*.

Gillettea taraxaci Ashmead, 1897. Psyche 8: 69. ♀, ♂, gall.

Genus AULACIDEA Ashmead

Aulacidea Ashmead, 1897. Psyche 8: 68.

Type-species: *Aulax mulgediicola* Ashmead. Orig. desig.

Produce galls on various composites.

abdita Kinsey. Que. Ecology: Produce cell-like galls in pith of *Lactuca*. This is doubtfully distinct from *harringtoni* (Ashmead).

Aulacidea abdita Kinsey, 1920. Amer. Mus. Nat. Hist., Bul. 42: 296. ♀, ♂, gall.

ambrosiicola (Ashmead). Mo. (Kirkwood). Ecology: Supposed to produce galls on *Ambrosia*, but has not been found again since it was described.

Aulax ambrosiicola Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 134. ♀, ♂, gall.

annulata Kinsey. Mass. (Sharon). Ecology: Produce galls on *Lactuca*. This may be a synonym of *tumida* (Bassett).

Aulacidea annulata Kinsey, 1920. Amer. Mus. Nat. Hist., Bull. 42: 298. ♀, ♂, gall.

harringtoni (Ashmead). Ont. to D. C., w. to Mo. Ecology: Produce cell-like galls in pith of stems of *Lactuca villosa*, probably other species of *Lactuca* also.

Aular harringtoni Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 146. ♀.

Aular bicolor Gillette, 1891. Ill. State Lab. Nat. Hist., Bul. 3(1): 201. ♀.

Aular mulgedicola Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 133. ♀, ♂, gall.

Aular caricola Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 134. ♀.

nabali (Brodie). Que. to N. C., w. to Ill. Ecology: Produce stem galls on *Prenanthes*, these hemispherical swellings on the stem just below surface of ground.

Aular nabali Brodie, 1892. Canad. Ent. 24: 12. ♀, ♂, gall.

podagrae (Bassett). N. Y., Pa., Va., Ill., Mo. Ecology: Produce knotty stem galls on *Lactuca canadensis*, these scattered along stem at leaf bases.

Aular podagrae Bassett, 1890. Amer. Ent. Soc., Trans. 17: 91. ♀, ♂, gall.

tumida (Bassett). Ont. to Va., w. to Ill. Ecology: Produce galls that are swellings near apex of stem of *Lactuca canadensis* and *Sonchus*.

Aular tumidus Bassett, 1890. Amer. Ent. Soc., Trans. 17: 92. ♀, ♂, gall.

Aular sonchicola Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 134. ♀, ♂, gall.

Aulacidea solidaginis Girault, 1903. Ent. News 14: 323. ♀, ♂, gall.

Genus DIPLOLEPIS Fourcroy

Diplolepis Geoffroy, 1762. Hist. Abreege des Ins., v. 2, p. 308. Not available for

nomenclatorial purposes, Internatl. Comm. Zool. Nomencl., Opinion 228, 1954.

Diplolepis Fourcroy, 1785. Ent. Parisiensis, pt. 2, p. 391.

Type-species: *Cynips rosae* Linnaeus. Desig. by Karsch, 1880.

Rhodites Hartig, 1840 (1839). Ztschr. f. Ent. 2: 186.

Type-species: *Cynips rosae* Linnaeus. Desig. by Foerster, 1869.

Hololexis Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 330, 333.

Type-species: *Hololexis rufipes* Foerster. Monotypic.

Tribalia Walsh, 1864. Ent. Soc. Phila., Proc. 2: 470.

Type-species: *Tribalia batatorum* Walsh. Monotypic.

Lytorhodites Kieffer, 1902. Soc. Hist. Nat. Metz., Bul. (2) 10: 96.

Type-species: *Rhodites arefactus* Gillette. Desig. by Rohwer and Fagan, 1917.

Produce galls on *Rosa*. It is unfortunately true that the bulk of the literature about this genus used the generic name *Rhodites*. There is some sentiment for asking the Commission to place *Rhodites* on the list of conserved names, but no such proposal has been presented. As the years pass and literature accumulates using the name *Diplolepis*, the likelihood of such a proposal being made to the Commission becomes increasingly less likely.

arefacta (Gillette). Colo., Ariz., Utah, Nev., Wash. Ecology: Produce galls on small shoots of *Rosa*.

Rhodites arefactus Gillette, 1894. Canad. Ent. 26: 157. ♀, ♂, gall.

ashmeadi (Beutenmueller). Oreg. Ecology: Produce globose galls on *Rosa nutkana* stems.

Rhodites ashmeadi Beutenmueller, 1918. Canad. Ent. 50: 306. ♀, gall.

bassetti bassetti (Beutenmueller). Wash., Oreg. Ecology: Produce clusters of small, woody galls with fine, curled filaments on twigs of *Rosa nutkana*.

Rhodites bassetti Beutenmueller, 1918. Canad. Ent. 50: 307. ♀, ♂, gall.

bassetti lucida Kinsey. Idaho, Oreg. Ecology: Produce clusters of small woody galls with stout, straight filaments on twigs of *Rosa nutkana*.

Diplolepis bassetti var. *lucida* Kinsey, 1922. Ind. Univ. Studies 53: 57. ♀, ♂, gall.

bicolor (Harris). Maine to Va., w. to Ill. Ecology: Produce spherical, spiny leaf galls on *Rosa*; galls may completely conceal leaves.

Cynips bicolor Harris, 1841. Rpt. Ins. Mass. Injurious to Veg., p. 399. ♀, ♂, gall.

- californica** (Beutenmueller). Wash., Oreg., Calif. Ecology: Produce fairly large, spherical galls on terminals of *Rosa* twigs; gall covered with dense, irregular filaments and semi-aborted leaves.
Rhodites californicus Beutenmueller, 1914. Brooklyn Ent. Soc., Bul. 9: 88. ♀, ♂, gall.
- dichlocera** (Harris). Ont. to Va. w. to Ill. Ecology: Produce fusiform stem galls on *Rosa*; galls usually with prickly surface.
Cynips dichlocerus Harris, 1841. Rpt. Ins. Mass. Injurious to Veg., p. 399. ♀, ♂, gall.
- fulgens** (Gillette). Conn., Ont., N. Y., N. J., W. Va., Ill., Minn., S. Dak., Colo. Ecology: Produce potato-like root galls on *Rosa blanda*.
Rhodites fulgens Gillette, 1894. Canad. Ent. 26: 159. ♀.
- fusiformans fusiformans** (Ashmead). Ont., Ill., Nebr., Colo., Ariz. Ecology: Produce fusiform or abrupt, one-sided enlargements of stems of *Rosa*.
Rhodites fusiformans Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 14. ♀, ♂, gall.
- fusiformans mendocinensis** Kinsey. Calif. Ecology: Produce polythalamous stem galls on *Rosa*.
Diptolepis fusiformans var. *mendocinensis* Kinsey, 1922. Ind. Univ. Studies 53: 62. ♀, ♂, gall.
- fusiformans minuta** Kinsey. Calif. Ecology: Produce small stem galls on *Rosa*, each gall containing 4 or less cells.
Diptolepis fusiformans var. *minuta* Kinsey, 1922. Ind. Univ. Studies 53: 61. ♀, ♂, gall.
- gracilis** (Ashmead). Mass., Conn., Ont., N. Y., Ill., Wis., Utah. Ecology: Produce galls on under side of *Rosa* leaves; galls single or in clusters, each one globular with flattened top.
Rhodites gracilis Ashmead, 1897. U. S. Natl. Mus., Proc. 19: 135. ♀, ♂, gall.
- ignota** (Osten Sacken). Ont. to Va., w. to Ill. Ecology: Produce globular, hard, many-celled galls on under side of leaves of *Rosa*; several galls may coalesce into an irregular mass; surface of gall covered with mealy, white bloom. Mealy rose gall.
Rhodites ignota Osten Sacken, 1863. Ent. Soc. Phila., Proc. 2: 45, 49, 63. ♀, ♂, gall.
Rhodites carolina Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 133, 148. ♀, gall.
- lens** Weld. Wash., Oreg., Calif. Ecology: Produce small lens-shaped leaf galls on *Rosa nutkana*.
Diptolepis lens Weld, 1952. U. S. Natl. Mus., Proc. 102: 320. ♀, ♂.
- mayri** (Schlechtendal). N. J., Ohio; Europe. Ecology: Produce lobed, terminal stem galls on *Rosa rubiginosa*. Introduced from Europe; first identified from New Jersey specimens in 1914.
Rhodites mayri Schlechtendal, 1877 (1876). Jabresber. Ver. Zwickau, p. 59. ♀, gall.
- nebulosa** (Bassett). Conn., Ont., N. Y., N. J., Ill. Ecology: Produce small, globular galls on under side of leaves of *Rosa*; galls with a few, weak spines.
Rhodites nebulosus Bassett, 1890. Amer. Ent. Soc., Trans. 17: 63. ♀, gall.
- neglecta** (Gillette). Colo. Ecology: Produce abrupt, corky enlargements of small stems of *Rosa*; surface of galls smooth.
Rhodites neglectus Gillette, 1894. Canad. Ent. 26: 158. ♀, ♂, gall.
- nodulosa** (Beutenmueller). Mass., Md., Mich., Ill. Ecology: Produce hardly perceptible enlargements of base of lateral branches of *Rosa*, branches dying beyond galled area.
Rhodites nodulosus Beutenmueller, 1909. Ent. News 20: 247. ♀, gall.
- oregonensis** (Beutenmueller). Oreg. Ecology: Produce galls in buds of *Rosa* in spring, these galls greatly distorting the buds.
Rhodites oregonensis Beutenmueller, 1918. Canad. Ent. 50: 305. ♀, gall.
- ostensackeni** (Beutenmueller). Oreg. Ecology: Produce root galls on *Rosa nutkana*.
Rhodites ostensackeni Beutenmueller, 1918. Canad. Ent. 50: 307. ♀, gall.
- polita** (Ashmead). Ariz., Oreg., Calif. Ecology: Produce spherical, spiny leaf galls on *Rosa californica*.
Rhodites polita Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 14. ♀, ♂, gall.
Rhodites occidentalis Beutenmueller, 1922. Brooklyn Ent. Soc., Bul. 17: 45. ♀, ♂, gall.
- pustulatoides** (Beutenmueller). Va., Ind., Tenn., Colo., Utah, Oreg. Ecology: Produce small, round or ovate galls on upper surface of *Rosa* leaves.
Rhodites pustulatoides Beutenmueller, 1914. Brooklyn Ent. Soc., Bul. 9: 89. ♀, ♂.

- radicum** (Osten Sacken). Ont. and Mass. to Va., w. to Sask., Wash., Oreg. Ecology: Produce large, potatolike galls on roots or stems of *Rosa* at ground level; galls usually hidden by soil surface litter.
Rhodites radicum Osten Sacken, 1863. Ent. Soc. Phila., Proc. 2: 42, 45, 46. ♀, ♂, gall.
Tribalia batatorum Walsh, 1864. Ent. Soc. Phila., Proc. 2: 470. ♀.
Rhodites utahensis Bassett, 1890. Amer. Ent. Soc., Trans. 17: 62. ♀, ♂, gall.
Diptolepis radicum var. *johnsoni* Kinsey, 1922. Ind. Univ. Studies 53: 67. ♀, ♂, gall.
Diptolepis radicum var. *plana* Kinsey, 1922. Ind. Univ. Studies 53: 70. ♀, gall.
Diptolepis radicum var. *divergens* Kinsey, 1922. Ind. Univ. Studies 53: 70. ♀, ♂, gall.
Diptolepis radicum var. *angustior* Hunter, 1923. Psyche 30: 173. ♀, ♂, gall.
- rosae** (Linnaeus). Que. to Va., w. to Kans.; Europe. Ecology: Produce large, 2-to 4-inch diameter, spherical stem galls on *Rosa eglanteria* and *R. rugosa*; surface of gall densely filamentous. Introduced from Europe, first found in Toronto, Ont. in 1868. Mossy rose gall.
Cynips rosae Linnaeus, 1758. Syst. Nat., Ed. 10, p. 553. ♀, gall.
- rosae-folii** (Cockerell). Ont., N. Y., Ohio, Mich., Ill. Ecology: Produce lentil-shaped leaf galls on *Rosa*.
Rhodites rosae-folii Cockerell, 1889. Ent. Monthly Mag. 25: 324, 363. ♀, gall.
Rhodites lenticularis Bassett, 1890. Amer. Ent. Soc., Trans. 17: 59. ♀, ♂, gall.
- similis** (Ashmead). Wyo., Colo., N. Mex. Ecology: Produce semi-spherical twig galls on *Rosa*; surface of galls smooth.
Rhodites similis Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 136. ♀, ♂, gall.
- spinosa** (Ashmead). Ohio, Wis., Ill., Man., Minn., Sask., Alta. Ecology: Produce irregularly lobed, subterminal stem galls on *Rosa*; surface of galls densely spinose.
Rhodites spinosa Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 134. gall.
Rhodites spinosissima Gillette, 1889. Iowa Agr. Expt. Sta., Bul. 7: 284. Preocc. by Giraud, 1859.
Rhodites multispinosa Gillette, 1890. Ent. Amer. 6: 25. ♀, ♂, gall.
- terrigena** Weld. Calif. Ecology: Produce subterranean galls at crown of *Rosa* plants; gall rather shaped like a bunch of grapes.
Diptolepis terrigena Weld, 1952. U. S. Natl. Mus., Proc. 102: 320. ♀, ♂, gall.
- tuberculatrix** (Cockerell). N. Dak., Colo., N. Mex., Utah, Wash., Oreg., Calif. Ecology: Produce abrupt, semi-spherical stem galls on *Rosa*; galls with numerous cells and outer surface bears scattered spines.
Rhodites tuberculatrix Cockerell, 1888. West. Amer. Sci. 4: 60. ♀, gall.
Diptolepis tuberculatrix var. *coloradensis* form *coloradensis* Kinsey and Ayres, 1922. Ind. Univ. Studies 53: 149. ♀, ♂, gall.
Diptolepis tuberculatrix var. *coloradensis* form *subcoloradensis* Kinsey and Ayres, 1922. Ind. Univ. Studies 53: 150. ♀, gall.
Diptolepis tuberculatrix var. *wasatchensis* Kinsey and Ayres, 1922. Ind. Univ. Studies 53: 153. ♀, ♂, gall.
Diptolepis tuberculatrix var. *versicolor* Kinsey and Ayres, 1922. Ind. Univ. Studies 53: 156. ♀, gall.
Diptolepis tuberculatrix var. *melanderi* Kinsey and Ayres, 1922. Ind. Univ. Studies 53: 156. ♀, ♂, gall.
Diptolepis tuberculatrix var. *rubriderma* Kinsey and Ayres, 1922. Ind. Univ. Studies 53: 157. ♀, ♂, gall.
Diptolepis tuberculatrix var. *sierranensis* Kinsey and Ayres, 1922. Ind. Univ. Studies 53: 158. ♀, ♂, gall.
Diptolepis tuberculatrix var. *descansonis* Kinsey and Ayres, 1922. Ind. Univ. Studies 53: 159. ♀, ♂, gall.
- tumida** (Bassett). Utah. Ecology: Produce terminal stem swellings on *Rosa*.
Rhodites tumidas Bassett, 1890. Amer. Ent. Soc., Trans. 17: 60. ♀, ♂, gall.
Diptolepis tuberculatrix var. *tumida* form *xerophila* Kinsey and Ayres, 1922. Ind. Univ. Studies 53: 151. ♀, ♂, gall.

- variabilis** (Bassett). N. Dak., N. Mex., Utah, Ariz., Wash., Oreg. Ecology: Produce irregularly round, smooth, russet colored leaf galls on *Rosa*.
Rhodites variabilis Bassett, 1890. Amer. Ent. Soc., Trans. 17: 61. ♀, ♂, gall.
Rhodites globuloides Beutenmueller, 1907. Amer. Mus. Nat. Hist., Bul. 23: 638. ♀.
- variabilis** var. *lutescens* Kinsey. Colo.
Diplolepis variabilis var. *lutescens* Kinsey, 1922. Ind. Univ. Studies 53: 77. ♀, ♂.
- variabilis** var. *rufopicea* Kinsey. Colo.
Diplolepis variabilis var. *rufopicea* Kinsey, 1922. Ind. Univ. Studies 53: 76. ♀, ♂.
- variabilis** var. *sculpta* Kinsey. Utah.
Diplolepis variabilis var. *sculpta* Kinsey, 1922. Ind. Univ. Studies 53: 75. ♀, ♂.
- verna** (Osten Sacken). P. E. I., Ont., s. to D. C. Ecology: Produce rounded enlargements of small *Rosa* stems.
Rhodites verna Osten Sacken, 1863. Ent. Soc. Phila., Proc. 2: 41, 45, 47. ♀, ♂, gall.
- weldi** (Beutenmueller). Calif. Ecology: Produce clusters of leaf galls on *Rosa*.
Rhodites weldi Beutenmueller, 1913. Insecutor Inscitiae Menstruus 1: 93. ♂, gall.

Genus NEUROTERUS Hartig

- Neuroterus* Hartig, 1840 (1839). Ztschr. f. Ent. 2: 185, 192.
 Type-species: *Neuroterus politus* Hartig. Desig. by Ashmead, 1903.
- Spathegaster* Hartig, 1840 (1839). Ztschr. f. Ent. 2: 186.
 Type-species: *Spathegaster petioliventris* Hartig. Monotypic.
- Ameristus* Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 330, 333.
 Type-species: *Neuroterus politus* Hartig. Desig. by Rohwer and Fagan, 1917.
- Dolichostrophus* Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 129 (footnote).
 Type-species: *Cynips irregularis* Osten Sacken. Monotypic.
- Neuroterus* subg. *Neospathegaster* Kinsey, 1923. Ind. Univ. Studies 58: 28, 35, 121.
 Type-species: *Cynips vesicula* Bassett. Orig. desig.
- Neuroterus* subg. *Diplobius* Kinsey, 1923. Ind. Univ. Studies 58: 27, 28-31, 35.
 Type-species: *Cynips floccosa* Bassett. Orig. desig.
- Neuroterus* subg. *Pseudoneuroterus* Kinsey, 1923. Ind. Univ. Studies 58: 28, 130.
 Type-species: *Cynips macropterus* Hartig. Orig. desig.
- Produce galls on white oaks only.
- affinis** (Bassett). Conn. Ecology: Produce bud galls on *Quercus prinoides*.
Cynips affinis Bassett, 1881. Canad. Ent. 13: 103. ♀, ♂, gall.
- argentatus** Weld. Ariz. Ecology: Produce leaf galls on *Quercus gambelii*, *Q. oblongifolia*.
Neuroterus argentatus Weld, 1944. U. S. Natl. Mus., Proc. 95: 2. ♀, gall.
- bassettii** Dalla Torre. Conn. Ecology: Produce leaf galls on *Quercus alba*.
Neuroterus pallipes Bassett, 1890. Amer. Ent. Soc., Trans. 17: 89. ♀, ♂, gall. Preocc. by Schenck, 1863.
- Neuroterus bassettii* Dalla Torre, 1892. Wien. Ent. Ztg. 11: 131. N. name.
- clarkeae** Beutenmueller. Mass. Ecology: Produce stem galls on *Quercus alba*.
Neuroterus clarkeae Beutenmueller, 1910. Amer. Mus. Nat. Hist., Bul. 28: 132. ♀, ♂, gall.
- clavensis** Weld. Colo., N. Mex., Ariz. Ecology: Produce stem galls on *Quercus gambelii*, *Q. subterminalis*.
Neuroterus clavensis Weld, 1944. U. S. Natl. Mus., Proc. 95: 3, ♀, gall.
- cockerelli** Beutenmueller. Colo. Ecology: Produce leaf galls on *Quercus* sp.
Neuroterus cockerelli Beutenmueller, 1910. Amer. Mus. Nat. Hist., Bul. 28: 125. ♀, gall.
- congregatus** Gillette. Colo. Ecology: Produce bud galls on *Quercus* sp.
Neuroterus congregatus Gillette, 1893. Ent. News 4: 166. ♂, gall.
- consimilis** Bassett. Conn. Ecology: Produce stem galls on *Quercus alba*.
Neuroterus consimilis Bassett, 1900. Amer. Ent. Soc., Trans. 26: 335. ♀, gall.
- contortus** (Weld). Tex. Ecology: Produce galls at bases of sprouts of *Quercus breviloba*.
Xystoteras contorta Weld, 1921. U. S. Natl. Mus., Proc. 59: 191, 209. ♀, gall. Agamic gen.
Xystoteras contortus, bisexual form *principalis* Kinsey, 1923. Ind. Univ. Studies 58: 92. ♀, ♂, gall. Sexual gen.

- cupulae** Kinsey. Calif. Ecology: Produce galls in cup at base of acorn on *Quercus lobata*.
Neuroterus cupulae Kinsey, 1922. Ind. Univ. Studies 53: 99. ♀, gall.
- distortus** Bassett. Conn., N. Y., N. J., Ill. Ecology: Produce stem galls on *Quercus bicolor*.
Neuroterus distortus Bassett, 1900. Amer. Ent. Soc., Trans. 26: 336. ♀, ♂, gall.
- dubius** Bassett. Conn. Call unknown.
Neuroterus dubia Bassett, 1900. Amer. Ent. Soc., Trans. 26: 335. ♀, ♂.
- dubius var. digressus** Kinsey. Calif.
Neuroterus dubius var. *digressus* Kinsey, 1923. Ind. Univ. Studies 58: 32, 96. ♀.
- engelmanni** Kinsey. Calif. Ecology: Produce leaf galls on *Quercus engelmannii*.
Neuroterus engelmanni Kinsey, 1922. Amer. Mus. Nat. Hist., Bul. 46: 293. ♀, gall.
- escharensis** Weld. Ill. Ecology: Produce stem galls on *Quercus bicolor*.
Neuroterus escharensis Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 5. ♀, gall.
- evanescens** Kinsey. Tex. Ecology: Produce galls on aments of *Quercus brevifolia*.
Neuroterus evanescens Kinsey, 1922. Ind. Univ. Studies 53: 100. ♀, ♂, gall.
- evolutus** Weld. Calif. Ecology: Produce stem galls on *Quercus douglasii*, *Q. lobata*.
Neuroterus evolutus Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 6. ♀, gall.
- exiguissimus** Bassett. Mass., Conn., N. Y., N. J., Va. Ecology: Produce leaf galls on *Quercus alba*.
Neuroterus exiguissimus Bassett, 1900. Amer. Ent. Soc., Trans. 26: 332. ♀, gall.
- exiguus** Bassett. Conn., N. Y., N. J., Va. Ecology: Produce galls on aments of *Quercus stellata*.
Neuroterus exiguus Bassett, 1900. Amer. Ent. Soc., Trans. 26: 333. ♀, ♂, gall.
- floccosus** (Bassett). Ont. to Va., w. to Ill. Ecology: Produce leaf galls on *Quercus bicolor*.
Cynips floccosa Bassett, 1881. Canad. Ent. 13: 111. ♀, gall.
Neuroterus verrucarum var. *pernotus* Kinsey, 1923. Ind. Univ. Studies 58: 30, 74. ♀, gall.
- floricola** Kinsey. Calif. Ecology: Produce ament galls on *Quercus douglasii*.
Neuroterus floricola Kinsey, 1922. Ind. Univ. Studies 53: 101. ♀, ♂, gall.
- floricomus** Weld. Ariz. Ecology: Produce galls on aments of *Quercus arizonica*, *Q. oblongifolia*, *Q. reticulata*, *Q. toumeyi*.
Neuroterus floricomus Weld, 1957. U. S. Natl. Mus., Proc. 107: 109. ♀, ♂, gall.
- florulentus** Weld. Calif. Ecology: Produce galls on aments of *Quercus dumosa*, *Q. lobata*.
Neuroterus florulentus Weld, 1957. U. S. Natl. Mus., Proc. 107: 110. ♀, ♂, gall.
- fragilis** Bassett. Calif. Ecology: Produce leaf galls on *Quercus douglasii*, *Q. dumosa*.
Neuroterus fragilis Bassett, 1900. Amer. Ent. Soc., Trans. 26: 335. ♀, ♂, gall.
Neuroterus pacificus Beutenmueller, 1918. Brooklyn Ent. Soc., Bul. 13: 119. ♀, ♂, gall.
- fugiens** Weld. Ill. Ecology: Produces leaf galls on *Quercus macrocarpa*.
Neuroterus fugiens Weld, 1926. U. S. Natl. Mus., Proc. 68: (10): 12. ♀, ♂, gall.
- gillettei** Bassett. Conn., Va. Ecology: Produces leaf galls on *Quercus stellata*.
Neuroterus Gillettei Bassett, 1900. Amer. Ent. Soc., Trans. 26: 334. ♀, ♂, gall.
- howertoni** Bassett. N. Mex., Ariz. Ecology: Produce leaf galls on *Quercus arizonica*, *Q. oblongifolia*.
Neuroterus howertoni Bassett, 1890. Amer. Ent. Soc., Trans. 17: 90. ♀, gall.
- lamellae** Weld. Ariz. Ecology: Produce leaf galls on *Quercus subturbinella*.
Neuroterus lamellae Weld, 1957. U. S. Natl. Mus., Proc. 107: 109-110. ♀, gall.
- minutus** (Bassett). Mass., Conn., Ont., Pa., Va. Ecology: Produce bud galls on *Quercus alba*.
Cynips minuta Bassett, 1881. Canad. Ent. 13: 96. ♀, ♂, gall.
- niger** Gillette. Mass., Mich., Wis., Iowa. Ecology: Produce leaf galls on *Quercus macrocarpa*.
Neuroterus nigrum Gillette, 1888. Mich. State Bd. Agr., Rpt. 27: 475. ♀, gall.
- niger var. alimas** Kinsey. Tex. Ecology: Produce leaf galls on *Quercus virginiana*.
Neuroterus niger var. *alimas* Kinsey, 1923. Ind. Univ. Studies 58: 30, 42. ♀, ♂, gall.
- niger var. arizonicae** Kinsey. Ariz. Ecology: Produce leaf galls on *Quercus arizonica*.
Neuroterus niger var. *arizonicae* Kinsey, 1923. Ind. Univ. Studies 58: 30, 43. ♀, gall.
- niger var. griseae** Kinsey. Tex. Ecology: Produce leaf galls on *Quercus grisea*.
Neuroterus niger var. *griseae* Kinsey, 1923. Ind. Univ. Studies 58: 31, 44. ♀, gall.

- niger** var. **nigripes** Kinsey. Tex. Ecology: Produce leaf galls on *Quercus breviloba*, *Q. stellata*.
Neuroterus niger var. **nigripes** Kinsey, 1923. Ind. Univ. Studies 58: 14, 31, 45. ♀, gall.
- niger** var. **pattersoni** Kinsey. Tex. Ecology: Produce leaf galls on *Quercus breviloba*, *Q. stellata*.
Neuroterus niger var. **pattersoni** Kinsey, 1923. Ind. Univ. Studies 58: 14, 31, 47. ♀, ♂, gall. Sexual gen.
Neuroterus niger var. **pattersoni**, agamic form *hiemalis* Kinsey, 1923. Ind. Univ. Studies 58: 47. ♀. Agamic gen.
- noxiosus** (Bassett). Mass., Conn., s. to W. Va., w. to Ill. Ecology: Produce galls on *Quercus bicolor*, sexual generation on leaves, agamic generation on stems.
Cynips noxiosus Bassett, 1881. Canad. Ent. 13: 108. ♀, ♂, gall. Sexual and agamic gen.
Neuroterus noxiosus form *vernalis* Kinsey, 1920. Amer. Mus. Nat. Hist., Bul. 42: 337. ♀, ♂, gall. Sexual gen.
- pallidus** Bassett. Conn., N. Y., N. J. Ecology: Produce galls on aments on *Quercus bicolor*.
Neuroterus pallidus Bassett, 1890. Amer. Ent. Soc., Trans. 17: 88. ♀, ♂, gall.
- papillosus** Beutenmueller. N. Y., N. J., Ind., Ill. Ecology: Produce leaf galls on *Quercus bicolor*.
Neuroterus papillosus Beutenmueller, 1910. Amer. Mus. Nat. Hist., Bul. 28: 121. ♀, ♂, gall.
- perminimus** Bassett. Ont., N. Y., Md., Va., Ohio, Ill. Ecology: Produce leaf galls on *Quercus alba*.
Neuroterus perminimus Bassett, 1900. Amer. Ent. Soc., Trans. 26: 332. ♀, ♂, gall.
- quercicola** Dalla Torre. Utah. Ecology: Produce leaf galls on *Quercus* sp.
Neuroterus politus Bassett, 1890. Amer. Ent. Soc., Trans. 17: 89. ♂, gall. Preocc. by Hartig, 1840.
Neuroterus quercicola Dalla Torre, 1892. Wien. Ent. Ztg. 11: 131. N. name.
- quercicola** var. **pubescens** Kinsey. Ariz.
Neuroterus quercicola var. **pubescens** Kinsey, 1923. Ind. Univ. Studies 58: 114. ♀, gall.
- quercusbatatus** (Fitch). Conn., Ont., s. to Fla., w. to Ill. Ecology: Produce stem galls on *Quercus alba*, in both sexual and agamic generations.
Cynips Quercus-batatus Fitch, 1859 (1858). N. Y. State Agr. Soc., Trans. 18: 810. ♀, ♂. Sexual gen.
Cynips q. batatus Fitch, 1864. In Bassett, Ent. Soc. Phila., Proc. 3: 684. ♀, ♂, gall.
Neuroterus batatus var. **bisexualis** Kinsey, 1920. Amer. Mus. Nat. Hist., Bul. 42: 334. ♀, ♂, gall.
- quercusbatatus** var. **prini** Kinsey. R. I. Ecology: Produce stem galls on *Quercus prinus*.
Neuroterus batatus var. **prini**, bisexual form **prini** Kinsey, 1923. Ind. Univ. Studies 58: 33, 88. ♀, gall. Sexual gen.
Neuroterus batatus var. **prini**, agamic form **deprini** Kinsey, 1923. Ind. Univ. Studies 58: 89. ♀, gall. Agamic gen.
- quercusirregularis** (Osten Sacken). N. Y., w. to Mo., Okla., Tex. Ecology: Produce leaf galls on *Quercus breviloba*, *Q. stellata*.
Cynips quercusirregularis Osten Sacken, 1861. Ent. Soc. Phila., Proc. 1: 65. ♂, gall.
Cynips irregularis Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 340, 344, 349, 353, 379.
- quercusirregularis** var. **albipleuræ** Kinsey. Tex.
Neuroterus irregularis var. **albipleuræ** Kinsey, 1923. Ind. Univ. Studies 58: 14, 34, 99. ♀, gall.
- quercusirregularis** var. **variegatus** Kinsey. Okla.
Neuroterus irregularis var. **variegatus** Kinsey, 1923. Ind. Univ. Studies 58: 14, 35, 102. ♀, ♂.
- quercusmajalis** (Bassett). Ont. to Fla., w. to Ill., Mo. Ecology: Produce leaf galls on *Quercus alba*.
Cynips q. majalis Bassett, 1864. Ent. Soc. Phila., Proc. 3: 682. ♀, ♂, gall.
Cynips majalis Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 353.
- quercusminutissimus** (Ashmead). Fla. Ecology: Produce leaf galls on *Quercus virginiana*.
Cynips q. minutissima Ashmead, 1885. Amer. Ent. Soc., Trans. 12: Proc. p. vii. ♀, gall.
Neuroterus minutissimus Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 296.

- quercusrileyi** (Bassett). Mass. to Va., w. to Ind., Mo., Okla., Tex. Ecology: Produce stem galls on *Quercus muehlenbergii*, *Q. prinoides*, *Q. prinus*.
Cynips. q. rileyi Bassett, 1881. Amer. Nat. 15: 149. ♀, gall.
Neuroterus Rileyi Ashmead, 1885. Amer. Ent. Soc. Trans. 12: 296.
- quercusrileyi** var. **atripleurae** Kinsey. Okla.
Neuroterus rileyi var. *atripleurae* Kinsey, 1923. Ind. Univ. Studies 58: 32, 118. ♀, gall.
- quercusrileyi** var. **mutatus** Kinsey. Tex.
Neuroterus rileyi var. *mutatus* Kinsey, 1923. Ind. Univ. Studies 58: 20, 32, 118. ♀, gall.
- quercusrileyi** var. **thompsoni** Kinsey. Mass.
Neuroterus thompsoni Kinsey, 1920. Amer. Mus. Nat. Hist., Bul. 42: 301. ♀, ♂, gall.
Neuroterus rileyi var. *thompsoni* Kinsey, 1923. Ind. Univ. Studies 58: 32, 120.
- quercusverrucarum** (Osten Sacken). N. Y. to Fla., w. to Okla., Tex. Ecology: Produce leaf galls on *Quercus brevifolia*, *Q. chapmani*, *Q. macrocarpa*, *Q. stellata*.
Cynips quercus verrucarum Osten Sacken, 1861. Ent. Soc. Phila., Proc. 1: 62. ♀, gall.
Cynips verrucarum Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 354.
- quercusverrucarum** var. **inficiens** Kinsey. Tex.
Neuroterus verrucarum var. *inficiens* Kinsey, 1923. Ind. Univ. Studies 58: 14, 30, 71. ♀, gall.
- quercusverrucarum** var. **macrocarpae** Kinsey. Tex.
Neuroterus verrucarum var. *macrocarpae* Kinsey, 1923. Ind. Univ. Studies 58: 30, 72. ♀, gall.
- quercusverrucarum** var. **opacus** Kinsey. Tex.
Neuroterus verrucarum var. *opacus* Kinsey, 1923. Ind. Univ. Studies 58: 14, 15, 30, 73. ♀, gall.
- quercusverrucarum** var. **pulvinus** Kinsey. Tex.
Neuroterus verrucarum var. *pulvinus* Kinsey, 1923. Ind. Univ. Studies 58: 11, 15, 30, 75. ♀, gall.
- quercusverrucarum** var. **restrictus** Kinsey. Fla.
Neuroterus verrucarum var. *restrictus* Kinsey, 1923. Ind. Univ. Studies 58: 14, 30, 77. ♀, gall.
- sadlerensis** Weld. Oreg. Ecology: Produce leaf galls on *Quercus sadleriana*.
Neuroterus sadlerensis Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 9. ♀, ♂, gall.
- saltarius** Weld. Mich., Ind., Minn., Iowa, Mo. Ecology: Produce leaf galls on *Quercus macrocarpa*.
Neuroterus saltarius Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 11. ♀, gall.
- saltatorius** (Edwards). Tex., Ariz., Calif. Ecology: Produce leaf galls in agamic and sexual generations on *Quercus arizonica*, *Q. douglasii*, *Q. dumosa*, *Q. garryana*, *Q. lobata*, *Q. stellata*, *Q. virginiana*.
Cynips Saltatorius Edwards, 1874. Pacific Rural Press 7: 97. ♀, gall.
Neuroterus decipiens Kinsey, 1922. Amer. Mus. Nat. Hist., Bul. 46: 292.
 ♀, ♂, gall. Sexual gen.
- Taxonomy: Rosenthal and Koehler, 1971. Ent. Soc. Amer., Ann. 64: 565-570.
- saltatorius** var. **australis** Kinsey. Tex.
Neuroterus saltatorius var. *australis* Kinsey, 1923. Ind. Univ. Studies 58: 31, 51. ♀, gall.
- saltatorius** var. **decreescens** Kinsey. Ariz.
Neuroterus saltatorius var. *decreescens* Kinsey, 1923. Ind. Univ. Studies 58: 31, 52. ♀, gall.
- saltatorius** var. **texanus** Kinsey. Tex.
Neuroterus saltatorius var. *texanus* Kinsey, 1923. Ind. Univ. Studies 58: 31, 56.
- tantulus** Weld. Md. Ecology: Produce leaf galls on *Quercus alba*.
Neuroterus tantulus Weld, 1952. U. S. Natl. Mus., Proc. 102: 321. ♀, gall.
- tectus** Bassett. Mass., Conn., R. I., N. Y. Ecology: Produce stem galls on *Quercus prinoides*.
Neuroterus tectus Bassett, 1900. Amer. Ent. Soc., Trans. 26: 331. ♀, ♂, gall. Agamic gen.
Neuroterus tectus form *abundans* Kinsey, 1920. Amer. Mus. Nat. Hist., Bul. 42: 339. ♀.
- umbilicatus** Bassett. Conn., Ont., s. to Va. Ecology: Produce leaf galls on *Quercus bicolor*.
Neuroterus umbilicatus Bassett, 1900. Amer. Ent. Soc., Trans. 26: 330. ♀, gall.

- varians** Kinsey. Calif. Ecology: Produce stem galls on *Quercus douglasii*, *Q. lobata*.
Neuroterus varians Kinsey, 1922. Amer. Mus. Nat. Hist., Bul. 46: 294. ♀, gall.
- vernus** Gillette. Iowa. Ecology: Produce leaf galls on *Quercus macrocarpa*.
Neuroterus vernus Gillette, 1889. Iowa Agr. Expt. Sta., Bul. 7: 281. ♀, gall.
- vesicula** (Bassett). Ont. to Va., w. to Ill., Iowa, Tex. Ecology: Produce bud galls on *Quercus alba*.
Cynips vesicula Bassett, 1881. Canad. Ent. 13: 97. ♀, ♂, gall.
- vesicula var. cerinus** Kinsey. Tex. Ecology: Produce stem galls on *Quercus stellata*.
Neuroterus vesicula var. cerinus Kinsey, 1923. Ind. Univ. Studies 58: 15, 35, 125. ♀, ♂, gall.
- vesicula var. ocularis** Kinsey. Tex. Ecology: Produce bud galls on *Quercus stellata*.
Neuroterus vesicula var. ocularis Kinsey, 1923. Ind. Univ. Studies 58: 15, 35, 126. ♀, ♂, gall.
- virgens** Gillette. Colo. Ecology: Produce stem galls on *Quercus arizonica*, *Q. gambelii*, *Q. subturbinella*.
Neuroterus virgens Gillette, 1895. Ent. News 4: 166. ♀, ♂, gall.
- washingtonensis** Beutenmueller. Wash. Ecology: Produce leaf galls on *Quercus garryana*.
Neuroterus washingtonensis Beutenmueller, 1913. Canad. Ent. 45: 280. ♀, ♂, gall.

Genus TRICHOTERAS Ashmead

- Trichoterus* Ashmead, 1897. Psyche 8: 67.
 Type-species: *Trichoterus coquilletti* Ashmead. Monotypic.
- californicum** (Beutenmueller). Calif. Ecology: Produce leaf galls on *Quercus douglasii*, *Q. dumosa*.
Philonix californica Beutenmueller, 1911. Ent. News 22: 69. ♀, gall.
- coquilletti** Ashmead. Ariz., Calif. Ecology: Produce leaf galls on *Quercus chrysolepis*, *Q. wilcoxii*.
Trichoterus coquilletti Ashmead, 1897. Psyche 6: 68. ♀, gall.
- frondeum** Weld. Ariz., Calif. Ecology: Produce bud galls on *Quercus chrysolepis*, *Q. wilcoxii*.
Trichoterus frondeum Weld, 1944. U. S. Natl. Mus., Proc. 95: 4. ♀, gall.
- perfulvum** Weld. Calif. Ecology: Produce leaf galls on *Quercus chrysolepis*.
Trichoterus perfulvum Weld, 1952. U. S. Natl. Mus., Proc. 102: 322. ♀, gall.
- rotundula** Weld. Ariz., Calif. Ecology: Produce leaf galls on *Quercus chrysolepis*, *Q. wilcoxii*.
Trichoterus rotundula Weld, 1952. U. S. Natl. Mus., Proc. 102: 323. ♀, gall.
- tubifaciens** (Weld). Calif. Ecology: Produce leaf galls on *Quercus garryana*.
Xanthoterus tubifaciens Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 53. ♀, gall.
- vacciniifoliae** (Ashmead). Calif. Ecology: Produce leaf galls on *Quercus vaccinifolia*, *Q. chrysolepis*.
Callirhytis vaccinifoliae Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 130. ♀, gall.

Genus PHYLLOTERAS Ashmead

- Phylloterus* Ashmead, 1897. Psyche 8: 67.
 Type-species: *Biorhiza rubinus* Gillette. Monotypic.
- cupella** (Weld). N. Mex., Ariz. Ecology: Produce leaf galls on *Quercus arizonica*, *Q. oblongifolia*, *Q. reticulata*, *Q. subturbinella*.
Trigonaspis cupella Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 50. ♀, gall.
- rubinum** (Gillette). N. Y., Md., Va., N. C., Mich., Ill., Mo. Ecology: Produce leaf galls on *Quercus alba*.
Biorhiza rubinus Gillette, 1888. Mich. State Bd. Agr., Rpt. 27: 472. ♀, gall.
- sigma** Weld. N. Y., Md., D. C., Va. Ecology: Produce leaf galls on *Quercus alba*.
Phylloterus sigma Weld, 1944. U. S. Natl. Mus., Proc. 95: 5. ♀, gall.

Genus XYSTOTERAS Ashmead

- Xystoterus* Ashmead, 1897. Canad. Ent. 29: 260.

Type-species: *Xystoteras volutellae* Ashmead. Monotypic.

nigrum (Fitch). N. Y., Mo. Ecology: Produce leaf galls on *Quercus alba*.

Biarhiza (!) *nigra* Fitch, 1859 (1858). N. Y. State Agr. Soc., Trans. 18: 782. ♀.

Acraspis politus Bassett, 1890. Amer. Ent. Soc., Trans. 17: 85. ♀.

poculum (Osten Sacken). N. H., Vt., N. Y., Va., Ill., Mo. Ecology: Produce leaf galls on *Quercus alba*.

Cecidomyia poculum Osten Sacken, 1862. Smithsn. Misc. Collect. 6: 201. Gall.

Xystoteras poculum Weld, 1922. U. S. Natl. Mus., Proc. 61 (18): 7. ♀, gall.

Taxonomy: Gagne, 1973. Ent. Soc. Amer., Ann. 66: 858.

volutellae Ashmead. Kans. Ecology: Produce leaf galls on *Quercus macrocarpa*.

Xystoteras volutellae Ashmead, 1897. Canad. Ent. 29: 260. ♀, gall.

Genus XANTHOTERAS Ashmead

Xanthoteras Ashmead, 1897. Canad. Ent. 29: 261.

Type-species: *Biorhiza forticornis* Walsh. Orig. desig.

eburneum (Bassett). Colo., N. Mex., Utah, Ariz. Ecology: Produce stem galls on *Quercus reticulata*, *Q. submollis*, *Q. subturbinella*.

Dryophanta eburneus Bassett, 1890. Amer. Ent. Soc., Trans. 17: 10. ♀, gall. Agamic gen.

Dryophanta similis Bassett, 1890. Amer. Ent. Soc., Trans. 17: 71. ♀, gall. Preocc. by Adler, 1881.

Dryophanta simillima Dalla Torre, 1893. Cat. Hym., v. 2, p. 54. N. name.

Dryophanta glabra Gillette, 1894. Canad. Ent. 26: 237. ♀, gall.

emoryi (Ashmead). N. Mex. Ecology: Produce leaf galls on *Quercus* sp.

Dryophanta emoryi Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 115. ♀, gall. Agamic gen.

fumosum (Weld). N. Mex., Ariz. Ecology: Produce root galls on *Quercus gambelii*, *Q.*

reticulata, *Q. submollis*, *Q. subturbinella*.

Trigonaspis fumosa Weld, 1921. U. S. Natl. Mus., Proc. 59: 204. ♀, ♂, gall. Sexual gen.

mediocre Weld. Ariz. Ecology: Produce root galls on *Quercus subturbinella*.

Xanthoteras mediocre Weld, 1930. Ent. Soc. Wash., Proc. 32: 30. ♀, gall. Agamic gen.

obconicum (Weld). Calif. Ecology: Produce root galls on *Quercus douglasii*.

Trigonaspis obconica Weld, 1921. U. S. Natl. Mus., Proc. 59: 202. ♀, ♂, gall. Sexual gen.

ornatum (Kinsey). Tex. Ecology: Produce leaf galls on *Quercus brevifolia*.

Trigonaspis ornata Kinsey, 1922. Ind. Univ. Studies 53: 139. ♀, ♂, gall. Sexual gen.

politum (Bassett). N. J. to Fla., w. to Mo., Okla., Tex. Ecology: Produce leaf galls on *Quercus chapmani*, *Q. stellata* on coastal plains and inland lowlands.

Cynips polita Bassett, 1881. Canad. Ent. 13: 99. ♀, gall. Agamic gen.

pulchellum (Beutenmueller). Oreg., Calif.

Dryophanta pulchella Beutenmueller, 1911. Ent. News 22: 357. ♀. Sexual gen.

pulchripenne (Ashmead). Ariz., Calif. Ecology: Produce leaf galls on *Quercus arizonica*, *Q.*

oblongifolia, *Q. reticulata*, *Q. subturbinella*, *Q. foumeyii*.

Dryophanta pulchripenne Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 115. ♀, gall. Agamic gen.

Dryophanta porterae Cockerell, 1900. Canad. Ent. 32: 91. ♀, gall.

pumiliventre (Bassett). Colo., Utah. Ecology: Produce root galls on *Quercus* sp.

Dryophanta pumiliventre Bassett, 1890. Amer. Ent. Soc., Trans. 17: 69. ♂, ♀. Sexual gen.

Belonocnema colorado Gillette, 1893. Ent. News 4: 210. ♀.

Trigonaspis radiceis Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 113. ♀, ♂, gall.

quercusforticorne (Walsh). N. H. to Va., w. to Minn. Ecology: Produce stem galls on *Quercus alba*.

Cynips q. forticornis Walsh, 1864. Ent. Soc. Phila., Proc. 2: 489. ♀, gall. Agamic gen.

Cynips (Teras) forticornis Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 340, 350, 353.

Taxonomy: Fitch, 1859 (1858). N. Y. State Agr. Soc., Trans. 18: 812.

radicola (Ashmead). Ont., N. Y., N. J., Pa., D. C., Va., Ind., Ill., Mo. Ecology: Produce root galls on *Quercus alba*.

Dryophanta radicola Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 116. ♀, gall. Sexual gen.

teres Weld. Oreg., Calif. Ecology: Produce leaf galls on *Quercus dumosa*, *Q. garryana*.
Xanthoteras teres Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 52. ♀, gall. Agamic gen.

teres var. **hildebrandae** (Kinsey). Calif.

Cynips (*Autron*) *teres* var. *hildebrandae* Kinsey, 1930. Gall wasp genus *Cynips*, p. 217. ♀, gall. Agamic gen.

Genus PARACRASPID Weld

Paracraspid Weld, 1952. U. S. Natl. Mus., Proc. 102: 324.

Type-species: *Callirhytis guadaloupeensis* Fullaway. Orig. desig.

guadaloupeensis (Fullaway). Ariz., Calif. Ecology: Produce leaf galls on *Quercus chrysolepis*, *Q. wilcoxii*.

Callirhytis guadaloupeensis Fullaway, 1911. Ent. Soc. Amer., Ann. 4: 363. ♀, gall.

insolens (Weld). Calif. Ecology: Produce leaf galls on *Quercus chrysolepis*.

Acraspis insolens Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 59. ♀, gall.

patelloides (Trotter). Calif. Ecology: Produce leaf galls on *Quercus chrysolepis*.

Andricus? *patelloides* Trotter, 1911. Lab. Zool. Gen. e Agr. Portici, Bol. 5: 106. gall.

Acraspis patelloides Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 60. ♀, gall.

Genus ACRASPIS Mayr

Acraspis Mayr, 1881. Zwanzig. Jahresber. Comm.-Oberrealsch. I. Bez. Wien. pp. 2, 29.

Type-species: *Cynips pezomachoides* Osten Sacken. Desig. by Rohwer and Fagan, 1917.

alaria Weld. Colo. Ecology: Produce leaf galls on *Quercus gambelii*.

Acraspis alaria Weld, 1922. U. S. Natl. Mus., Proc. 61 (18): 14. ♀, gall.

arida (Kinsey). Tex. Ecology: Produce leaf galls on *Quercus grisea*.

Cynips (*Acraspis*) *arida* Kinsey, 1930. Gall wasp genus *Cynips*, p. 313. ♀, gall.

bandero (Kinsey). Colo. Ecology: Produce leaf galls on *Quercus gambelii*.

Cynips (*Acraspis*) *bandero* Kinsey, 1936. Origin of higher categories in *Cynips*, p. 284. ♀, gall.

conica (Kinsey). Ariz. Ecology: Produce leaf galls on *Quercus grisea*.

Cynips (*Acraspis*) *conica* Kinsey, 1930. Gall wasp genus *Cynips*, p. 338. ♀, gall.

echini Ashmead. Fla. Ecology: Produce leaf galls on *Quercus bicolor*.

Acraspis echini Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 140. ♀, gall.

Cynips (*Acraspis*) *pezomachoides* var. *echinoides* Kinsey, 1930. Gall wasp genus *Cynips*, p. 412. N. name, unnecessarily proposed.

erinacei (Beutenmueller). Ont. s. to Va., w. to Ill. Ecology: Produce galls on *Quercus alba*, sexual generation on the buds, agamic generation on leaves.

Philonthus erinacei Beutenmueller, 1909. Amer. Mus. Natl. Hist., Bul. 26: 247. ♀, gall. Agamic gen.

Andricus fulvicollis form *bicolens* Kinsey, 1920. Amer. Mus. Nat. Hist., Bul. 42: 354. ♀, ♂, gall.

Taxonomy: Triggerson, 1914. Ent. Soc. Amer., Ann. 7: 6. ♀, ♂, gall. Bisexual gen.

gemula (Bassett). N. Y., N. J., w. to Kans. Ecology: Produce galls on *Quercus alba*, *Q. michauxii*, *Q. muehlenbergii*, *Q. prinoides*, sexual generation on the buds, agamic generation on leaves.

Cynips gemula Bassett, 1881. Canad. Ent. 13: 104. ♀, ♂, gall.

gemula var. **cruenta** (Kinsey). Ill.

Cynips (*Acraspis*) *gemula*(!) var. *cruenta* Kinsey, 1930. Gall wasp genus *Cynips*, p. 360. ♀, gall. Agamic gen.

gemula var. **fuscata** (Kinsey). Kans.

Cynips (*Acraspis*) *gemula*(!) var. *fuscata* Kinsey, 1930. Gall wasp genus *Cynips*, p. 362. ♀, gall. Agamic gen.

gemula var. **suspecta** (Kinsey). Ind.

Cynips (*Acraspis*) *gemula*(!) var. *suspecta* Kinsey, 1930. Gall wasp genus *Cynips*, p. 364. ♀, gall. Agamic gen.

- hibrida** (Kinsey). Tenn. Ecology: Produce galls on leaves of *Quercus alba*.
Cynips (Acraspis) hibrida Kinsey, 1936. Origin of higher categories in Cynips, p. 273. ♀, gall.
- hirtior** (Kinsey). Utah. Ecology: Produce leaf galls on *Quercus utahensis*.
Cynips (Acraspis) hirtior Kinsey, 1936. Origin of higher categories in Cynips, p. 286. ♀, gall. Agamic gen.
- inflata** (Kinsey). Ind. Ecology: Produce leaf galls on *Quercus alba*.
Cynips (Acraspis) inflata Kinsey, 1936. Origin of higher categories in Cynips, p. 274. ♀, gall. Agamic gen.
- longicornis** (Bassett). Conn. Ecology: Produce stem galls on *Quercus stellata*.
Dryophanta longicornis Bassett, 1900. Amer. Ent. Soc., Trans. 26: 327. ♂, ♀. Sexual gen.
- macrocarpae** Bassett. Conn. Ecology: Produce leaf galls on *Quercus macrocarpa*.
Acraspis macrocarpae Bassett, 1890. Amer. Ent. Soc., Trans. 17: 84. ♀, gall. Agamic gen.
Acraspis undulata Gillette, 1893. Ent. News 4: 28. ♀, gall. Agamic gen.
Cynips (Acraspis) hirta var. *macrescens* Kinsey, 1930. Gall wasp genus Cynips, p. 423. N. name, unnecessarily proposed.
- pezomachoides** (Osten Sacken). Ont. s. to N. C., w. to Minn., Colo. Ecology: Produce leaf galls on *Quercus alba*.
Cynips pezomachoides Osten Sacken, 1862. Ent. Soc. Phila., Proc. 1: 250. ♀, gall. Agamic gen.
- pezomachoides** var. **advena** (Kinsey). Tenn.
Cynips (Acraspis) pezomachoides var. *advena* Kinsey, 1930. Gall wasp genus Cynips, p. 409. ♀, gall. Agamic gen.
- pezomachoides** var. **cincturata** (Kinsey). Colo.
Cynips (Acraspis) pezomachoides var. *cincturata* Kinsey, 1930. Gall wasp genus Cynips, p. 377. ♀, gall. Agamic gen.
- pezomachoides** var. **derivatus** (Kinsey). Ala.
Cynips (Acraspis) pezomachoides var. *derivatus* Kinsey, 1930. Gall wasp genus Cynips, p. 391. ♀, gall. Agamic gen.
- pezomachoides** var. **ozark** (Kinsey). Mo.
Cynips (Acraspis) pezomachoides var. *ozark* Kinsey, 1930. Gall wasp genus Cynips, p. 378. ♀, gall. Agamic gen.
- pezomachoides** var. **wheeleri** (Kinsey). Mich.
Cynips (Acraspis) pezomachoides var. *wheeleri* Kinsey, 1930. Gall wasp genus Cynips, p. 380. ♀, gall. Agamic gen.
- prinoides** (Beutenmueller). Mass., N. Y., N. J. Ecology: Produce leaf galls on *Quercus prinoides*.
Cynips (?) prinoides Beutenmueller, 1892. Amer. Mus. Nat. Hist., Bul. 4: 257. ♀, gall.
- quercushirta** (Bassett). Conn. s. to Va., w. to Ill., Tex., Utah. Ecology: Produce leaf galls on *Quercus chapmani*, *Q. macrocarpa*, *Q. michauxii*, *Q. prinus*, *Q. utahensis*.
Cynips q. hirta Bassett, 1864. Ent. Soc. Phila., Proc. 3: 688. ♀, gall. Agamic gen.
Cynips (Teras) hirta Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 340, 347, 353.
- quercushirta** var. **obtrectans** (Kinsey). Tex.
Cynips (Acraspis) hirta var. *obtrectans* Kinsey, 1930. Gall wasp genus Cynips, p. 420. ♀, gall. Agamic gen.
- quercushirta** var. **opima** (Kinsey). Ill.
Cynips (Acraspis) hirta var. *opima* Kinsey, 1930. Gall wasp genus Cynips, p. 421. ♀, gall. Agamic gen.
- quercushirta** var. **packorum** (Kinsey). Utah.
Cynips (Acraspis) hirta var. *packorum* Kinsey, 1930. Gall wasp genus Cynips, p. 418. ♀, gall. Agamic gen.
- quercushirta** var. **scelestia** (Kinsey). Mich.
Cynips (Acraspis) hirta var. *scelestia* Kinsey, 1930. Gall wasp genus Cynips, p. 422. ♀, gall. Agamic gen.

ulterior (Kinsey). Colo. Ecology: Produce leaf galls on *Quercus gambelii*.

Cynips (*Acraspis*) *ulterior* Kinsey, 1936. Origin of higher categories in *Cynips*, p. 294. ♀, gall. Agamic gen.

villosa Gillette. N. Y., Mich., Iowa, Kans., Tex., Utah, Ariz. Ecology: Produce leaf galls on *Quercus arizonica*, *Q. grisea*, *Q. macrocarpa*, *Q. utahensis*.

Acraspis villosus Gillette, 1888. Mich. State Bd. Agr., Rpt. 27: 474. ♀, gall. Agamic gen.

villosa var. **apache** (Kinsey). Ariz.

Cynips (*Acraspis*) *villosa* var. *apache* Kinsey, 1930. Gall wasp genus *Cynips*, p. 352. ♀, gall. Agamic gen.

villosa var. **calvescens** (Kinsey). Utah.

Cynips (*Acraspis*) *villosa* var. *calvescens* Kinsey, 1930. Gall wasp genus *Cynips*, p. 354. ♀, gall. Agamic gen.

villosa var. **consocians** (Kinsey). Kans.

Cynips (*Acraspis*) *villosa* var. *consocians* Kinsey, 1930. Gall wasp genus *Cynips*, p. 357. ♀, gall. Agamic gen.

villosa var. **expositor** (Kinsey). Tex.

Cynips (*Acraspis*) *villosa* var. *expositor* Kinsey, 1930. Gall wasp genus *Cynips*, p. 351. ♀, gall. Agamic gen.

Genus PHILONIX Fitch

Philonix Fitch, 1859 (1858). N. Y. State Agr., Soc., Trans. 18: 783.

Type-species: *Philonix fulvicollis* Fitch. Desig. by Ashmead, 1903.

fulvicollis Fitch. N. Y., Mich., Tenn., Ill., Kans. Ecology: Produce leaf galls on *Quercus alba*, *Q. chapmani*, *Q. macrocarpa*. Specimens have been collected on snow in late autumn.

Philonix fulvicollis Fitch, 1859 (1858). N. Y. State Agr. Soc., Trans. 18: 783. ♀. Agamic gen.

fulvicollis var. **canadensis** (Kinsey). Mich.

Cynips (*Philonix*) *fulvicollis* var. *canadensis* Kinsey, 1930. Gall wasp genus *Cynips*, p. 273. ♀, gall.

fulvicollis var. **major** (Kinsey). Ill.

Cynips (*Philonix*) *fulvicollis* var. *major* Kinsey, 1930. Gall wasp genus *Cynips*, p. 257. ♀, gall.

fulvicollis var. **rubricosa** (Kinsey). Tenn.

Cynips (*Philonix*) *fulvicollis* var. *rubricosa* Kinsey, 1930. Gall wasp genus *Cynips*, p. 254. ♀, gall.

fulvicollis var. **vorisi** (Kinsey). Kans.

Cynips (*Philonix*) *fulvicollis* var. *vorisi* Kinsey, 1930. Gall wasp genus *Cynips*, p. 255. ♀, gall.

gigas Weld. Tex. Ecology: Produce leaf galls on *Quercus lyrata*.

Philonix gigas Weld, 1922. U. S. Natl. Mus., Proc. 61 (18): 12. ♀, gall.

insulensis (Kinsey). Wis., Ill., Minn., Iowa, S. Dak., Nebr., Wyo., Colo. Ecology: Produce leaf galls on *Quercus gambelii*, *Q. macrocarpa*.

Cynips (*Philonix*) *insulensis* Kinsey, 1936. Origin of higher categories in *Cynips*, p. 210. ♀, gall (agamic gen.).

lanaeglobuli (Ashmead). Fla. Ecology: Produce leaf galls on *Quercus* sp., probably *Q. michauxii*.

Acraspis lanaeglobuli Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 139. ♀, gall.

latigenae (Kinsey). Utah. Ecology: Produce leaf galls on *Quercus utahensis*.

Cynips (*Philonix*) *latigenae* Kinsey, 1936. Origin of higher categories in *Cynips*, p. 212. ♀, gall.

nigra (Gillette). Conn., Mich., Iowa. Ecology: Produce leaf galls on *Quercus alba*.

Acraspis niger Gillette, 1889. Iowa Agr. Expt. Sta., Bul. 7: 282. ♀, gall.

Acraspis Gillettei Bassett, 1900. Amer. Ent. Soc., Trans. 26: 323. ♀, gall.

nigricollis Fitch. N. Y. Collected on snow before 1858 and not known to have been found or reared since.

Philonix nigricollis Fitch, 1859 (1858). N. Y. State Agr. Soc., Trans. 18: 783. ♀.

Taxonomy: Kinsey, 1930. Gall wasp genus *Cynips*, p. 262 (syn. of *fulvicollis* Fitch).

pallipes (Basset). Conn., N. Y., Md., D. C., Va., Ill. Ecology: Produce bud galls on *Quercus alba*.

Dryophanta pallipes Basset, 1900. Amer. Ent. Soc., Trans. 26: 327. ♀, gall.

Taxonomy: Kinsey, 1930. Gall wasp genus *Cynips*, p. 269 (sexual form of *fulvicollis* Fitch ?).

Genus LIODORA Foerster

Liodora Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 331, 334.

Type-species: *Liodora sulcata* Foerster. Monotypic.

apiarium Weld. D. C., Va. Ecology: Produce leaf galls on *Quercus alba*.

Liodora apiarium Weld, 1944. U. S. Natl. Mus., Proc. 95: 6. ♀, gall.

clarkei (Basset). Mass., Mo. Ecology: Produce bud galls on *Quercus alba*, *Q. stellata*.

Dryophanta clarkei Basset, 1890. Amer. Ent. Soc., Trans. 17: 69. ♀, ♂, gall.

Dryophanta vesiculoides Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 114. ♀, ♂, gall.

comata Weld. Va. Ecology: Produce leaf galls on *Quercus alba*.

Liodora comata Weld, 1952. U. S. Natl. Mus., Proc. 102: 325. ♀, ♂, gall.

Genus DROS Kinsey

Dros Kinsey, 1937. Rev. Ent. 7: 49.

Type-species: *Dros petasum* Kinsey. Orig. desig.

amphora (Weld). N. Mex., Ariz. Ecology: Produce leaf galls on *Quercus arizonica*, *Q. oblongifolia*.

Diplolepis amphora Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 17. ♀, gall.

atrimentum (Kinsey). Calif. Ecology: Produce leaf galls on *Quercus douglasii*.

Andricus atrimentum Kinsey, 1922. Amer. Mus. Nat. Hist., Bul. 46: 279. ♀, ♂, gall.

pedicellatum (Kinsey). Calif. Ecology: Produce leaf galls on *Quercus douglasii*.

Andricus pedicellatum Kinsey, 1922. Amer. Mus. Nat. Hist., Bul. 46: 284. ♀, ♂, gall.

sessile (Weld). Ariz. Ecology: Produce leaf galls on *Quercus arizonica*, *Q. oblongifolia*.

Diplolepis sessilis Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 31. ♀, gall.

viscidum (Weld). Ariz. Ecology: Produce leaf galls on *Quercus oblongifolia*.

Liodora viscida Weld, 1944. U. S. Natl. Mus., Proc. 95: 5. ♀, gall.

Genus ADLERIA Rohwer and Fagan

Adleria Rohwer and Fagan, 1917. U. S. Natl. Mus., Proc. 53: 359.

Type-species: *Cynips kollari* Hartig. Orig. desig.

The name *Cynips* was applied to this genus by Hartig and most other authors, but not Linnaeus and not Kinsey.

Taxonomy: Niblett, 1955. So. London Ent. and Nat. Hist. Soc., Proc. and Trans. 1953-54, p. 144 (Possible syn. of *Andricus* Hartig).

arizonica (Cockerell). Ariz. Ecology: Produce leaf galls on *Quercus arizonica*.

Holcaspis arizonica Cockerell, 1902. Canad. Ent. 34: 183. ♀, gall.

dimorpha (Beutenmueller). N. Y., N. J., Md., Va., Mich., Ill., Iowa. Ecology: Produce leaf galls on *Quercus alba*, *Q. macrocarpa*.

Cynips dimorphus Beutenmueller, 1913. Amer. Ent. Soc., Trans. 39: 245. ♀, gall.

flavicollis (Ashmead). Ill.

Cynips flavicollis Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 133. ♀.

nigricens (Gillette). N. Y., N. J., Va., Ohio, Mich., Ill., Mo. Ecology: Produce leaf galls on *Quercus bicolor*.

Cynips nigricens Gillette, 1888. Mich. State Bd. Agr., Rpt. 27: 473. ♀, gall.

Andricus Ashmeadii Basset, 1890. Amer. Ent. Soc., Trans. 26: 320. ♀.

- quercusstrobilana** (Osten Sacken). Ont., Mass. to Va., w. to Ill., Iowa. Ecology: Produce stem galls on *Quercus bicolor*, *Q. macrocarpa*.
Cynips q. strobilana Osten Sacken, 1862. Ent. Soc. Phila., Proc. 1: 254. gall.
Cynips quercus strobilana Osten Sacken, 1864. In Bassett, Ent. Soc. Phila., Proc. 3: 690. ♀.
Cynips strobilana Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 345, 349, 350.
- vacciniiformis** (Beutenmueller). Tex. Ecology: Produce leaf galls on *Quercus stellata*.
Cynips vacciniiformis Beutenmueller, 1913. Amer. Ent. Soc., Trans. 39: 247. ♀, gall.
- weldi** (Beutenmueller). Ont., Mass. to Va., w. to Ill., Mo., Ark. Ecology: Produce leaf petiole galls on *Quercus alba*.
Cynips weldi Beutenmueller, 1918. Brooklyn Ent. Soc., Bul. 13: 118. ♀, gall.

Genus AMPHIBOLIPS Reinhard

- Amphibolips* Reinhard, 1865. Berlin Ent. Ztschr. 9: 10.
 Type-species: *Cynips spongifica* Osten Sacken. Orig. desig.
Trissandricus Kieffer, 1910. Lab. Zool. Gen. e Agr. Portici, Bol. 4: 115.
 Type-species: *Trissandricus maculipennis* Kieffer. Monotypic.
- Revision: Beutenmueller, 1909. Amer. Mus. Nat. Hist., Bul. 26: 47-66.
- acuminata** Ashmead. Atlantic and Gulf Coast plains, Mississippi Valley n. to Mo. Ecology: Produce bud and stem galls on *Quercus cinerea*, *Q. falcata*.
Amphibolips acuminata Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 126. ♀, gall.
- arcuata** (Kieffer). Ga. Ecology: Produce stem galls on *Quercus* sp.
Callirhytis arcuata Kieffer, 1910. Lab. Zool. Gen. e Agr. Portici, Bol. 4: 341. ♀.
- confluenta** (Harris). Mass., Ont. to Va., w. to Ill., Iowa, Kans. Ecology: Produce leaf galls on red oaks.
Cynips confluentus Harris, 1841. Rpt. Ins. Mass. Injurious to Veg., p. 397. ♀, gall.
Cynips aciculata Osten Sacken, 1861. Ent. Soc. Phila., Proc. 1: 56. ♀, gall.
- cookii** Gillette. Ont. to Va., w. to Mich., Wis., Ill., Mo. Ecology: Produce bud galls on *Quercus rubra*.
Amphibolips cookii Gillette, 1888. Mich. State Bd. Agr., Rpt. 27: 475. ♀, gall.
- gainesi** Bassett. Ark., Tex. Ecology: Produce acorn galls on *Quercus laurifolia*.
Amphibolips Gainesi Bassett, 1900. Amer. Ent. Soc., Trans. 26: 322. ♀, gall.
- globulus** Beutenmueller. N. J. Ecology: Produce bud galls on *Quercus marilandica*.
Amphibolips globulus Beutenmueller, 1909. Amer. Mus. Nat. Hist., Bul. 26: 60. ♀, gall.
- globus** Weld. Va. Ecology: Produce bud galls on *Quercus palustris*.
Amphibolips globus Weld, 1952. U. S. Natl. Mus., Proc. 102: 325. ♀, ♂, gall. Sexual gen. and female of agamic gen.
- gumia** Kinsey. Ariz. Ecology: Produce stem galls on *Quercus emoryi*, *Q. hypoleuca*.
Amphibolips gumia Kinsey, 1937. Rev. Ent. 7: 437. ♀, gall.
- melanocera** Ashmead. Fla. Ecology: Produce bud galls on *Quercus nigra*.
Amphibolips melanocera Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 299, 303. ♂, gall.
- murata** Weld. Fla. Ecology: Produce bud galls on *Quercus cinerea*, *Q. laurifolia*, *Q. myrtifolia*, *Q. punila*.
Amphibolips murata Weld, 1957. U. S. Natl. Mus., Proc. 107: 111-112. ♀, gall.
- nigra** Beutenmueller. Ariz.; Mexico. Ecology: Produce stem galls on *Quercus emoryi*, *Q. hypoleuca*.
Amphibolips nigra Beutenmueller, 1911. Ent. News 22: 198. ♀.
- Taxonomy: Beutenmueller, 1917. Canad. Ent. 49: 348 (gall).
- nubilipennis** (Harris). Mass. to Va., w. to Mich., Ill., Iowa. Ecology: Produce leaf galls on red oaks.
Cynips nubilipennis Harris, 1841. Rpt. Ins. Mass. Injurious to Veg., p. 399. ♀, gall.
Cynips q. sculptus Bassett, 1863. Ent. Soc. Phila., Proc. 2: 324. ♀, ♂, gall.
- quercuscinerea** (Ashmead). Fla. Ecology: Produce stem galls on *Quercus cinerea*.
Cynips q. cinerea Ashmead, 1881. Amer. Ent. Soc., Trans. 9: Proc. p. xix. ♀, gall.
Amphibolips cinerea Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 294.

- quercuscitriformis** (Ashmead). Fla. Ecology: Produce bud galls on *Quercus phellos*.
Cynips q. citriformis Ashmead, 1881. Amer. Ent. Soc., Trans. 9: Proc. p. xxviii. ♀, gall.
Amphibolips citriformis Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 294.
- quercuscoelebs** (Osten Sacken). Mass., N. Y., D. C., Va. Ecology: Produce leaf galls on *Quercus coccinea*.
Cynips quercus coelebs Osten Sacken, 1861. Ent. Soc. Phila., Proc. 1: 61. ♂, gall.
Cynips coelebs Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 340, 345, 348, 355.
- quercusfuliginosa** (Ashmead). Fla. Ecology: Produce acorn galls on *Quercus laurifolia*.
Cynips q. fuliginosa Ashmead, 1885. Amer. Ent. Soc., Trans. 12: Proc. p. vii. ♀, gall.
Amphibolips fuliginosa Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 294.
- quercusilicifoliae** (Bassett). Mass., Conn., N. Y., N. J., Pa., Va. Ecology: Produce leaf galls on *Quercus ilicifolia*.
Cynips q. ilicifoliae Bassett, 1864. Ent. Soc. Phila., Proc. 3: 681. ♀, ♂, gall.
Cynips ilicifoliae Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 340, 355.
- quercusinanis** (Osten Sacken). Ont. s. to Va. w. to Wis., Ill., Mo. Ecology: Produce leaf galls on *Quercus rubra*.
Cynips q. inanis Osten Sacken, 1862. Ent. Soc. Phila., Proc. 1: 242, 247. ♀, gall.
Cynips inanis Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 344, 347, 354.
- quercusjuglans** (Osten Sacken). Mass. to Va., w. to Iowa, Mo. Ecology: Produce acorn galls on red oaks.
Cynips q. juglans Osten Sacken, 1862. Ent. Soc. Phila., Proc. 1: 255. gall.
Cynips q. prunus Walsh and Riley, 1869. Amer. Ent. 1: 104. ♀, gall.
- quercusracemaria** (Ashmead). Fla. Ecology: Produce leaf galls on *Quercus laurifolia*.
Cynips q. racemaria Ashmead, 1881. Amer. Ent. Soc., Trans. 9: Proc. p. xxvi. ♀, gall.
Amphibolips racemaria Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 294.
- quercusspongifica** (Osten Sacken). Ont. to Va., w. to Ill. Ecology: Produce leaf galls on *Quercus coccinea*, *Q. marilandica*, *Q. velutina*.
Cynips q. spongifica Osten Sacken, 1862. Ent. Soc. Phila., Proc. 1: 244, 247. ♀, gall.
Cynips spongifica Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 340, 344, 347, 354.
Cynips q. coccineae Osten Sacken, 1862. Ent. Soc. Phila., Proc. 1: 243. ♀, gall.
Amphibolips Carolinensis Bassett, 1890. Amer. Ent. Soc., Trans. 17: 85. ♀, gall.
Amphibolips longicornis Bassett, 1900. Amer. Ent. Soc., Trans. 26: 321. ♀, gall.
Trissandricus maculipennis Kieffer, 1910. Lab. Zool. Gen. e Agr. Portici, Bol. 4: 115. ♀.
- spinosa** Ashmead. Fla. Ecology: Produce bud galls on *Quercus laurifolia*.
Amphibolips spinosa Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 141. ♀, gall.
- tinctoriae** Ashmead. N. Y. to Va., w. to Ill., Mo. Ecology: Produce bud galls on *Quercus coccinea*, *Q. velutina*.
Amphibolips tinctoriae Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 125. ♀, gall.
- trizonata** Ashmead. N. Mex., Ariz. Ecology: Produce stem galls on *Quercus emoryi*, *Q. hypoleuca*.
Amphibolips trizonata Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 125. ♀, ♂, gall.

Genus ANDRICUS Hartig

- Andricus* Hartig, 1840 (1839). Ztschr. f. Ent. 2: 185, 190.
 Type-species: *Andricus noduli* Hartig. Desig. by Foerster, 1869.
- Aphilotrix* Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 331, 336.
 Type-species: *Cynips corticis* Linnaeus. Monotypic.
- Manderstjernia* Radoszkowski, 1886. Soc. Nat. Moscou, Bul. 39: 304.
 Type-species: *Manderstjernia paradoxa* Radoszkowski. Monotypic.
- Euschmitzia* Dettmer, 1925. Naturhist. Maand. Maastricht 14: 122.
 Type-species: *Euschmitzia rara* Dettmer. Monotypic.
- Oncaspis* Dettmer, 1925. Naturhist. Maand. Maastricht 14: 123.
 Type-species: *Oncaspis filigranata* Dettmer. Monotypic.
- Eusymphagus* Dettmer. 1930. Broteria, Rev. Luso-Brazil., Ser. Zool. 26: 54-57.
 Type-species: *Eusymphagus bellus* Dettmer. Monotypic.
- Druon* Kinsey, 1937. Rev. Ent. 7: 56.

- Type-species: *Druon protagion* Kinsey. Orig. desig.
Femuros Kinsey, 1937. Rev. ent. 7: 65.
 Type-species: *Femuros repandae* Kinsey. Orig. desig.
Feron Kinsey, 1937. Rev. Ent. 7: 69.
 Type-species: *Feron verutum* Kinsey. Orig. desig.
Conobius Kinsey, 1938. Ind. Acad. Sci., Proc. 47: 262.
 Type-species: *Conobius strues* Kinsey. Orig. desig.
- aciculatus** Beutenmueller. Mo., Ark., Tex. Ecology: Produce stem galls on *Quercus stellata*.
Andricus aciculatus Beutenmueller, 1909. Ent. News 20: 247. ♀, gall.
- albicomus** Weld. Oreg. Ecology: Produce leaf galls on *Quercus garryana*.
Andricus albicomus Weld, 1952. U. S. Natl. Mus., Proc. 102: 328. ♀, gall.
- albobalani** Weld. Calif. Ecology: Produce acorn galls on *Quercus douglasii*, *Q. dumosa*, *Q. lobata*.
Andricus albobalani Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 68. ♀, gall.
- biconicus** Weld. D. C., Va., w. to Mo., Ark., Okla., Tex. Ecology: Produce leaf galls on *Quercus stellata*.
Andricus biconicus Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 68. ♀, gall.
- bracteatus** Weld. Ariz. Ecology: Produce stem galls on *Quercus arizonica*, *Q. oblongifolia*, *Q. reticulata*, *Q. toumeyi*.
Andricus bracteatus Weld, 1944. U. S. Natl. Mus., Proc. 95: 7. ♀, gall.
- brunneus** Fullaway. Calif. Ecology: Produce leaf galls on *Quercus douglasii*, *Q. dumosa*, *Q. garryana*, *Q. lobata*.
Andricus brunneus Fullaway, 1911. Ent. Soc. Amer., Ann. 4: 353. ♀, gall.
- Taxonomy: Weld, 1952. U. S. Natl. Mus., Proc. 102: 327 (gall).
- caepula** (Weld). N. Mex., Ariz. Ecology: Produce leaf galls on *Quercus arizonica*, *Q. oblongifolia*, *Q. subtorbinella*.
Diptolepis caepula Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 19. ♀, gall.
- capillatus** (Weld). Md., D. C., Va. w. to Ill., Mo., Ark. Ecology: Produce leaf galls on *Quercus alba*.
Diptolepis capillata Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 20. ♀, gall.
- cellularius** Gillette. Colo. Ecology: Produce bud galls on *Quercus undulata*.
Andricus cellularius Gillette, 1892. Ent. News 3: 247. ♀, gall.
Neuroterus cellula (!) Gillette, 1902. In Mayr, Zool.-Bot. Gesell. Wien, Verh. 52: 289.
- chico** Weld. Calif. Ecology: Produce bud galls on *Quercus lobata*.
Andricus chico Weld, 1952. U. S. Natl. Mus., Proc. 102: 328. ♀, gall.
- chinquapin** (Fitch). Conn., N. Y. to Va., w. to Ill., Mo. Ecology: Produce leaf galls on *Quercus alba*, *Q. bicolor*, *Q. prinoides*.
Figites chinquapin Fitch, 1859 (1858). N. Y. State Agr. Soc., Trans. 18: 820. ♀, gall.
Cynips quercus fusiformis Osten Sacken, 1861. Ent. Soc. Phila., Proc. 1: 61. ♀, gall.
Cynips capsula Bassett, 1881. Canad. Ent. 13: 101. ♀, ♂, gall.
- chrysobalani** Weld. Calif. Ecology: Produce acorn galls on *Quercus chrysolepis*.
Andricus chrysobalani Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 71. ♀, gall.
- chrysolepidicola** (Ashmead). Calif. Ecology: Produce stem galls in agamic generation, bud galls in sexual generation, on *Quercus douglasii*, *Q. dumosa*, *Q. garryana*, *Q. lobata*.
 Originally described incorrectly as producing galls on *Quercus chrysolepis*.
Cynips chrysolepidicola Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 124. ♀, gall.
Cynips kelloggii Fullaway, 1911. Ent. Soc. Amer., Ann. 4: 345. ♀, gall.
Cynips rufescens McCracken and Egbert, 1922. Stanford Univ., Pubs., Univ. Ser., Biol. Sci. 3 (1): 21. ♀, gall.
- Plagiotrichus* (!) *chrysolepidicola* var. *diminuens* Kinsey, 1922. Ind. Univ. Studies 53: 114. ♀, gall.
- Plagiotrichus* (!) *chrysolepidicola* var. *alutaceus* Kinsey, 1922. Ind. Univ. Studies 53: 116. ♀, gall.
- Plagiotrichus* (!) *chrysolepidicola* var. *atricinctus* Kinsey, 1922. Ind. Univ. Studies 53: 117. ♀, gall.

- Plagiotrichus* (!) *chrysolepidicola* var. *compositus* Kinsey, 1922. Ind. Univ. Studies 53: 118. ♀, gall.
- Biology: Burdick, 1967. Pan-Pacific Ent. 43: 227-231.
- chrysolepidicola* var. *garryanae*** (Kinsey). Oreg. Ecology: Produce stem galls on *Quercus garryana*.
- Plagiotrichus* (!) *chrysolepidicola* var. *garryanae* Kinsey, 1922. Ind. Univ. Studies 53: 121. ♀, gall.
- chrysolepidicola* var. *pugnoides*** (Kinsey). Calif. Ecology: Produce stem galls on *Quercus lobata*.
- Plagiotrichus* (!) *chrysolepidicola* var. *pugnoides* Kinsey, 1922. Ind. Univ. Studies 53: 120. ♀, gall.
- chrysolepidicola* var. *pugnus*** (Kinsey). Calif. Ecology: Produce stem galls on *Quercus lobata*.
- Plagiotrichus* (!) *chrysolepidicola* var. *pugnus* Kinsey, 1922. Ind. Univ. Studies 53: 120. ♀, gall.
- cinnamomeus*** Ashmead. Fla. Ecology: Produce bud galls on *Quercus chapmani*.
- Andricus cinnamomeus* Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 137. ♀, gall.
- Andricus calycicola* Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 141. ♀, gall.
- confertus*** McCracken and Egbert. Calif. Ecology: Produce leaf galls on *Quercus lobata*.
- Andricus confertus* McCracken and Egbert, 1922. Stanford Univ., Pubs., Univ. Ser., Biol. Sci. 3 (1): 32. ♀, gall.
- coortus*** Weld. Calif. Ecology: Produce stem galls on *Quercus douglasii*, *Q. dumosa*.
- Andricus coortus* Weld, 1944. U. S. Natl. Mus., Proc. 95: 8. ♀, gall.
- coronus*** Beutenmueller. N. Y., D. C., Va., Ga., Ala. Ecology: Produce stem galls on *Quercus palustris*, *Q. phellos*.
- Andricus coronus* Beutenmueller, 1907. Amer. Mus. Natl. Hist., Bul. 23: 464. ♀, gall.
- costatus*** Weld. Colo., N. Mex., Ariz. Ecology: Produce acorn galls on *Quercus fendleri*, *Q. gambelii*, *Q. subtorbinella*.
- Andricus costatus* Weld, 1944. U. S. Natl. Mus., Proc. 95: 9. ♀, gall.
- crassicornis*** (Ashmead). Fla. Ecology: Produce leaf galls on *Quercus* sp.
- Callirhytis crassicornis* Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 130. ♀, gall.
- crenatus*** Weld. Calif. Ecology: Produce leaf galls on *Quercus dumosa*, *Q. douglasii*.
- Andricus crenatus* Weld, 1952. U. S. Natl. Mus., Proc. 102: 330. ♀, gall.
- crystallinus*** Bassett. Calif. Ecology: Produce leaf galls on *Quercus douglasii*, *Q. dumosa*, *Q. garryana*.
- Andricus crystallinus* Bassett, 1900. Amer. Ent. Soc., Trans. 26: 319. ♀, gall. Agamic gen.
- Biology: Douth, 1960. Pan-Pacific Ent. 36: 167-170 (female, male, gall; sexual gen. on leaves of *Quercus douglasii*).
- deciduatus*** Weld. Ill. Ecology: Produce bud galls on *Quercus bicolor*.
- Andricus deciduatus* Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 72. ♀, gall.
- discalis*** (Weld). N. Mex., Ariz. Ecology: Produce leaf galls on *Quercus subtorbinella*.
- Diplolepis discalis* Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 24. ♀, gall.
- discularis*** (Weld). Calif. Ecology: Produce leaf galls on *Quercus garryana*.
- Diplolepis discularis* Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 25. ♀, gall.
- ellipsoidalis*** (Weld). Va. Ecology: Produce bud galls on *Quercus falcata*, *Q. palustris*.
- Amphibolips ellipsoidalis* Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 105. ♀, gall.
- femoratus*** Ashmead. Fla. Ecology: Produce leaf galls on *Quercus laurifolia*, *Q. phellos*.
- Andricus femoratus* Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 141. ♀, gall.
- fimbrialis*** Weld. Calif. Ecology: Produce leaf galls on *Quercus douglasii*, *Q. dumosa*, *Q. lobata*.
- Andricus fimbrialis* Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 74. ♀, ♂, gall.
- flavohirtus*** Beutenmueller. N. J., Ill. Ecology: Produce bud galls on *Quercus bicolor*.
- Andricus flavohirtus* Beutenmueller, 1913. Insector Inscitiae Menstruus 1: 124. ♀, gall.

- foliaformis** Gillette. N. Y., Mich., Ill., Ariz. Ecology: Produce leaf galls on *Quercus alba*, *Q. bicolor*, *Q. macrocarpa*.
Andricus foliaformis Gillette, 1888. Mich. State Bd. Agr., Rpt. 27: 471. ♀, gall.
Andricus foliosus Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 76. ♀, ♂, gall.
- Taxonomy:** Weld, 1967. In Krombein and Burks, U. S. Dept. Agr., Agr. Monog. 2, Supp. 2: 283.
- formosalis** Weld. Ariz. Ecology: Produce stem galls on *Quercus emoryi*.
Andricus formosalis Weld, 1944. U. S. Natl. Mus., Proc. 95: 10. ♀, gall.
- fullawayi** Beutenmueller. Calif. Ecology: Produce leaf galls on *Quercus lobata*.
Andricus fullawayi Beutenmueller, 1913. Amer. Ent. Soc., Trans. 39: 244. ♀, gall.
- furnessulus** Weld. Ariz. Ecology: Produce stem galls on *Quercus arizonica*, *Q. oblongifolia*.
Andricus furnessulus Weld, 1944. U. S. Natl. Mus., Proc. 95: 12. ♀, gall.
- howertoni** Bassett. N. Mex., Ariz. Ecology: Produce stem galls on *Quercus subtorbinella*.
Andricus Howertoni Bassett, 1890. Amer. Ent. Soc., Trans. 17: 82. ♀, gall.
- ignotus** (Bassett). Mass., Conn., Ill., Minn. Ecology: Produce leaf galls on *Quercus bicolor*, *Q. macrocarpa*.
Cynips ignota Bassett, 1881. Canad. Ent. 13: 106. ♀, gall.
- incertus** Bassett. Conn., Ill. Ecology: Produce acorn galls on *Quercus bicolor*.
Andricus incertus Bassett, 1900. Amer. Ent. Soc., Trans. 26: 317. ♀.
Andricus fimbriatus Weld, 1922. U. S. Natl. Mus., Proc. 61 (19): 29. ♀, gall.
- incognitus** Weld. Conn. Ecology: Produce leaf galls on *Quercus stellata*.
Andricus ignotus Bassett, 1900. Amer. Ent. Soc., Trans. 26: 317. ♀. Preocc. by Bassett, 1881.
Andricus incognitus Weld, 1951. U. S. Dept. Agr., Agr. Monog. 2: 634. N. name.
- indistinctus** Bassett. Ohio. Ecology: Produce stem galls on *Quercus alba*.
Andricus indistinctus Bassett, 1890. Amer. Ent. Soc., Trans. 17: 81. ♀, gall.
- kingi** Bassett. Calif. Ecology: Produce leaf galls in agamic and sexual generations on *Quercus douglasii*, *Q. dumosa*, *Q. garryana*, *Q. lobata*.
Andricus Kingi Bassett, 1900. Amer. Ent. Soc., Trans. 26: 316. ♀, gall. Agamic gen.
Andricus pistillaris Trotter, 1910. Lab. Zool. Gen. e Agr. Portici, Bol. 5: 117. ♀, gall.
Liodora dumosae Weld, 1957. U. S. Natl. Mus., Proc. 107: 111. ♀, ♂, gall. Sexual gen.
- Taxonomy:** Rosenthal and Koehler, 1971. Ent. Soc. Amer., Ann. 64: 565-570.
- lasius** (Ashmead). Ariz., Calif. Ecology: Produce leaf galls on *Quercus chrysolepis*, *Q. wilcoxii*.
Callirhytis lasius Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 132. ♀, gall.
- lasius** var. **areolaris** Kinsey. Calif.
Andricus lasius var. *areolaris* Kinsey, 1922. Ind. Univ. Studies 53: 19. ♀, gall.
- lasius** var. **sublasius** Kinsey. Calif.
Andricus lasius var. *sublasius* Kinsey, 1922. Ind. Univ. Studies 53: 19. ♀, gall.
- mamillaformis** (Weld). Md., Va., N. C., Ill. Ecology: Produce bud galls on *Quercus alba*.
Callirhytis mamillaformis Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 96. ♀, gall.
- maxwelli** Bassett. Tex. Ecology: Produce twig galls on *Quercus* sp.
Andricus Maxwelli Bassett, 1890. Amer. Ent. Soc., Trans. 17: 83. ♀, ♂, gall.
- mendocinensis** Weld. Calif. Ecology: Produce subterranean galls, probably on the roots, on *Lithocarpus densiflora*, the tanbark oak.
Andricus mendocinensis Weld, 1957. U. S. Natl. Mus., Proc. 107: 112. ♀, gall.
- montezuma** Beutenmueller. Ariz.; Mexico. Ecology: Produce stem galls on *Quercus arizonica*, *Q. oblongifolia*, *Q. reticulata*, *Q. toumeyii*.
Andricus montezumae Beutenmueller, 1913. Amer. Ent. Soc., Trans. 39: 243. ♀.
- Taxonomy:** Kinsey, 1920. Amer. Mus. Nat. Hist., Bul. 42: 306 (gall).
- multicostatus** Weld. Ariz. Ecology: Produce bud galls on *Quercus subtorbinella*.
Andricus multicostatus Weld, 1952. U. S. Natl. Mus., Proc. 102: 331. ♀, gall.
- murtfeldtae** Ashmead. N. J. to S. C., w. to Mo., Tex. Ecology: Produce bud galls on *Quercus stellata*.
Andricus murtfeldtae Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 117. ♂, gall.

- Taxonomy:** Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 78 (female).
- occultatus** (Weld). Calif. Ecology: Produce bud galls on *Quercus douglasii*, *Q. dumosa*, *Q. lobata*.
- Diplolepis occultatus* Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 28. ♀, gall.
- opertus** (Weld). Calif. Ecology: Produce bud galls on *Quercus douglasii*, *Q. lobata*.
- Callirhytis nigra* Fullaway, 1911. Ent. Soc. Amer., Ann. 4: 362. ♀. Preocc. by Tavares, 1902. Gall described originally for *nigra* Fullaway is another sp.
- Diplolepis operta* Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 29. ♀, gall.
- Andricus nigradius* Weld, 1944. U. S. Natl. Mus., Proc. 95: 11. N. name for *nigra* Fullaway.
- parmula** Bassett. Calif. Ecology: Produce leaf galls on *Quercus douglasii*, *Q. dumosa*, *Q. engelmanni*, *Q. garryana*, *Q. lobata*.
- Andricus parmula* Bassett, 1900. Amer. Ent. Soc., Trans. 26: 312. ♀, gall.
- Dryophanta discus* Bassett, 1900. Amer. Ent. Soc., Trans. 26: 326. ♀, gall.
- pattersonae** Fullaway. Wash., Calif. Ecology: Produce leaf galls on *Quercus douglasii*, *Q. dumosa*, *Q. garryana*, *Q. lobata*.
- Andricus pattersonae* Fullaway, 1911. Ent. Soc. Amer., Ann. 4: 352. ♀, gall.
- pattoni** (Bassett). Conn. to Fla., w. to Okla., Tex. Ecology: Produce leaf galls on *Quercus stellata*.
- Cynips pattoni* Bassett, 1881. Canad. Ent. 13: 98. ♀, gall.
- pilula** Bassett. Utah. Ecology: Produce leaf galls on *Quercus gambelii*.
- Andricus (Callirhytis) pilula* Bassett, 1890. Amer. Ent. Soc., Trans. 17: 77. ♀, gall.
- Taxonomy:** Weld, 1952. U. S. Natl. Mus., Proc. 102: 332 (male).
- pilularis** Weld. Ariz. Ecology: Produce leaf galls on *Quercus arizonica*, *Q. gambelii*, *Q. oblongifolia*, *Q. reticulata*, *Q. subturbinella*, *Q. toameyi*.
- Andricus pilularis* Weld, 1952. U. S. Natl. Mus., Proc. 102: 333. ♀, ♂, gall.
- pisiformis** Beutenmueller. N. J., Md., Va., Fla., Ill. Ecology: Produce bud galls on *Quercus alba*, *Q. bicolor*.
- Andricus pisiformis* Beutenmueller, 1911. Ent. News 22: 70. ♀, gall.
- prescottii** Weld. Ariz. Ecology: Produce acorn galls on *Quercus arizonica*, *Q. gambelii*, *Q. oblongifolia*, *Q. reticulata*, *Q. subturbinella*.
- Andricus prescottii* Weld, 1952. U. S. Natl. Mus., Proc. 102: 331. ♀, gall.
- projectus** Weld. Oreg. Ecology: Produce bud galls on *Quercus chrysolepis*.
- Andricus projectus* Weld, 1952. U. S. Natl. Mus., Proc. 102: 329. ♀, gall.
- pulchellus** Bassett. Conn. Ecology: Probably produce stem or leaf galls on *Quercus prinoides*.
- Andricus pulchellus* Bassett, 1900. Amer. Ent. Soc., Trans. 26: 314. ♀.
- quercuscalifornicus** (Bassett). Wash., Oreg., Calif. Ecology: Produce stem galls on *Quercus douglasii*, *Q. dumosa*, *Q. engelmanni*, *Q. garryana*, *Q. lobata*.
- Cynips q. californicus* Bassett, 1881. Canad. Ent. 13: 51. ♀, gall.
- Andricus (Callirhytis) californicus* Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 294.
- Andricus spongiola* Gillette, 1894. Canad. Ent. 26: 235. ♀, gall.
- Andricus californicus* var. *fructiformis* Kinsey, 1922. Ind. Univ. Studies 53: 12. ♀, gall.
- Andricus californicus* var. *intermedius* Kinsey, 1922. Ind. Univ. Studies 53: 14. ♀, gall.
- quercusflocci** (Walsh). Mass. to N. C., w. to Mich., Ill., Mo., Ark. Ecology: Produce leaf galls on *Quercus alba*.
- Cynips quercus flocci* Walsh, 1864. Ent. Soc. Phila., Proc. 2: 482. ♀, gall.
- Cynips (Andricus?) flocci* Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 348, 352.
- Taxonomy:** Fitch, 1859 (1858). N. Y. State Agr. Soc., Trans. 18: 814 (gall).
- quercusfoliatus** (Ashmead). Ga., Fla., Ala., Miss., Tex. Ecology: Produce bud galls on *Quercus virginiana*.
- Cynips q. foliata* Ashmead, 1881. Amer. Ent. Soc., Trans. 9: Proc. p. xii. ♀, gall.
- Andricus (Andricus) foliatus* Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 295.
- quercusformosus** (Bassett). Conn. s. to Fla., w. to Ill., Mo. Ecology: Produce stem galls on *Quercus cinerea*, *Q. coccinea*, *Q. marilandica*, *Q. phellos*, *Q. rubra*.
- Cynips q. formosa* Bassett, 1864. Ent. Soc. Phila., Proc. 3: 679. ♀, gall.
- Cynips formosa* Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 341, 345, 349.

- Cynips q. capsuala* Ashmead, 1885. Amer. Ent. Soc., Trans. 12: Proc. p. ix ♀, gall.
quercuslanigera (Ashmead). Ga., Fla., Ala., Miss., La., Tex. Ecology: Produce leaf galls on *Quercus virginiana*.
Cynips q. lanigera Ashmead, 1881. Amer. Ent. Soc., Trans. 9: Proc. p. xiii ♀, gall.
Andricus (Andricus) lanigera Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 295.
quercusostensackenii (Bassett). Conn. to Va., w. to Ill. Ecology: Produce leaf galls on *Quercus coccinea*, *Q. palustris*.
Cynips q. Osten Sackenii Bassett, 1863. Ent. Soc. Phila., Proc. 2: 327. ♀, ♂, gall.
Cynips Osten Sackenii Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 345, 348, 355.
quercuspetiolicola (Bassett). Mass. to Va., w. to Tenn., Mo. Ecology: Produce leaf galls on *Quercus alba* and other white oaks.
Cynips q. petiolicola Bassett, 1863. Ent. Soc. Phila., Proc. 2: 325. ♀, ♂, gall.
Cynips (Andricus) petiolicola Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 339, 346, 349.
Andricus quinqueseptum Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 299. ♂, gall.
Andricus cicatricula Bassett, 1890. Amer. Ent. Soc., Trans. 17: 80. ♀, ♂, gall.
Andricus concolorans Kinsey, 1920. Amer. Mus. Nat. Hist., Bul. 42: 302. ♀, ♂, gall.
quercussingularis (Bassett). Maine, Que. s. to N. C. Ecology: Produce leaf galls on *Quercus rubra*.
Cynips q. singularis Bassett, 1863. Ent. Soc. Phila., Proc. 2: 326. ♀, ♂, gall.
Cynips singularis Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 345, 348, 355.
quercusutriculus (Bassett). Conn. to Fla., w. to Ill. Ecology: Produce leaf galls on *Quercus alba*, *Q. chapmani*, *Q. stellata*.
Cynips q. utricula Bassett, 1881. Canad. Ent. 13: 78. ♀, ♂, gall.
Andricus (Andricus) utriculus Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 295.
Andricus pruinosis Bassett, 1900. Amer. Ent. Soc., Trans. 26: 311. ♀, gall.
reniformis McCracken and Egbert. Calif. Ecology: Produce stem galls on *Quercus chrysolepis*, *Q. vaccinifolia*.
Andricus reniformis McCracken and Egbert, 1922. Stanford Univ., Pubs., Univ. Ser., Biol. Sci. 3 (1): 31. ♀, gall.
reticulatus Bassett. N. Mex., Ariz. Ecology: Produce leaf galls on *Quercus arizonica*, *Q. gambelii*, *Q. oblongifolia*, *Q. reticulata*, *Q. subturbinella*, *Q. toumeyi*.
Andricus (Callirhytis) reticulata Bassett, 1890. Amer. Ent. Soc., Trans. 17: 74. ♀, gall.
rhizoxenus (Ashmead). Ariz. Ecology: Produce stem galls on *Quercus reticulata*.
Callirhytis rhizoxenus Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 132. ♀, gall.
robustus Weld. D. C., Va. to Fla., w. to Mo., Ark., Tex. Ecology: Produce leaf galls on *Quercus stellata*.
Andricus robustus Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 81. ♀, gall.
rugatus Weld. Mo., Ark. Ecology: Produce leaf galls on *Quercus lyrata*.
Andricus rugatus Weld, 1926. U. S. Natl. Mus., Proc. 68(10): 82. ♀, gall.
ruginosus Bassett. N. Mex., Ariz. Ecology: Produce stem galls on *Quercus fendleri*, *Q. gambelii*.
Andricus (Callirhytis) ruginosus Bassett, 1890. Amer. Ent. Soc., Trans. 17: 75. ♀, gall.
scutella Weld. Ariz. Ecology: Produce leaf galls on *Quercus gambelii*, *Q. subturbinella*.
Andricus sentella Weld, 1930. Ent. Soc., Wash., Proc. 32: 29. ♀, gall.
spectabilis Kinsey. Calif. Ecology: Produce stem galls on *Quercus chrysolepis*.
Andricus spectabilis Kinsey, 1922. Amer. Mus. Nat. Hist., Bul. 46: 289. ♀, gall.
spectabilis var. *incisus* Kinsey. Calif.
Andricus spectabilis var. *incisus* Kinsey, 1922. Ind. Univ. Studies 53: 45. ♀.
spectabilis var. *ukiahensis* Kinsey. Calif.
Andricus spectabilis var. *ukiahensis* Kinsey, 1922. Ind. Univ. Studies 53: 46. ♀.
spicatus (Bassett). Ariz. Ecology: Produce stem galls on *Quercus arizonica*, *Q. oblongifolia*, *Q. toumeyi*.
Loxaulus spicatus Bassett, 1900. Amer. Ent. Soc., Trans. 26: 329. ♀, gall.
splendens Weld. Ariz. Ecology: Produce leaf galls on *Quercus grisea*, *Q. subturbinella*.
Andricus splendens Weld, 1919. Canad. Ent. 51: 254. ♀, gall.

- stellaris** Weld. Calif. Ecology: Produce leaf galls on *Quercus douglasii*, *Q. garryana*.
Andricus stellaris Weld, 1926. U. S. Natl. Mus., Proc. 68(10): 84. ♀, gall.
- stramineus** Weld. Ariz. Ecology: Produce stem galls on *Quercus oblongifolia*.
Andricus stramineus Weld, 1944. U. S. Natl. Mus., Proc. 95: 13. ♀, gall.
- stropus** Ashmead. Va. to Fla., w. to Mo., Ark., Tex. Ecology: Produce bud galls on *Quercus stellata*.
Andricus stropus Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 136. ♀, gall.
Andricus atropus (!) Ashmead, 1910. In Smith, N. J. State Mus. Rpt. for 1909, p. 602.
- sulfureus** (Weld). Ariz. Ecology: Produce leaf galls on *Quercus arizonica*, *Q. oblongifolia*.
Diptolepis sulfureus Weld, 1926. U. S. Natl. Mus., Proc. 68 (10); 33. ♀, gall.
- tecturnarum** Kinsey. N. Mex., Ariz. Ecology: Produce leaf galls on *Quercus arizonica*, *Q. gambelii*, *Q. oblongifolia*, *Q. subturbinella*, *Q. toumeyi*.
Andricus tecturnarum Kinsey, 1920. Amer. Mus. Nat. Hist., Bul. 42: 312. ♀, gall.
- tenuicornis** (Bassett). Ariz. Ecology: Produce leaf galls on *Quercus arizonica*.
Cynips tenuicornis Bassett, 1881. Canad. Ent. 13: 92. ♀, gall.
- toumeyi** Weld. N. Mex., Ariz. Ecology: Produce stem galls on *Quercus subturbinella*, *Q. toumeyi*.
Andricus toumeyi Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 85. ♀, gall.
- tubalis** Weld. Ariz. Ecology: Produce stem galls on *Quercus arizonica*, *Q. oblongifolia*.
Andricus tubalis Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 86. ♀, gall.
- tubularius** Weld. N. Mex., Ariz. Ecology: Produce stem galls on *Quercus subturbinella*.
Andricus tubularius Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 87. ♀, gall.
- verensis** Weld. Calif. Ecology: Produce bud galls on *Quercus dumosa*, *Q. garryana*.
Andricus verus Weld, 1944. U. S. Natl. Mus., Proc. 95: 13. ♀, gall. Preocc. by Bassett, 1900.
Andricus verensis Weld, 1951. U. S. Dept. Agr., Agr. Monog. 2: 636. N. name.
- vernus** (Bassett). Conn. Ecology: Specimen collected ovipositing in buds of *Quercus ilicifolia*.
Amphibolips verna Bassett, 1900. Amer. Ent. Soc., Trans. 26: 321. ♀.
- wheeleri** Beutenmueller. N. Mex., Ariz. Ecology: Produce stem galls on *Quercus arizonica*, *Q. oblongifolia*, *Q. subturbinella*, *Q. toumeyi*.
Andricus wheeleri Beutenmueller, 1907. Amer. Mus. Nat. Hist., Bul. 23: 464. ♀, gall.
- wiltzæ** Fullaway. Calif. Ecology: Produce stem galls on *Quercus dumosa*, *Q. lobata*.
Andricus wiltzæ Fullaway, 1911. Ent. Soc. Amer., Ann. 4: 353. ♀, gall.

Genus BESBICUS Kinsey

- Cynips* subg. *Besbicus* Kinsey, 1930. Gall wasp genus *Cynips*, p. 222.
 Type-species: *Cynips (Besbicus) multipunctata* var. *conspicua* Kinsey. Orig. desig.
- conspicuus** (Kinsey). Calif. Ecology: Produce stem galls on *Quercus douglasii*, *Q. lobata*.
Cynips (Besbicus) multipunctata var. *conspicua* Kinsey, 1930. Gall wasp genus *Cynips*, p. 229. ♀, gall.
Cynips conspicua Kinsey, 1936. Origin of higher categories in *Cynips*, p. 42.
- heldæ** (Fullaway). Calif. Ecology: Produce leaf galls on *Quercus lobata*.
Cynips heldæ Fullaway, 1911. Ent. Soc. Amer., Ann. 4: 345. ♀, gall.
- indictus** (Kinsey). Calif. Ecology: Produce leaf galls on *Quercus douglasii*.
Cynips (Besbicus) multipunctata var. *indicta* Kinsey, 1930. Gall wasp genus *Cynips*, p. 228. ♀, gall.
Cynips (Besbicus) indicta Kinsey, 1936. Origin of higher categories in *Cynips*, p. 324.
- leachii** (Kinsey). Calif. Ecology: Produce leaf galls on *Quercus garryana*.
Cynips (Besbicus) mirabilis var. *leachii* Kinsey, 1930. Gall wasp genus *Cynips*, p. 238. ♀, gall.
Cynips (Besbicus) leachii Kinsey, 1936. Origin of higher categories in *Cynips*, p. 325.
- maculosus** (Weld). Calif. Ecology: Produce leaf galls on *Quercus dumosa*.
Cynips maculosa Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 63. ♀, gall.

- mirabilis** (Kinsey). B. C., Wash., Oreg. Ecology: Produce leaf galls in agamic generation, bud galls in sexual generation, on *Quercus garryana*.
Cynips mirabilis Kinsey, 1922. Ind. Univ. Studies 53: 50. ♀, gall.
 Biology: Evans, 1967. Canad. Ent. 99: 187-196.
- multipunctatus** (Beutenmueller). Calif. Ecology: Produce leaf galls on *Quercus douglasii*.
Dryophanta multipunctata Beutenmueller, 1911. Ent. News 22: 67. ♀, gall.
- tritior** (Kinsey). Calif. Ecology: Produce leaf galls on *Quercus dumosa*, *Q. durata*.
Cynips (*Besbicus*) *maculosa* var. *tritior* Kinsey, 1930. Gall wasp genus *Cynips*, p. 235. ♀, gall.
Cynips (*Besbicus*) *tritior* Kinsey, 1936. Origin of higher categories in *Cynips*, p. 325.

Genus ATRUSCA Kinsey

- Cynips* subg. *Atrusca* Kinsey, 1930. Gall wasp genus *Cynips*, p. 276.
 Type-species: *Cynips* (*Atrusca*) *dugesi* var. *simulatrix* Kinsey. Orig. desig.
- aggregata** (Weld). Ariz. Ecology: Produce stem galls on *Quercus arizonica*, *Q. oblongifolia*, *Q. toumeyi*.
Diptolepis aggregata Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 15. ♀, gall.
- bella** (Bassett). N. Mex., Ariz. Ecology: Produce leaf galls on *Quercus arizonica*, *Q. oblongifolia*, *Q. reticulata*, *Q. subturbinella*, *Q. toumeyi*.
Cynips bella Bassett, 1881. Canad. Ent. 13: 93. ♀, gall.
Holcaspis maculipennis Gillette, 1894. Canad. Ent. 26: 236. ♀, gall.
- brevipennata** (Gillette). Colo. Ecology: Produce leaf galls on *Quercus fendleri*, *Q. gambelii*, *Q. subturbinella*.
Holcaspis brevipennata Gillette, 1893. Ent. News 4: 31. ♀, gall.
Andricus pellucidus Kinsey, 1920. Amer. Mus. Nat. Hist., Bul. 42: 309. ♀, gall.
- capronae** (Weld). Ariz. Ecology: Produce leaf galls on *Quercus subturbinella*.
Diptolepis capronae Weld, 1930. Ent. Soc. Wash., Proc. 32: 29. ♀, gall.
- catena** (Kinsey). Tex. Ecology: Produce leaf galls on *Quercus grisea*.
Cynips catena Kinsey, 1936. Origin of higher categories in *Cynips*, p. 102. ♀, gall.
- cava** (Weld). Tex. Ecology: Produce leaf galls on *Quercus brevifolia*.
Diptolepis cava Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 22. ♀, gall.
- clivorum** (Kinsey). Ohio. Ecology: Produce leaf galls on *Quercus stellata*.
Cynips (*Atrusca*) *centricola* var. *clivorum* Kinsey, 1930. Gall wasp genus *Cynips*, p. 300. ♀, gall.
Cynips clivorum Kinsey, 1936. Origin of higher categories in *Cynips*, p. 181.
- congesta** (Kinsey). Tex. Ecology: Produce leaf galls on *Quercus grisea*.
Cynips (*Atrusca*) *bella* var. *congesta* Kinsey, 1930. Gall wasp genus *Cynips*, p. 292. ♀, gall.
Cynips congesta Kinsey, 1936. Origin of higher categories in *Cynips*, p. 171.
- cubitalis** (Kinsey). Colo. Ecology: Produce leaf galls on *Quercus gambelii*.
Cynips (*Atrusca*) *cubitalis* Kinsey, 1936. Origin of higher categories in *Cynips*, p. 107. ♀, gall.
- pupoides** (Kinsey). Tex. Ecology: Produce leaf galls on *Quercus grisea*.
Cynips (*Atrusca*) *dugesi* var. *pupoides* Kinsey, 1930. Gall wasp genus *Cynips*, p. 284. ♀, gall.
Cynips pupoides Kinsey, 1936. Origin of higher categories in *Cynips*, p. 92.
- quercuscentricola** (Osten Sacken). N. J. s. to N. C., w. to Mo., Ark., Tex. Ecology: Produce leaf galls on *Quercus stellata*.
Cynips quercuscentricola Osten Sacken, 1861. Ent. Soc. Phila., Proc. 1: 58. ♀, gall.
Cynips centricola Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 339, 345, 347.
Cynips quercus-rubrae Karsch, 1880. Ztschr. f. Gesam. Naturw. 53: 293. ♀, gall.
- simulatrix** (Kinsey). N. Mex., Ariz. Ecology: Produce leaf galls on *Quercus arizonica*, *Q. gambelii*, *Q. grisea*, *Q. oblongifolia*, *Q. undulata*.
Cynips (*Atrusca*) *dugesi* var. *simulatrix* Kinsey, 1930. Gall wasp genus *Cynips*, p. 280. ♀, gall.
Cynips simulatrix Kinsey, 1936. Origin of higher categories in *Cynips*, p. 131.

strians (Kinsey). Ill. Ecology: Produce leaf galls on *Quercus stellata*.

Cynips (Atrusca) centricola var. *strians* Kinsey, 1930. Gall wasp genus *Cynips*, p. 304. ♀, gall.

Cynips strians Kinsey, 1936. Origin of higher categories in *Cynips*, p. 181.

subnigra (Kinsey). N. Mex. Ecology: Produce leaf galls on *Quercus grisea*.

Cynips (Atrusca) subnigra Kinsey, 1936. Origin of higher categories in *Cynips*, p. 140. ♀, gall.

vanescens (Kinsey). Ariz. Ecology: Produce leaf galls on *Quercus grisea*.

Cynips (Atrusca) bella var. *vanescens* Kinsey, 1930. Gall wasp genus *Cynips*, p. 292. ♀, gall.

Cynips vanescens Kinsey, 1936. Origin of higher categories in *Cynips*, p. 178.

Genus DISHOLCASPIS Dalla Torre and Kieffer

Holcaspis Mayr, 1881. Zwanzig. Jahresber. Comm.-Oberrealsch. I. Bez. Wien. p. 35. *toumeyii*.

Type-species: *Cynips globulus* Fitch. Desig. by Ashmead, 1903.

Disholcaspis Dalla Torre and Kieffer, 1910. Das Tierreich, v. 24, p. 371. N. name.

Known only from agamic females emerging in the late fall from oak galls. The sexual generation for these species is unknown, or at least unrecognized. Members of this genus are known from North America only.

Revision: Beutenmueller, 1909. Amer. Mus. Nat. Hist., Bul. 26: 29-45.

acetabula Weld. Colo. Ecology: Produce root galls on *Quercus gambelii*, *Q. reticulata*, *Q. subturbinella*, *Q. toumeyii*.

Disholcaspis acetabula Weld, 1921. U. S. Natl. Mus., Proc. 59: 194. ♀, gall.

bassetti (Gillette). Ohio, Mich., Ill. Ecology: Produce stem galls on *Quercus bicolor*, *Q. macrocarpa*.

Holcaspis bassetti Gillette, 1888. Mich. State Bd. Agr., Rpt. 27: 472. ♀, gall.

brevinota Weld. Tex. Ecology: Produce root galls on *Quercus brevilooba*.

Disholcaspis brevinota Weld, 1921. U. S. Natl. Mus., Proc. 59: 197. ♀, gall.

canescens (Bassett). Calif. Ecology: Produce stem galls on *Quercus douglasii*, *Q. dumosa*, *Q. lobata*.

Holcaspis canescens Bassett, 1890. Amer. Ent. Soc., Trans. 17: 66. ♀, gall.

chrysolepidis (Beutenmueller). Calif. Ecology: Produce twig galls on *Quercus chrysolepis*.

Holcaspis chrysolepidis Beutenmueller, 1911. Ent. News 22: 68. ♀, gall.

cinerosa (Bassett). Tex. Ecology: Produce stem galls on *Quercus virginiana*.

Cynips cinerosa Bassett, 1881. Canad. Ent. 13: 10. ♀, gall.

colorado (Gillette). Colo. Ecology: Produce stem galls on *Quercus* sp., prob. *Q. gambelii*.

Holcaspis colorado Gillette, 1893. Ent. News 4: 210. ♀, gall.

conalis Weld. Calif. Ecology: Produce stem galls on *Quercus garryana*.

Disholcaspis conalis Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 37. ♀, gall.

corallina (Bassett). Calif. Ecology: Produce stem galls on *Quercus douglasii*.

Holcaspis corallina Bassett, 1890. Amer. Ent. Soc., Trans. 17: 66. ♀, gall.

eldoradensis (Beutenmueller). Wash., Oreg., Calif. Ecology: Produce stem galls on *Quercus dumosa*, *Q. garryana*, *Q. lobata*.

Holcaspis eldoradensis Beutenmueller, 1909. Amer. Mus. Nat. Hist., Bul. 26: 38. ♀, gall.

edura Weld. Ariz. Ecology: Produce stem galls on *Quercus arizonica*, *Q. oblongifolia*, *Q. reticulata*.

Disholcaspis edura Weld, 1957. U. S. Natl. Mus., Proc. 107: 113. ♀, gall.

fungiformis Kinsey. Tex. Ecology: Produce stem galls on *Quercus virginiana*.

Disholcaspis fungiformis Kinsey, 1920. Amer. Mus. Nat. Hist., Bul. 42: 312. ♀, gall.

globosa Weld. N. Y., Va., Ill., Okla. Ecology: Produce root galls on *Quercus alba*.

Disholcaspis globosa Weld, 1921. U. S. Natl. Mus., Proc. 59: 196. ♀, gall.

heynei Kieffer. Tex.

Disholcaspis heynei Kieffer, 1910. Lab. Zool. Gen. e. Agr. Portici, Bol. 4: 113. ♀.

- lacuna** Weld. Ariz. Ecology: Produce root galls on *Quercus gambelii*.
Disholcaspis lacuna Weld, 1921. U. S. Natl. Mus., Proc. 59: 195. ♀, gall.
- mamillana** Weld. Calif. Ecology: Produce stem galls on *Quercus douglasii*.
Disholcaspis mamillana Weld, 1957. U. S. Natl. Mus., Proc. 107: 115. ♀, gall.
- mellifica** Weld. Calif. Ecology: Produce stem galls on *Quercus garryana*.
Disholcaspis mellifica Weld, 1957. U. S. Natl. Mus., Proc. 107: 114. ♀, gall.
- pattersoni** Kinsey. Tex. Ecology: Produce stem galls on *Quercus breviloba*.
Disholcaspis pattersoni Kinsey, 1922. Ind. Univ. Studies 53: 78. ♀, gall.
- pedunculoides** Weld. N. Mex., Ariz. Ecology: Produce acorn galls on *Quercus arizonica*, *Q. oblongifolia*, *Q. subtorbinella*.
Disholcaspis pedunculoides Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 39. ♀, gall.
- perniciosa** (Bassett). Colo., N. Mex., Utah, Ariz. Ecology: Produce stem galls on *Quercus fendleri*, *Q. gambelii*.
Holcaspis perniciosa Bassett, 1890. Amer. Ent. Soc., Trans. 17: 68. ♀, gall.
Holcaspis monticola Gillette, 1893. Ent. News 4: 30. ♀, gall.
- persimilis** (Ashmead). Miss. Ecology: Produce stem galls on *Quercus* sp.
Holcaspis persimilis Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 126. ♀, gall.
- plumbella** Kinsey. Calif. Ecology: Produce stem galls on *Quercus douglasii*, *Q. dumosa*.
Disholcaspis plumbella Kinsey, 1920. Amer. Mus. Nat. Hist., Bul. 42: 314. ♀, gall.
- prehensa** Weld. Calif. Ecology: Produce stem galls on *Quercus dumosa*.
Disholcaspis prehensa Weld, 1957. U. S. Natl. Mus., Proc. 107: 113. ♀, gall.
- pruniformis** Kinsey. Tex. Ecology: Produce stem galls on *Quercus breviloba*, *Q. laceyi*.
Disholcaspis pruniformis Kinsey, 1920. Amer. Mus. Nat. Hist., Bul. 42: 315. ♀, gall.
- quercusglobulus** (Fitch). Eastern U. S. Ecology: Produce stem galls on *Quercus alba*, *Q. prinoides*, *Q. prinus*.
Callaspidia Quercus-globulus Fitch, 1859 (1858). N. Y. State Agr. Soc., Trans. 18: 810. ♀, gall.
Cynips rugosa Bassett, 1881. Canad. Ent. 13: 100. ♀, gall.
- quercusmamma** (Walsh). Conn. w. to Ill., Minn., Ark., Tex. Ecology: Produce stem galls on *Quercus bicolor*, *Q. macrocarpa*.
Cynips q. mamma Walsh, 1869. Amer. Ent. 1: 102 (footnote). ♀, gall.
Diptolepis q. macrocarpa Karsch, 1880. Ztschr. f. Gesam. Naturw. 53: 291. ♀, gall.
Holcaspis duricoria Mayr, 1881. Zwanzig. Jahresber. Comm.-Oberrealsch. I. Bez. Wien., p. 35. Nom. nud.
Holcaspis ? mamma Cresson, 1887. Synopsis Amer. Hym., p. 179.
Holcaspis duricoria Bassett, 1890. Amer. Ent. Soc., Trans. 17: 64. ♀, gall.
- quercusomnivora** (Ashmead). Fla. Ecology: Produce stem galls on *Quercus chapmani*.
Cynips q. omnivora Ashmead, 1885. Amer. Ent. Soc., Trans. 12: Proc. p. vi. ♀, gall.
Andricus (Andricus) omnivorus Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 295.
- quercussuccinipes** (Ashmead). Fla. Ecology: Produce stem galls on *Quercus virginiana*.
Cynips q. succinipes Ashmead, 1881. Amer. Ent. Soc., Trans. 9: Proc. p. xi. ♀, gall.
Andricus (Andricus) succinipes Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 295.
- quercusvirens** (Ashmead). S. C., Ga., Fla., Miss., La., Tex. Ecology: Produce stem galls on *Quercus virginiana*.
Cynips q. virens Ashmead, 1881. Amer. Ent. Soc., Trans. 9: Proc. p. x. ♀, gall.
Andricus (Andricus) virens Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 295.
Cynips q. ficigera Ashmead, 1885. Amer. Ent. Soc., Trans. 12: Proc. p. vi. ♀, gall.
- rubens** (Gillette). Colo., N. Mex., Ariz. Ecology: Produce stem galls on *Quercus arizonica*, *Q. fendleri*, *Q. gambelii*, *Q. oblongifolia*, *Q. reticulata*, *Q. subtorbinella*, *Q. toumeyii*.
Holcaspis rubens Gillette, 1893. Ent. News 4: 29. ♀, gall.
- sileri** (Bassett). Utah. Ecology: Produce twig galls on *Quercus* sp.
Holcaspis sileri Bassett, 1890. Amer. Ent. Soc., Trans. 17: 67. ♀, gall.
- simulata** Kinsey. Calif. Ecology: Produce stem galls on *Quercus douglasii*, *Q. dumosa*.
Disholcaspis simulata Kinsey, 1922. Ind. Univ. Studies 53: 79. ♀, gall.

- simulata** var. **vancouverensis** Kinsey. Oreg., Calif. Ecology: Produce twig galls on *Quercus garryana*.
Disholcaspis simulata var. *vancouverensis* Kinsey, 1922. Ind. Univ. Studies 53: 81. ♀, gall.
- spissa** Weld. Ariz. Ecology: Produce stem galls on *Quercus arizonica*, *Q. havardi*, *Q. reticulata*, *Q. subturbinella*.
Disholcaspis spissa Weld, 1957. U. S. Natl. Mus., Proc. 107: 114. ♀, gall.
- spongiosa** (Karsch). Ga., Fla., Ala., Mo., Ark., Okla., Tex. Ecology: Produce stem galls on *Quercus chapmani*, *Q. stellata*.
Diptolepis spongiosa Karsch, 1880. Ztschr. f. Gesam. Naturw. 53: 295. ♀, gall.
Cynips q. ficula Bassett, 1881. Canad. Ent. 13: 75. ♀, gall.
- sulcata** (Ashmead). Ariz. Ecology: Produce leaf galls on *Quercus arizonica*, *Q. oblongifolia*, *Q. reticulata*, *Q. subturbinella*, *Q. toumeyi*.
Cynips sulcatus Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 123. ♀, gall.
- terrestris** Weld. Va., N. C., Fla., Ala., Mo., Ark., Tex. Ecology: Produce root galls on *Quercus margaretta*, *Q. stellata*.
Disholcaspis terrestris Weld, 1921. U. S. Natl. Mus., Proc. 59: 198. ♀, gall.
- truceensis** (Ashmead). Calif. Ecology: Produce stem galls on *Quercus chrysolepis*, *Q. wilcoxii*.
Holcaspis truceensis Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 127. ♀, gall.
- washingtonensis** (Gillette). Wash., Oreg., Calif. Ecology: Produce twig galls on *Quercus douglasii*, *Q. dumosa*, *Q. garryana*, *Q. lobata*.
Cynips washingtonensis Gillette, 1894. Canad. Ent. 26: 235. ♀, gall.

Genus ANTRON Kinsey

- Cynips* subg. *Antron* Kinsey, 1930. Gall wasp genus *Cynips*, p. 180.
 Type-species: *Cynips (Antron) echinus* var. *schulthessae* Kinsey. Orig. desig.
- acraspiformis** (Weld). N. Mex. Ecology: Produce leaf galls on *Quercus subturbinella*, *Q. toumeyi*.
Diptolepis acraspiformis Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 14. ♀, gall.
- clavuloides** (Kinsey). Calif. Ecology: Produce leaf galls on *Quercus lobata*.
Dryophanta clavula Beutenmueller, 1911. Ent. News 22: 67. ♀, gall. Preocc. in *Cynips* by Osten Sacken, 1865.
Cynips (Antron) teres var. *clavuloides* Kinsey, 1930. Gall wasp genus *Cynips*, p. 215. N. name.
- douglasii** (Ashmead). Calif. Ecology: Produce leaf galls in agamic generation and bud galls in sexual generation on *Quercus douglasii*, *Q. dumosa*, *Q. lobata*.
Holcaspis douglasii Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 127. ♀, gall. Agamic gen.
Dryophanta lobata McCracken and Egbert, 1922. Stanford Univ., Pubs., Univ. Ser., Biol. Sci. 3 (1): 13. ♀, ♂, gall. Sexual gen.
- Taxonomy: Kinsey, 1930. Gall wasp genus *Cynips*, p. 190.
- dumosae** (Kinsey). Calif. Ecology: Produce leaf galls on *Quercus dumosa*.
Cynips (Antron) echinus var. *dumosae* Kinsey, 1930. Gall wasp genus *Cynips*, p. 199. ♀, gall. Agamic gen.
Cynips dumosae Kinsey, 1936. Origin of higher categories in *Cynips*, p. 77.
- magdalenae** Weld. N. Mex. Ecology: Produce leaf galls on *Quercus subturbinella*.
Antron magdalenae Weld, 1957. U. S. Natl. Mus., Proc. 107: 116. ♀, gall.
- pileus** Weld. Ariz. Ecology: Produce stem galls on *Quercus subturbinella*.
Antron pileus Weld, 1952. U. S. Natl. Mus., Proc. 102: 333. ♀, ♂, gall.
- plumbeum** (Weld). Ariz. Ecology: Produce leaf galls on *Quercus arizonica*, *Q. oblongifolia*, *Q. toumeyi*.
Cynips plumbea Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 64. ♀, gall.
- quercusechinus** (Osten Sacken). Calif. Ecology: Produce leaf galls in agamic generation and bud galls in sexual generation on *Quercus douglasii*, *Q. dumosa*, *Q. lobata*.
Cynips quercus echinus Osten Sacken, 1870. Amer. Ent. Soc., Trans. 3: 56. ♀, gall. Agamic gen.

- Cynips echinus* Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 295.
Andricus speciosus Bassett, 1890. Amer. Ent. Soc., Trans. 17: 81. ♀, gall.
Andricus ribes Kinsey, 1922. Ind. Univ. Studies 53: 42. ♀, ♂, gall. Sexual gen.
- quercusechinus** var. **mistum** (Kinsey). Calif. Ecology: Produce leaf galls on *Quercus dumosa*.
Cynips (Antron) *echinus* var. *mista* Kinsey, 1930. Gall wasp genus *Cynips*, p. 200. ♀, gall.
- quercusechinus** var. **schulthessae** (Kinsey). Calif. Ecology: Produce galls on *Quercus douglasii*, *Q. durata*.
Cynips (Antron) *echinus* var. *schulthessae*, agamic form *schulthessae* Kinsey, 1930. Gall wasp genus *Cynips*, p. 202. ♀, gall. Agamic gen.
Cynips (Antron) *echinus* var. *schulthessae*, bisexual form *atrata* Kinsey, 1930. Gall wasp genus *Cynips*, p. 204. ♀, ♂, gall. Sexual gen.
- quercusechinus** var. **vicinum** (Kinsey). Calif. Ecology: Produce galls on *Quercus douglasii*.
Cynips (Antron) *echinus* var. *vicina*, agamic form *vicina* Kinsey, 1930. Gall wasp genus *Cynips*, p. 196. ♀, gall. Agamic gen.
Cynips *vicina*, agamic form *vicina* Kinsey, 1936. Origin of higher categories in *Cynips*, p. 78.
Cynips (Antron) *echinus* var. *vicina*, bisexual form *incepta* Kinsey, 1930. Gall wasp genus *Cynips*, p. 198. ♀, ♂, gall. Sexual gen.
- quercusnubila** (Bassett). Ariz. Ecology: Produce leaf galls on *Quercus arizonica*, *Q. oblongifolia*, *Q. reticulata*, *Q. subturbinella*, *Q. toumeyi*.
Cynips *q. nubila* Bassett, 1881. Canad. Ent. 13: 56. ♀, gall.
Dryophanta nubila Mayr, 1881. Zwanzig. Jahresber. Comm.-Oberrealsch. I. Bez. Wien., p. 39. Nom. nud.
Dryophanta nubila Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 296.
- russum** (Kinsey). Ariz. Ecology: Produce leaf galls on *Quercus arizonica*, *Q. oblongifolia*.
Cynips (*Acraspis*) *nubila* var. *russum* Kinsey, 1930. Gall wasp genus *Cynips*, p. 343. ♀, gall.
Cynips *russum* Kinsey, 1936. Origin of higher categories in *Cynips*, p. 255.

Genus BELONOCNEMA Mayr

- Belonocnema* Mayr, 1881. Zwanzig. Jahresber. Comm.-Oberrealsch. I. Bez. Wien., pp. 4, 16, 38.
 Type-species: *Belonocnema treatae* Mayr. Monotypic.
Dryorhizoxenus Ashmead, 1882 (1881). Amer. Ent. Soc., Trans. 9: Proc. p. xxv.
 Type-species: *Dryorhizoxenus floridanus* Ashmead. Monotypic.
- kinseyi** Weld. Tex. Ecology: Produce leaf galls on *Quercus virginiana*.
Belonocnema kinseyi Weld, 1921. U. S. Natl. Mus., Proc. 59: 241. ♀, gall.
- quercusvirens** (Osten Sacken). Fla. Ecology: Produce pea-shaped leaf galls on *Quercus virginiana*.
Cynips *q. virens* Osten Sacken, 1861. Ent. Soc. Phila., Proc. 1: 57. gall.
Belonocnema fossaria Weld, 1921. U. S. Natl. Mus., Proc. 59: 240. ♀, gall.
- treatae** Mayr. Fla. Ecology: Produce root galls on *Quercus virginiana*.
Belonocnema (!) *Treatae* Mayr, 1881. Zwanzig. Jahresber. Comm.-Oberrealsch. I. Bez. Wien., p. 17, footnote. ♀, gall.
Dryorhizoxenus floridanus Ashmead, 1882 (1881). Amer. Ent. Soc., Trans. 9: Proc. p. xxv. ♀, ♂, gall.

Genus SPHAEROTERAS Ashmead

- Sphaeroterias* Ashmead, 1897. Psyche 8: 67.
 Type-species: *Biorrhiza* (!) *mellea* Ashmead. Monotypic.
- caepuliforme** (Beutenmueller). N. Y., Md., Va., Fla., Ind., Ill., Mo., Ark., Tex. Ecology: Produce root galls on red oaks.
Biorrhiza caepuliformis Beutenmueller, 1911. Ent. News 22: 69. ♀, gall.
- carolina** (Ashmead). N. C., Fla., Mo., Ark., Tex. Ecology: Produce leaf galls on *Quercus alba*, *Q. stellata*.
Dryophanta carolina Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 145. ♀, gall.

- melleum** (Ashmead). Fla. Ecology: Produce leaf galls on *Quercus chapmani*.
Biorhiza mellea Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 128, 138. ♀, gall.
- melleum** var. **albicolens** (Kinsey). Ga. Ecology: Produce leaf galls on *Quercus alba*.
Cynips (Acraspis) mellea var. *albicolens* Kinsey, 1930. Gall wasp genus *Cynips*, p. 336. ♀, gall.
- melleum** var. **anceps** (Kinsey). Tex. Ecology: Produce leaf galls on *Quercus breviloba*.
Cynips (Acraspis) mellea var. *anceps* Kinsey, 1930. Gall wasp genus *Cynips*, p. 323. ♀, gall.
- melleum** var. **bifurcum** (Kinsey). Miss. Ecology: Produce leaf galls on *Quercus stellata*.
Cynips (Acraspis) mellea var. *bifurca* Kinsey, 1930. Gall wasp genus *Cynips*, p. 325. ♀, gall.
- melleum** var. **comptum** (Kinsey). Tex. Ecology: Produce leaf galls on *Quercus stellata*.
Cynips (Acraspis) mellea var. *compta* Kinsey, 1930. Gall wasp genus *Cynips*, p. 322. ♀, gall.
- melleum** var. **concolor** (Kinsey). Fla. Ecology: Produce leaf galls on *Quercus minima*.
Cynips (Acraspis) mellea var. *concolor* Kinsey, 1930. Gall wasp genus *Cynips*, p. 329. ♀, gall.
- melleum** var. **crassior** (Kinsey). Ga. Ecology: Produce leaf galls on *Quercus stellata*.
Cynips (Acraspis) mellea var. *crassior* Kinsey, 1930. Gall wasp genus *Cynips*, p. 335. ♀, gall.
- melleum** var. **litigans** (Kinsey). Ala. Ecology: Produce leaf galls on *Quercus stellata*.
Cynips (Acraspis) mellea var. *litigans* Kinsey, 1930. Gall wasp genus *Cynips*, p. 327. ♀, gall.
- ocala** (Weld). Fla. Ecology: Produce root galls on *Quercus chapmani*.
Biorhiza ocala Weld, 1921. U. S. Natl. Mus., Proc. 59: 207. ♀, ♂, gall.
- rydbergiana** (Cockerell). N. Mex. Ecology: Produce leaf galls on *Quercus rydbergiana*.
Dryophanta rydbergiana Cockerell, 1903. Canad. Ent. 35: 217. ♀, gall.
- texanum** (Ashmead). Tex. Gall unknown.
Dryophanta texana Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 145. ♀.
- trimaculosum** (McCracken and Egbert). Calif. Ecology: Produce leaf galls on *Quercus douglasii*, *Q. dumosa*, *Q. garryana*, *Q. lobata*.
Callirhytis trimaculosa McCracken and Egbert, 1922. Stanford Univ., Pubs., Univ. Ser., Biol. Sci. 3 (1): 41. ♀, gall.
- unicum** (Weld). Mo., Ark., Tex. Ecology: Produce leaf galls on *Quercus stellata*.
Diplolepis unica Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 34. ♀, gall.

Genus ZOPHEROTERAS Ashmead

- Zopheroterases* Ashmead, 1897. Canad. Ent. 29: 261.
 Type-species: *Acraspis vaccinii* Ashmead. Monotypic.
- Paraterases* Ashmead, 1897. Canad. Ent. 29: 262.
 Type-species: *Paraterases hubbardi* Ashmead. Monotypic.
- compressum** (Gillette). Iowa. Ecology: Produce leaf galls on *Quercus rubra*.
Acraspis compressus Gillette, 1891. Ill. State Lab. Nat. Hist., Bul. 3: 197. ♀, gall.
- cuneatum** Weld. Va., Mo., Ark. Ecology: Produce leaf galls on *Quercus alba*.
Zopheroterases cuneatum Weld, 1944. U. S. Natl. Mus., Proc. 95: 14. ♀, gall.
- guttatum** Weld. Va. Ecology: Produce leaf galls on *Quercus palustris*.
Zopheroterases guttatum Weld, 1952. U. S. Natl. Mus., Proc. 102: 334. ♀, gall.
- hubbardi** (Ashmead). Md., Va., N. C., Mich., Ill. Ecology: Produce leaf galls on *Quercus coccinea*, *Q. velutina*.
Paraterases hubbardi Ashmead, 1897. Canad. Ent. 29: 262. ♀.
- sphaerula** Weld. N. C., Ill., Mo. Ecology: Produce leaf galls on *Quercus rubra*.
Zopheroterases sphaerula Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 56. ♀, gall.
- vaccinii** (Ashmead). D. C., Fla. Ecology: Produce leaf galls on *Quercus stellata*.
Acraspis vaccinii Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 136. ♀.

Genus LOXAULUS Mayr

- Loxaulus* Mayr, 1881. Zwanzig. Jahresber. Comm.-Oberrealsch. I. Bez. Wien., pp. 9, 12, 33.
Type-species: *Loxaulus mammula* Mayr. Monotypic.
- Solenozopheria* Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 149.
Type-species: *Solenozopheria vaccinii* Ashmead. Monotypic.
- Compsodryoxenus* Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 128.
Type-species: *Compsodryoxenus maculipennis* Ashmead. Desig. by Ashmead, 1903.
- ashmeadi* Kieffer. United States. Ecology: Produce hardly visible galls in wood of branches of English Oak, *Quercus robur*. Occurs only on introduced English Oaks, so presumably not of North American origin.
- Loxaulus ashmeadi* Kieffer, 1902. Soc. Hist. Nat. Metz., Bul. (2) 10: 4. ♀, gall.
- beutenmuelleri* Weld. N. J., Pa., Ill. Ecology: Produce leaf galls on *Quercus rubra*.
Loxaulus beutenmuelleri Weld, 1957. U. S. Natl. Mus., Proc. 107: 116-117. ♀.
- brunneus* (Ashmead). Calif. Ecology: Produce stem galls on *Quercus chrysolepis*.
Compsodryoxenus brunneus Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 129. ♀, gall.
- brunneus* var. *atrior* (Kinsey). Calif. Ecology: Produce stem galls on *Quercus lobata*.
Compsodryoxenus brunneus var. *atrior* Kinsey, 1922. Ind. Univ. Studies 53: 49. ♀, gall.
- ferrugineus* (Gillette). Iowa.
Chilaspis ferruginea Gillette, 1891. Ill. State Lab. Nat. Hist., Bul. 3: 200. ♀.
- humilis* (Weld). Fla. Ecology: Produce root galls on *Quercus chapmani*, *Q. stellata*.
Compsodryoxenus humilis Weld, 1921. U. S. Natl. Mus., Proc. 59: 190, 236. ♀, gall.
- illinoisensis* (Weld). Ill. Ecology: Produce root galls on *Quercus macrocarpa*.
Compsodryoxenus illinoisensis Weld, 1921. U. S. Natl. Mus., Proc. 59: 191, 234. ♀, gall.
- maculipennis* (Ashmead). Ariz. Ecology: Produce stem galls on live oaks.
Compsodryoxenus maculipennis Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 129. ♀, gall.
- pattersoni* (Kinsey). Tex. Ecology: Produce root galls on *Quercus virginiana*.
Compsodryoxenus pattersoni Kinsey, 1922. Ind. Univ. Studies 53: 49. ♀, gall.
- quercusmammula* (Bassett). Conn., N. J., Md., Va. Ecology: Produce stem galls on *Quercus alba*.
Cynips q. mammula Bassett, 1881. Canad. Ent. 13: 76. ♀, ♂, gall.
- Loxaulus mammula* Mayr, 1881. Zwanzig. Jahresber. Comm.-Oberrealsch. I. Bez. Wien., p. 34.
- tenuis* (Weld). Colo. Ecology: Produce root galls on *Quercus fendleri*.
Compsodryoxenus tenuis Weld, 1921. U. S. Natl. Mus., Proc. 59: 190, 235. ♀, gall.
- trizonalis* Weld. Calif. Ecology: Produce acorn galls in agamic generation and stem galls in sexual generation on *Quercus chrysolepis*.
Loxaulus trizonalis Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 45. ♀, gall (agamic gen.); ♀, ♂ (sexual gen.).
- vaccinii* (Ashmead). Fla. Ecology: Produce stem galls on *Quercus* sp. The original statement that this sp. produced galls on *Vaccinium* was incorrect.
Solenozopheria vaccinii Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 134, 149. ♀.

Genus BASSETTIA Ashmead

- Bassetitia* Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 146.
Type-species: *Bassetitia floridana* Ashmead. Desig. by Ashmead, 1903.
- aquaticae* (Ashmead). Fla. Ecology: Produce stem galls on *Quercus nigra*.
Callirhytis aquaticae Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 144. ♀, gall.
- ceropteroides* (Bassett). Conn. Ecology: Produce stem galls on *Quercus velutina*.
Callirhytis ceropteroides Bassett, 1900. Amer. Ent. Soc., Trans. 26: 324. ♀, gall.
- floridana* Ashmead. Conn. s. to Fla. Ecology: Produce clumps of galls at bases of sprouts on *Quercus chapmani*; also observed to oviposit on *Quercus prinoides*.
Bassetitia floridana Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 147. ♀.
- Dryophanta corrugis* Bassett, 1890. Amer. Ent. Soc., Trans. 17: 71. ♀.
- Taxonomy: Weld, 1952. U. S. Natl. Mus., Proc. 102: 336.

gemmae Ashmead. Mo.

Bassettia gemmae Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 128. ♀.

herberti (Weld). Calif. Ecology: Produce stem galls on *Quercus agrifolia*, *Q. kelloggii*, *Q. wislizenii*.

Eumayria herberti Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 108. ♀, gall.

ligni Kinsey. Calif. Ecology: Produce stem galls in agamic generation and leaf galls in sexual generation on *Quercus douglasii*, *Q. dumosa*, *Q. lobata*.

Bassettia ligni Kinsey, 1922. Amer. Mus. Nat. Hist., Bul. 46: 291. ♀, gall.

Biology: Rosenthal and Koehler, 1971. Ent. Soc. Amer., Ann. 64: 565-570.

pallida Ashmead. Ga., Fla., Mo. Ecology: Produce stem galls on live oaks.

Bassettia pallida Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 128. ♀.

quercuscatesbaei (Ashmead). Fla. Ecology: Produce stem galls on *Quercus catesbaei*.

Cynips q. catesbaei Ashmead, 1881. Amer. Ent. Soc., Trans. 9: Proc. p. xv. ♀, ♂, gall.

Andricus (*Andricus*) *catesbaei* Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 295.

tenuana Weld. N. Mex., Ariz. Ecology: Produce root galls on *Quercus gambelii*, *Q. subturbinata*.

Bassettia tenuana Weld, 1921. U. S. Natl. Mus., Proc. 59: 190, 232. ♀, gall.

Genus EUMAYRIA Ashmead

Eumayria Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 147.

Type-species: *Eumayria floridana* Ashmead. Monotypic.

eldoradensis (Beutenmueller). Oreg., Calif. Ecology: Produce acorn galls on *Quercus agrifolia*, *Q. kelloggii*, *Q. wislizenii*.

Andricus eldoradensis Beutenmueller, 1913. Brooklyn Ent. Soc., Bul. 8: 105. ♂.

floridana Ashmead. Va., Fla., Ind., Ill., Ark., Tex. Ecology: Produce root galls on red oaks.

Eumayria floridana Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 147. ♀, ♂, gall.

invisa Weld. Fla. Ecology: Produce stem galls on *Quercus myrtifolia*.

Eumayria invisus Weld, 1952. U. S. Natl. Mus., Proc. 102: 335. ♀, gall.

longipennis (Ashmead). Fla. Ecology: Produce stem galls on *Quercus laurifolia*.

Neuroterus longipennis Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 132, 140. ♂, gall.

Genus TRISOLENIELLA Rohwer and Fagan

Trisolenia Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 142. Preocc. by Ehrenberg, 1861.

Type-species: *Andricus saltatus* Ashmead. Monotypic.

Trisoleniella Rohwer and Fagan, 1917. U. S. Natl. Mus., Proc. 53: 377. N. name.

brevicornis (Beutenmueller). N. J. Ecology: Observed ovipositing in the buds of *Quercus alba*.

Andricus brevicornis Beutenmueller, 1913. Amer. Ent. Soc., Trans. 39: 245. ♀.

enigma (Weld). Va., Fla., Ill., Tex. Ecology: Produce root galls on *Quercus catesbaei*, *Q. myrtifolia*, *Q. rubra*, *Q. texana*.

Callirhytis enigma Weld, 1921. U. S. Natl. Mus., Proc. 59: 219. ♀, gall.

bignelli (Dalla Torre and Kieffer). N. Y., N. J.

Trisolenia punctata Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 129. ♀. Preocc. in *Andricus* by Bignell, 1892.

Andricus bignelli Dalla Torre and Kieffer, 1902. In Wytsman, Gen. Ins., fasc. 9, p. 61. N. name.

Amphibolips montana Beutenmueller, 1913. Insecutor Inscitiae Menstruus 1: 122. ♀.

saltata (Ashmead). N. C., Fla. Ecology: Produce bud galls on *Quercus cinerea*, *Q. falcata*.

Andricus saltatus Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 142. ♀, gall.

Genus ODONTOCYNIPS Kieffer

Odontocynips Kieffer, 1910. Lab. Zool. Gen. e Agr. Portici, Bol. 4: 112.

Type-species: *Odontocynips nebulosa* Kieffer. Monotypic.

nebulosa Kieffer. Ga., Fla., Mo., Ark., Tex. Ecology: Produce root galls on *Quercus stellata*.

Odontocynips nebulosa Kieffer, 1910. Lab. Zool. Gen. e Agr. Portici, Bol. 4: 112. ♀.

Genus HOLOCYNIPS Kieffer

Holocynips Kieffer, 1910. Lab. Zool. Gen. e Agr. Portici, Bol. 4: 114.

Type-species: *Holocynips emarginata* Kieffer. Monotypic.

badia (Bassett). Conn., N. Y., s. to Fla., w. to Ill., Mo., Ark., Tex. Ecology: Produce galls at bases of sprouts of *Quercus alba*, *Q. bicolor*, *Q. chapmani*, *Q. macrocarpa*, *Q. prinus*, *Q. stellata*.

Amphibolips badius Bassett, 1900. Amer. Ent. Soc., Trans. 26: 323. ♀.

Holocynips emarginata Kieffer, 1910. Lab. Zool. Gen. e Agr. Portici, Bol. 4: 114. ♀, gall.

Callirhytis corallosa Weld, 1921. U. S. Natl. Mus., Proc. 59: 191, 216. ♀, gall.

hartmani (Weld). Calif. Ecology: Produce root galls on *Quercus chrysolepis*.

Callirhytis hartmani Weld, 1921. U. S. Natl. Mus., Proc. 59: 191, 214. ♀, gall.

humicola (Kinsey). Oreg., Calif. Ecology: Produce root galls on *Quercus agrifolia*, *Q. kelloggi*, *Q. wislizenii*.

Andricus humicola Kinsey, 1922. Amer. Mus. Nat. Hist., Bul. 46: 283. ♀, gall.

maxima (Weld). N. Y., Md., D. C., Va., Ill. Ecology: Produce root galls on *Quercus alba*, *Q. bicolor*, *Q. macrocarpa*, *Q. prinus*.

Callirhytis maxima Weld, 1921. U. S. Natl. Mus., Proc. 59: 191, 217. ♀, gall.

Genus PLAGIOTROCHUS Mayr

Plagiotrochus Mayr, 1881. Zwanzig. Jahresber. Comm.-Oberrealsch. I. Bez. Wien., pp. 8, 12, 32.

Type-species: *Cynips ilicis* Fabricius. Desig. by Ashmead, 1903.

suberi Weld. Calif. Ecology: Produce stem galls on the introduced European cork oak, *Quercus suber*.

Plagiotrochus suberi Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 47. ♀, gall.

Genus DRYOCOSMUS Giraud

Dryocosmus Giraud, 1859. Zool.-Bot. Gesell. Wien., Verh. 9: 353.

Type-species: *Dryocosmus cerriphilus* Giraud. Monotypic.

Entropa Foerster, 1869. Zool.-Bot. Gesell. Wien., Verh. 19: 330, 334.

Type-species: *Entropa lissonota* Foerster. Monotypic.

albidus Weld. N. Y., Va., N. C., Ill. Ecology: Produce leaf galls on *Quercus coccinea*, *Q. velutina*.

Dryocosmus albidus Weld, 1944. U. S. Natl. Mus., Proc. 95: 15. ♀, gall.

asymmetricus (Kinsey). Calif. Ecology: Produce stem galls on *Quercus chrysolepis*.

Plagiotrichus(!) *asymmetricus* Kinsey, 1922. Ind. Univ. Studies 53: 106. ♀, gall.

asymmetricus var. **annectens** (Kinsey). Calif.

Plagiotrichus(!) *asymmetricus* var. *annectens* Kinsey, 1922. Ind. Univ. Studies 53: 107. ♀, gall.

asymmetricus var. **compactus** (Kinsey). Calif.

Plagiotrichus(!) *asymmetricus* var. *compactus* Kinsey, 1922. Ind. Univ. Studies 53: 108. ♀, gall.

attractans (Kinsey). Calif. Ecology: Produce bud galls on *Quercus wislizenii*.

Andricus attractans Kinsey, 1922. Amer. Mus. Nat. Hist., Bul. 46: 281. ♂, gall.

castanopsidis (Beutenmueller). Oreg., Calif. Ecology: Produce staminate flower galls on *Castanopsis chrysophylla*, *C. sempervirens*.

Andricus castanopsidis Beutenmueller, 1917. Canad. Ent. 49: 345. ♀, gall.

cinerea (Ashmead). N. Y., Pa., Va., S. C., Fla., Ill., Mo., Tex. Ecology: Produce leaf galls on *Quercus cinerea* and other red oaks.

Dryophanta cinerea Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 144. ♀, gall.

Andricus (*Callirhytis*) *saccularius* Bassett, 1890. Amer. Ent. Soc., Trans. 17: 76. ♂, gall.

coxii (Bassett). N. Mex., Ariz. Ecology: Produce stem galls on *Quercus emoryi*, *Q. hypoleuca*.

Cynips coxii Bassett, 1881. Canad. Ent. 13: 112. ♀, gall.

Andricus coxi Bassett, 1900. Amer. Ent. Soc., Trans. 26: 320. ♀, gall.

- Andricus Bassettianus* Dalla Torre and Kieffer, 1902. In Wytzman, Gen. Ins., fasc. 9, p. 61.
N. name for *cori* Bassett, 1900.
- coxii** var. **translatus** (Kinsey). Ariz. Ecology: Produce stem galls on *Quercus hypoleuca*.
Plagiotrichus (!) *coxii* var. *translatus* Kinsey, 1922. Ind. Univ. Studies 53: 125. ♀, gall.
- deciduus** (Beutenmueller). Md., Va., N. C., Tenn., Ill., Mo. Ecology: Produce leaf galls on
Quercus rubra, *Q. velutina*.
- Andricus decidua* Beutenmueller, 1913. Insecutor Inscitiae Menstruus 1: 131. ♀, gall.
- dubiosus** (Fullaway). Calif. Ecology: Produce leaf galls in agamic generation, ament galls in sexual generation, on *Quercus agrifolia*, *Q. wislizenii*.
Diplolepis dubiosa Fullaway, 1911. Ent. Soc. Amer., Ann. 4: 339. ♀, ♂, gall. Sexual gen.
- Callirhytis bicornis* McCracken and Egbert, 1922. Stanford Univ. Pubs., Univ. Ser., Biol. Sci. 3 (1): 42. ♀, gall. Agamic gen.
- Biology: Douth, 1959. Ent. Soc. Amer., Ann. 52: 69-74.
- favus** Beutenmueller. Pa. s. to Fla., w. to Ill., Mo., Ark., Tex. Ecology: Produce root galls on red oaks.
Dryocosmus favius Beutenmueller, 1911. Ent. News 22: 197. ♀, gall.
- floridensis** (Beutenmueller). Va. s. to Fla., w. to Okla., Tex. Ecology: Produce stem galls on red oaks.
Dryophanta floridensis Beutenmueller, 1917. Canad. Ent. 49: 349. ♀, gall.
Andricus peltatus Wells and Metcalf, 1921. Canad. Ent. 53: 212. ♀, gall.
- gigas** (Kinsey). Calif. Ecology: Produce ament galls on *Quercus douglasii*.
Andricus gigas Kinsey, 1922. Amer. Mus. Nat. Hist., Bul. 46: 282. ♀, ♂, gall.
- imbricariae** (Ashmead). Conn., N. Y. to Fla., w. to Mo., Okla., Tex. Ecology: Produce stem galls on red oaks.
Andricus imbricariae (!) Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 122. ♀, gall.
Holcaspis fasciata Bassett, 1900. Amer. Ent. Soc., Trans. 26: 328. ♀, gall.
- minusculus** Weld. Calif. Ecology: Produce leaf galls on *Quercus agrifolia*.
Dryocosmus minusculus Weld, 1952. U. S. Natl. Mus., Proc. 102: 337. ♀, gall.
- quercuslaurifoliae** (Ashmead). Fla. Ecology: Produce leaf galls on *Quercus laurifolia*, *Q. nigra*.
Spathegaster q. laurifoliae Ashmead, 1881. Amer. Ent. Soc., Trans. 9: Proc. p. xvii. ♀, ♂, gall.
- Cynips q. aquaticae* Ashmead, 1881. Amer. Ent. Soc., Trans. 9: Proc. p. xvi. ♀, ♂, gall.
Dryophanta laurifoliae Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 296.
Dryophanta aquaticae Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 296.
- quercusnotha** (Osten Sacken). Conn., N. Y., N. J., Md., Va., Fla., Ill. Ecology: Produce leaf galls on *Quercus palustris* and other red oaks.
Cynips q. notha Osten Sacken, 1870. Amer. Ent. Soc., Trans. 3: 55. ♀, ♂, gall.
Andricus (Callirhytis) notha Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 295.
Andricus (Callirhytis) pusulatoides Bassett, 1890. Amer. Ent. Soc., Trans. 17: 74. ♀, gall.
- quercuspalustris** (Osten Sacken). Mass., Ont. to Fla., w. to Iowa, La. Ecology: Produce leaf galls on red oaks.
Cynips (Trigonaspis ?) quercus palustris Osten Sacken, 1861. Ent. Soc., Phila., Proc. 1: 62. ♀, ♂, gall.
Andricus (Callirhytis) palustris Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 294.
Dryophanta liberaecellulae Gillette, 1890. Ent. Amer. 6: 24. ♀, ♂, gall.
- rileyi** (Ashmead). N. Y. to Fla., w. to Mo., Tex. Ecology: Produce leaf galls on red oaks.
Andricus rileyi Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 121. ♀, gall.

Genus HETEROECUS Kinsey

- Heteroecus* Kinsey, 1922. Ind. Univ. Studies 53: 81.
Type-species: *Andricus dasydactyli* Ashmead. Orig. desig.
- Revision: Kinsey, 1922. Ind. Univ. Studies 53: 81-100.
- chrysolepidis** (Ashmead). Calif. Ecology: Produce stem galls on *Quercus chrysolepis*.
Andricus chrysolepidis Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 119. ♀, gall.

- dasydactyli* (Ashmead). Calif. Ecology: Produce stem galls in agamic generation and leaf galls in sexual generation on *Quercus chrysolepis*.
Andricus dasydactyli Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 117. ♀, gall.
 Biology: Rosenthal and Koehler, 1971. Ent. Soc. Amer., Ann. 64: 565-570.
- dasydactyli* var. *pygmaeus* Kinsey. Calif.
Heteroecus dasydactyli var. *pygmaeus* Kinsey, 1922. Ind. Univ. Studies 53: 91. ♀, gall.
- eriphora* (Kieffer). Calif. Ecology: Produce twig galls on *Quercus* sp.
Callirhytis eriphora Kieffer, 1904. Soc. Hist. Nat. Metz., Bul. (2) 11: 132. ♀, gall.
- flavens* (McCracken and Egbert). Calif. Ecology: Produce leaf galls on *Quercus chrysolepis*, *Q. vaccinifolia*.
Callirhytis flavens McCracken and Egbert, 1922. Stanford Univ. Pubs., Univ. Ser., Biol. Sci. 3(1): 40. ♀, gall.
- malus* Kinsey. Calif. Ecology: Produce twig galls on *Quercus chrysolepis*.
Heteroecus malus Kinsey, 1922. Ind. Univ. Studies 53: 92. ♀, gall.
- melanoderma* Kinsey. Ariz., Calif. Ecology: Produce stem galls on *Quercus chrysolepis*, *Q. wilcoxii*. Date seed gall.
Heteroecus melanoderma Kinsey, 1922. Ind. Univ. Studies 53: 92. ♀, gall.
- pacificus* (Ashmead). Calif. Ecology: Produce stem galls in agamic generation and leaf galls in sexual generation on *Quercus chrysolepis*.
Andricus pacificus Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 118. ♀, gall.
Callirhytis bakeri Kieffer, 1904. Soc. Hist. Nat. Metz., Bul. (2) 11: 132. ♀, gall.
- Biology: Lyon, 1963. Ent. Soc. Wash., Proc. 65: 250-254.
- pacificus* var. *gracilis* Kinsey. Calif.
Heteroecus pacificus var. *gracilis* Kinsey, 1922. Ind. Univ. Studies 53: 95. ♀, gall.
- pacificus* var. *subpacificus* Kinsey. Calif.
Heteroecus pacificus var. *subpacificus* Kinsey, 1922. Ind. Univ. Studies 53: 95. ♀, gall.
- sanctaeclarae* (Fullaway). Calif. Ecology: Produce stem galls on *Quercus chrysolepis*.
Callirhytis sanctae-clarae Fullaway, 1911. Ent. Soc. Amer., Ann. 4: 363. ♀, gall.
- sanctaeclarae* var. *aliud* Kinsey. Calif.
Heteroecus sanctae-clarae var. *aliud* Kinsey, 1922. Ind. Univ. Studies 53: 98. ♀, gall.
- sanctaeclarae* var. *fuscior* Kinsey. Calif.
Heteroecus sanctae-clarae var. *fuscior* Kinsey, 1922. Ind. Univ. Studies 53: 98. ♀, gall.

Genus CALLIRHYTIS Foerster

- Callirhytis* Foerster, 1869. Zool.-Bot. Gesell. Wien, Verh. 19: 331, 335.
 Type-species: *Callirhytis hartigi* Foerster. Monotypic.
- apicalis* (Ashmead). Calif. Ecology: Produce root galls on *Quercus agrifolia*, *Q. kelloggii*, *Q. wislizenii*.
Andricus apicalis Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 120. ♀, gall.
- attigua* Weld. Tex. Ecology: Produce leaf galls on *Quercus texana*.
Callirhytis attigua Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 88. ♀, gall.
- balanacea* Weld. N. Y., Va., Mo. Ecology: Produce acorn galls on *Quercus palustris*.
Callirhytis balanacea Weld, 1944. U. S. Natl. Mus., Proc. 95: 16. ♀, gall.
- balanaspis* Weld. D. C., Va., Mo., Ark., Tex. Ecology: Produce acorn galls on *Quercus marilandica*.
Callirhytis balanaspis Weld, 1922. U. S. Natl. Mus., Proc. 61 (19): 22. ♀, gall.
- balanella* Weld. Ariz. Ecology: Produce acorn galls on *Quercus emoryi*.
Callirhytis balanella Weld, 1957. U. S. Natl. Mus., Proc. 107: 117. ♀, gall.
- balanoides* Weld. N. Y., Va., Ill., Mo., Tex. Ecology: Produce acorn galls on *Quercus velutina*.
Callirhytis balanoides Weld, 1922. U. S. Natl. Mus., Proc. 61 (19): 27. ♀, gall.
- balanopsis* Weld. Va., Ga., Ala., Miss., Mo., Ark., Tex. Ecology: Produce acorn galls on *Quercus marilandica*.
Callirhytis balanopsis Weld, 1922. U. S. Natl. Mus., Proc. 61 (19): 26. ♀, gall.

- balanosa** Weld. Ill. Ecology: Produce acorn galls on *Quercus coccinea*.
Callirhytis balanosa Weld, 1922. U. S. Natl. Mus., Proc. 61 (19): 19. ♀, gall.
- bipapillata** Weld. N. Y., Va. Ecology: Produce leaf galls on *Quercus ilicifolia*.
Callirhytis bipapillata Weld, 1944. U. S. Natl. Mus., Proc. 95: 17. ♀, ♂, gall.
- blastophaga** (Ashmead). Fla. Ecology: Produce ament galls on *Quercus cinerea*.
Andricus blastophagus Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 143. ♀, gall.
- carmelensis** Weld. Calif. Ecology: Produce acorn galls on *Quercus agrifolia*, *Q. kelloggii*, *Q. wislizenii*.
Callirhytis carmelensis Weld, 1922. U. S. Natl. Mus., Proc. 61 (19): 20. ♀, gall.
- cistella** Weld. Ariz. Ecology: Produce acorn galls on *Quercus emoryi*, *Q. hypoleuca*.
Callirhytis cistella Weld, 1952. U. S. Natl. Mus., Proc. 102: 338. ♀, gall.
- clarkei** (Bassett). Mass., N. J., Va. Ecology: Produce ament galls on *Quercus ilicifolia*.
Andricus (Callirhytis) clarkei Bassett, 1890. Amer. Ent. Soc., Trans. 17: 79. ♀, gall.
- clavula** (Osten Sacken). Mass., N. Y., Pa., N. J., D. C., N. C., Ill., Iowa. Ecology: Produce stem galls on *Quercus alba*.
Cynips clavula Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 351. ♀, gall.
- congregata** (Ashmead). Calif. Ecology: Produce ament galls on *Quercus agrifolia*, *Q. wislizenii*.
Andricus congregatus Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 120. ♀, gall.
- cornigera** (Osten Sacken). Mass. to Ga., w. to Iowa. Ecology: Produce stem galls on *Quercus palustris* and other red oaks.
Cynips cornigera Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 358. ♀, gall.
- corrugis** (Bassett). Conn., Va. Ecology: Produce acorn galls on *Quercus velutina*.
Cynips corrugis Bassett, 1881. Canad. Ent. 13: 109. ♀.
Callirhytis defecta Kieffer, 1910. Lab. Zool. Gen. e Agr. Portici, Bol. 4: 116. ♀.
- Taxonomy: Weld, 1952. U. S. Natl. Mus., Proc. 102: 338 (gall).
- cressoni** (Beutenmueller). Tex. Ecology: Produce bud galls on *Quercus stellata*.
Dryophanta cressoni Beutenmueller, 1913. Amer. Ent. Soc., Trans. 39: 247. ♀, gall.
- crypta** (Ashmead). Ga., Fla., Ala., Miss., Tex. Ecology: Produce stem galls on *Quercus cinerea*, *Q. marilandica*.
Andricus cryptus Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 145. ♀, gall.
- cryptica** Weld. Fla., Ala. Ecology: Produce bud galls on *Quercus myrtifolia*.
Callirhytis cryptica Weld, 1922. U. S. Natl. Mus., Proc. 61 (18): 19. ♀, gall.
- difficilis** (Ashmead). Ga. w. to Mo., Ark., Tex. Ecology: Produce stem galls on *Quercus myrtifolia*, *Q. nigra*, *Q. phellos*.
Andricus difficilis Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 143. ♀, gall.
- electrea** Weld. Md., D. C., Va. Ecology: Produce acorn galls on *Quercus prinus*.
Callirhytis electrea Weld, 1944. U. S. Natl. Mus., Proc. 95: 18. ♀, gall.
- ellipsoida** Weld. Ill. Ecology: Produce root galls on *Quercus bicolor*.
Callirhytis ellipsoida Weld, 1921. U. S. Natl. Mus., Proc. 59: 227. ♀, gall.
- elliptica** Weld. Pa., D. C., Va., Ill. Ecology: Produce root galls on *Quercus alba*.
Callirhytis elliptica Weld. 1921. U. S. Natl. Mus., Proc. 59: 228. ♀, gall.
- elongata** (Kinsey). Tex. Ecology: Produce stem galls on *Quercus breviloba*.
Plagiotrichus(!) elongatus Kinsey, 1922. Ind. Univ. Studies 53: 125. ♀, gall.
- elongata** var. **rufopleurae** (Kinsey). Tex. Ecology: Produce stem galls on *Quercus breviloba*.
Plagiotrichus(!) elongatus var. *rufopleurae* Kinsey, 1922. Ind. Univ. Studies 53: 128. ♀, gall.
- elongata** var. **stellatae** (Kinsey). Tex. Ecology: Produce stem galls on *Quercus stellata*.
Plagiotrichus(!) elongatus var. *stellatae* Kinsey, 1922. Ind. Univ. Studies 53: 128. ♀, gall.
- excavata** (Ashmead). New England, N. C. Ecology: Produce stem galls on *Quercus rubra*.
Andricus excavatus Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 121. ♀, gall.
- exigua** (Bassett). Conn., D. C., Va. Ecology: Produce ament galls on *Quercus stellata*.
Andricus exiguus Bassett, 1900. Amer. Ent. Soc., Trans. 26: 318. ♀, ♂, gall.

- favosa** (Bassett). N. Y., Pa., Md., Va., Ohio. Ecology: Produce leaf galls on *Quercus palustris*, *Q. velutina*.
Neuroterus favosus Bassett, 1890. Amer. Ent. Soc., Trans. 17: 87. ♀, ♂, gall.
- flavipes** (Gillette). Ill., Minn., Iowa. Ecology: Produce leaf galls on *Quercus macrocarpa*.
Neuroterus flavipes Gillette, 1889. Iowa Agr. Expt. Sta., Bul. 7: 281. ♀, ♂, gall.
- flora** Weld. Calif. Ecology: Produce leaf galls on *Quercus agrifolia*, *Q. wislizeni*.
Callirhytis flora Weld, 1922. U. S. Natl. Mus., Proc. 61 (18): 20. ♀, gall.
- florensii** Weld. Va. Ecology: Produce ament galls on *Quercus marilandica*.
Callirhytis florensii Weld, 1944. U. S. Natl. Mus., Proc. 95: 19. ♀, ♂, gall.
- floridana** (Ashmead). Md., D. C., Va., N. C., Fla., Mo., Ark., La. Ecology: Produce stem galls on *Quercus chapmani*, *Q. stellata*.
Andricus floridanus Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 137. ♀, ♂, gall.
- floripara** Weld. Calif. Ecology: Produce ament galls on *Quercus agrifolia*.
Callirhytis floripara Weld, 1957. U. S. Natl. Mus., Proc. 107: 118. ♀, ♂, gall.
- frequens** (Gillette). Colo., N. Mex., Ariz. Ecology: Produce stem galls on *Quercus gambelii*, *Q. havardi*, *Q. undulata*.
Andricus frequens Gillette, 1892. Ent. News 3: 247. ♀, gall.
- frequens** var. **piceoderma** (Kinsey). Colo.
Plagiotrichus(!) *frequens* var. *piceoderma* Kinsey, 1922. Ind. Univ. Studies 53: 131. ♀.
- fructicola** Ashmead. Pa., Va., S. C., Tenn. Ecology: Produce acorn galls on *Quercus ilicifolia*, *Q. marilandica*, *Q. velutina*.
Callirhytis fructicola Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 131. ♀, gall.
- fructuosa** Weld. N. Y., Md., Va., N. C., S. C., Ga., Ala., Ill., Mo., Tex. Ecology: Produce acorn galls on red oaks.
Callirhytis fructuosa Weld, 1922. U. S. Natl. Mus., Proc. 61: (19): 14. ♀, gall.
- fulva** Weld. Calif. Ecology: Produce root galls on *Quercus chrysolepis*.
Callirhytis fulva Weld, 1921. U. S. Natl. Mus., Proc. 59: 226. ♀, gall.
- furva** Weld. Va., Mo. Ecology: Produce leaf galls on *Quercus nigra*, *Q. palustris*.
Callirhytis furva Weld, 1952. U. S. Natl. Mus., Proc. 102: 341. ♀, gall.
- gallaestriatae** Weld. N. Y., Va., N. C., Ill. Ecology: Produce bud galls on *Quercus coccinea*, *Q. palustris*, *Q. rubra*, *Q. velutina*.
Callirhytis gallaestriatae Weld, 1926. U. S. Natl. Mus., Proc. 68 (10): 92. ♀, gall.
- gemmiformis** (Beutenmueller). N. Y., N. J., Md., Va., Ill. Ecology: Produce bud galls on *Quercus alba*.
Andricus gemmiformis Beutenmueller, 1917. Canad. Ent. 49: 346. ♀, gall.
- glandulus** (Beutenmueller). N. J. Ecology: Produce acorn galls on *Quercus prinoides*.
Andricus glandulus Beutenmueller, 1913. Brooklyn Ent. Soc., Bul. 8: 103. ♀.
- glomerosa** Weld. Va. Ecology: Produce bud galls on *Quercus coccinea*.
Callirhytis glomerosa Weld, 1957. U. S. Natl. Mus., Proc. 107: 119. ♀, gall.
- hopkinsi** Weld. D. C., Va., W. Va. Ecology: Produce acorn galls on *Quercus imbricaria*.
Callirhytis hopkinsi Weld, 1952. U. S. Natl. Mus., Proc. 102: 339. ♀, gall.
- infuscata** (Ashmead). Ga., Fla. Ecology: Produce leaf galls on *Quercus catesbaei* and other red oaks on the coastal plains.
Andricus infuscatus Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 144. ♀, gall.
- intersita** Weld. Va. Ecology: Females collected ovipositing in internodes of twigs of *Quercus alba*.
Callirhytis intersita Weld, 1957. U. S. Natl. Mus., Proc. 107: 119. ♀.
- juvenea** Weld. N. Mex., Ariz. Ecology: Produce leaf galls on *Quercus arizonica*, *Q. gambelii*, *Q. oblongifolia*, *Q. reticulata*, *Q. subtorbinella*.
Callirhytis juvenea Weld, 1944. U. S. Natl. Mus., Proc. 95: 20. ♀, gall.
- lanata** (Gillette). Mass. s. to N. C., Ala., w. to Minn., Ark., Tex. Ecology: Produce leaf galls on *Quercus coccinea*, *Q. rubra*.
Dryophanta lanata Gillette, 1891. Ill. State Lab. Nat. Hist., Bul. 3: 198. ♀, gall.
- lapillula** Weld. D. C., Ill. Ecology: Produce acorn galls on *Quercus bicolor*.
Callirhytis lapillula Weld, 1922. U. S. Natl. Mus., Proc. 61 (19): 18. ♀, gall.

- lupana** Weld. Ariz. Ecology: Produce leaf galls on *Quercus emoryi*, *Q. hypoleuca*.
Callirhytis lupana Weld, 1944. U. S. Natl. Mus., Proc. 95: 21. ♀, ♂, gall.
- marginata** Weld. Ill. Ecology: Produce root galls on *Quercus coccinea*.
Callirhytis marginata Weld, 1921. U. S. Natl. Mus., Proc. 59: 225. ♀, gall.
- medularis** Weld. Pa., Va., Ohio. Ecology: Produce stem galls on *Quercus coccinea*, *Q. velutina*.
Callirhytis medularis Weld, 1957. U. S. Natl. Mus., Proc. 107: 121. ♀, ♂, gall.
- middletoni** Weld. D. C., Va., Fla., Ala. Ecology: Produce acorn galls on *Quercus phellos*.
Callirhytis middletoni Weld, 1922. U. S. Natl. Mus., Proc. 61 (19): 25. ♀, gall.
- milleri** Weld. Calif. Ecology: Produce acorn galls on *Quercus agrifolia*, *Q. kelloggii*, *Q. wislizenii*.
Callirhytis milleri Weld, 1922. U. S. Natl. Mus., Proc. 61 (19): 11. ♀, gall.
Callirhytis essigi McCracken and Egbert, 1922. Stanford Univ., Pubs., Univ. Ser., Biol. Sci. 3 (1): 43. ♀, gall.
- morrisoni** (Ashmead). Ariz. Ecology: Produce leaf galls on *Quercus* sp.
Andricus morrisoni Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 116. ♀, ♂, gall.
- myrtifoliae** (Beutenmueller). Fla. Ecology: Produce ament galls on *Quercus myrtifolia*.
Andricus myrtifoliae Beutenmueller, 1917. Canad. Ent. 49: 346. ♀, ♂, gall.
- oblata** Weld. Va. Ecology: Produce bud galls on *Quercus coccinea*, *Q. falcata*.
Callirhytis oblata Weld, 1952. U. S. Natl. Mus., Proc. 102: 340. ♀, gall.
- obtusilobae** (Bassett). Conn. Ecology: Produce leaf galls on *Quercus stellata*.
Andricus obtusilobae Bassett, 1900. Amer. Ent. Soc., Trans. 26: 316. ♀.
- ovata** Weld. Fla., Ark., Tex. Ecology: Produce root galls on *Quercus catesbaei*, *Q. cinerea*, *Q. myrtifolia*, *Q. texana*.
Callirhytis ovata Weld, 1921. U. S. Natl. Mus., Proc. 59: 222. ♀, gall.
- ovata** var. **melanica** (Kinsey). Tex. Ecology: Produce root galls on *Quercus schneckii*.
Andricus ovata var. *melanica* Kinsey, 1922. Ind. Univ. Studies 53: 32. ♀, gall.
- parva** Weld. Va., W. Va., Mo. Ecology: Produce ament galls on *Quercus imbricaria*.
Callirhytis parva Weld, 1922. U. S. Natl. Mus., Proc. 61 (18): 23. ♀, ♂, gall.
- parvifoliae** Ashmead. Fla. Ecology: Produce leaf galls on *Quercus chapmani*.
Callirhytis parvifoliae Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 138. ♀, gall.
- parvula** (Bassett). Conn. Ecology: Taken ovipositing in buds of *Quercus ilicifolia*; never reared and gall unknown.
Dryophanta parvula Bassett, 1900. Amer. Ent. Soc., Trans. 26: 326. ♀.
- patiens** (Bassett). Conn. Ecology: Taken ovipositing in buds of *Quercus ilicifolia*; never reared and gall unknown. This may be a synonym of *parvula*.
Andricus patiens Bassett, 1900. Amer. Ent. Soc., Trans. 26: 312. ♀.
- pedunculata** (Bassett). Conn., N. Y., Va., Ill. Ecology: Produce leaf galls on *Quercus coccinea*, *Q. rubra*.
Dryophanta pedunculata Bassett, 1890. Amer. Ent. Soc., Trans. 17: 72. ♀, ♂, gall.
- perdens** (Kinsey). Oreg., Calif. Ecology: Produce stem galls on *Quercus agrifolia*, *Q. kelloggii*, *Q. wislizenii*.
Andricus perdens Kinsey, 1922. Amer. Mus. Nat. Hist., Bul. 46: 286. ♀, gall.
- perdens** var. **destructor** (Kinsey). Calif.
Plagiotrichus(!) *perdens* var. *destructor* Kinsey, 1922. Ind. Univ. Studies 53: 134. ♀, gall.
- perditor** (Bassett). Conn., N. Y., N. J., Va. Ecology: Produce acorn galls on *Quercus ilicifolia*; galls secrete honeydew.
Andricus perditor Bassett, 1900. Amer. Ent. Soc., Trans. 26: 313. ♀, gall.
- perfoveata** (Kinsey). Calif. Ecology: Produce leaf galls on *Quercus agrifolia*, *Q. kelloggii*, *Q. wislizenii*.
Andricus perfoveatus Kinsey, 1922. Amer. Mus. Nat. Hist., Bul. 46: 287. ♀, gall.
- perobscura** Weld. Va. Ecology: Observed ovipositing in buds of *Quercus velutina*; gall unknown.
Callirhytis perobscura Weld, 1957. U. S. Natl. Mus., Proc. 107: 122. ♀.
- perplexa** (Ashmead). Mo. Ecology: Produce woolly leaf galls on *Quercus* sp.
Andricus perplexus Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 122. ♀, gall.

- perrugosa** Weld. N. J., Pa., Md., D. C., Va. Ecology: Taken ovipositing in terminal buds on sprouts of *Quercus alba*; probably form root galls.
Callirhytis perrugosa Weld, 1944. U. S. Natl. Mus., Proc. 95: 22. ♀.
- petrina** Weld. Ariz. Ecology: Produce acorn galls on *Quercus hypoleuca*.
Callirhytis petrina Weld, 1922. U. S. Natl. Mus., Proc. 61 (19): 13. ♀, gall.
- petrosa** Weld. Ga., Fla., Tex. Ecology: Produce acorn galls on *Quercus cinerea*.
Callirhytis petrosa Weld, 1922. U. S. Natl. Mus., Proc. 61 (19): 15. ♀, gall.
- pigra** (Bassett). Conn. s. to Fla., w. to Ill., Mo. Ecology: Produce leaf galls on *Quercus coccinea*, *Q. velutina*.
Cynips pigra Bassett, 1881. Canad. Ent. 13: 105. ♀, gall.
Callirhytis cellae Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 141. ♀, gall.
- piperoides** (Bassett). Maine to N. C., w. to Ill. Ecology: Produce leaf galls on *Quercus rubra* and other red oaks.
Andricus piperoides Bassett, 1900. Amer. Ent. Soc., Trans. 26: 314. ♀, gall.
- pulchra** (Bassett). Mass., N. Y., Va., Ill. Ecology: Produce ament galls on *Quercus rubra*, *Q. velutina*.
Andricus (Callirhytis) pulchra Bassett, 1890. Amer. Ent. Soc., Trans. 17: 73. ♀, ♂, gall.
- quercifoliae** (Ashmead). Fla. Ecology: Produce leaf galls on *Quercus catesbaei*.
Andricus quercifoliae Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 299. ♂, gall.
- quercusagrifoliae** (Bassett). Calif. Ecology: Produce leaf galls in agamic generation and leaf axil galls in sexual generation on *Quercus agrifolia*, *Q. kelloggii*, *Q. wislizenii*.
Cynips q. agrifoliae Bassett, 1881. Canad. Ent. 13: 53. ♀, gall.
Andricus (Callirhytis) agrifoliae Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 294.
Andricus wislizeni(!) Ashmead, 1896. U. S. Natl. Mus., Proc. 19: 119. ♀, gall.
Callirhytis clarimontis Kieffer, 1904. Soc. Hist. Nat. Metz, Bul. (2) 11: 132. ♀, gall.
- Biology: Lyon, 1964. Ent. Soc. Wash., Proc. 66: 193.
- quercusbatatoides** (Ashmead). S. C., Ga., Fla., Ala., Miss., La. Ecology: Produce stem galls on *Quercus virginiana*.
Cynips (Dryocosmus?) quercus batatoides Ashmead, 1881. Amer. Ent. Soc., Trans. 9: Proc. p. xi. ♀, gall.
Cynips batatoides Packard, 1881. U. S. Ent. Comn., Bul. 7: 57.
Andricus (Andricus) batatoides Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 296.
- quercusclavigera** (Ashmead). Fla. Ecology: Produce stem galls on *Quercus laurifolia*.
Cynips q. clavigera Ashmead, 1881. Amer. Ent. Soc., Trans. 9: Proc. p. xxvii. ♀, gall.
Andricus (Andricus) clavigerus Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 295.
- quercusconfusa** (Ashmead). Fla. Ecology: Produce leaf galls on *Quercus laurifolia*.
Cynips q. confusa Ashmead, 1881. Amer. Ent. Soc., Trans. 9: Proc. p. xviii. ♀, gall.
Neuroterus confusa Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 296.
- quercusfutilis** (Osten Sacken). Mass. s. to Va., w. to Wis., Ark., Okla. Ecology: Produce root galls in agamic generation, leaf galls in sexual generation, on *Quercus alba*, *Q. prinus*.
Cynips quercus futilis Osten Sacken, 1861. Ent. Soc., Phila., Proc. 1: 63. ♂, gall.
Cynips quercus papillata Osten Sacken, 1861. Ent. Soc. Phila., Proc. 1: 64. ♂, gall.
Cynips (Andricus) futilis Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 346, 349, 352.
Cynips papillata Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 346, 352.
Callirhytis radiceis Bassett, 1889. Psyche 5: 237. ♀. Preocc. by Fabricius, 1798.
Andricus radiceicola Dalla Torre, 1893. Cat. Hym., v. 2, p. 95. N. name.
- quercusgemmaria** (Ashmead). Mass., N. J., Va., Ga., Fla., Ind., Ill., Tex. Ecology: Produce stem galls on *Quercus cinerea* and other red oaks.
Cynips q. gemmaria Ashmead, 1885. Amer. Ent. Soc., Trans. 12: Proc. p. ix. ♀, gall.
Andricus (Andricus) gemmarius Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 295.
- quercusmedullae** (Ashmead). Fla. Ecology: Produce stem galls on *Quercus cinerea*.
Cynips q. medullae Ashmead, 1885. Amer. Ent. Soc., Trans. 12: Proc. p. viii. ♀, gall.
Andricus (Andricus) medullae Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 295.
- quercusmodesta** (Osten Sacken). Conn., N. Y., D. C., Va., Ind., Okla., Tex. Ecology: Produce leaf galls on *Quercus rubra*, *Q. velutina*.
Cynips quercus modesta Osten Sacken, 1861. Ent. Soc. Phila., Proc. 1: 65. ♀, gall.

- Cynips modesta* Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 346, 349, 357, 379.
Cynips papula Bassett, 1881. Canad. Ent. 13: 107. ♀, gall.
- quercusnigrae** (Osten Sacken). D. C., Va., N. C., Mo., Ark. Ecology: Produce leaf galls on *Quercus marilandica*.
Cynips quercus nigrae Osten Sacken, 1861. Ent. Soc. Phila., Proc. 1: 66. ♀, ♂, gall.
Andricus (Callirhytis) nigrae Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 294.
- quercusoperator** (Osten Sacken). Nova Scotia s. to N. C., w. to Iowa, Mo., Ark., Tex. Ecology: Produce acorn galls in agamic generation, ament galls in sexual generation, on *Quercus marilandica* and other red oaks.
Cynips quercus operator Osten Sacken, 1862. Ent. Soc. Phila., Proc. 1: 256. ♀, ♂, gall. Sexual gen.
Cynips operator Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 357.
Andricus operatola Bassett, 1900. Amer. Ent. Soc., Trans. 26: 315. ♀. Agamic gen.
Andricus operator var. *consobrinus* Kinsey, 1922. Ind. Univ. Studies 53: 26. ♀, ♂, gall.
- quercusoperator** var. *austrior* (Kinsey). Tex. Ecology: Produce ament galls on *Quercus schneckii*.
Andricus operator var. *austrior* Kinsey, 1922. Ind. Univ. Studies 53: 26. ♀, ♂, gall.
- quercusoperator** var. *falsa* (Kinsey). R. I. Ecology: Produce ament galls on *Quercus ilicifolia*.
Andricus operator var. *falsus* Kinsey, 1922. Ind. Univ. Studies 53: 27. ♀, ♂, gall.
- quercusoperator** var. *illustrans* (Kinsey). N. H. Ecology: Produce ament galls on *Quercus ilicifolia*.
Andricus operator var. *illustrans* Kinsey, 1922. Ind. Univ. Studies 53: 28. ♀, ♂, gall.
- quercusphellos** (Osten Sacken). Md., D. C., Va. Ecology: Produce stem galls on *Quercus phellos*.
Cynips quercus phellos Osten Sacken, 1861. Ent. Soc. Phila., Proc. 1: 70. ♀, gall.
Amphibolips phellos Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 294.
- quercuspomiformis** (Bassett). Calif. Ecology: Produce stem galls in agamic generation, leaf galls in sexual generation, on *Quercus agrifolia*, *Q. wislizenii*.
Cynips q. pomiformis Bassett, 1881. Canad. Ent. 13: 74. ♀, gall. Agamic gen.
Andricus (Andricus) pomiformis Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 295.
Callirhytis rossi Kieffer, 1903. Marcellia 2: 84. ♀, gall.
Callirhytis maculipennis Kieffer, 1904. Soc. Hist. Nat. Metz, Bul. (2) 11: 131. ♀, gall.
Andricus yosemite Beutenmueller, 1911. Canad. Ent. 43: 211. ♀, gall.
- Biology: Lyon, 1959. So. Calif. Acad., Sci. Bul. 58 (1): 33-37 (sexual gen. on leaves).
- quercuspomiformis** var. *descansonis* (Kinsey). Calif.
Andricus pomiformis var. *descansonis* Kinsey, 1922. Ind. Univ. Studies 53: 41. ♀, gall.
- quercuspomiformis** var. *distincta* (Kinsey). Calif.
Andricus pomiformis var. *distinctus* Kinsey, 1922. Ind. Univ. Studies 53: 38. ♀, gall.
- quercuspomiformis** var. *provincialis* (Kinsey). Calif.
Andricus pomiformis var. *provincialis* Kinsey, 1922. Ind. Univ. Studies 53: 40. ♀, gall.
- quercuspunctata** (Bassett). Maine, Ont. to N. C., w. to Ill. Ecology: Produce stem galls on *Quercus coccinea*, *Q. palustris*, *Q. velutina*. Gouty gall.
Cynips q. punctata Bassett, 1863. Ent. Soc. Phila., Proc. 2: 323. ♀, gall.
Cynips q. podagrae Walsh, 1864. Ent. Soc. Phila., Proc. 2: 491. ♀, gall.
Cynips punctata Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 358.
Cynips podagrae Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 358.
- quercusrugosa** (Ashmead). N. Y., Md., Va., Fla., Ill. Ecology: Produce leaf galls on *Quercus imbricaria*, *Q. laurifolia*, *Q. phellos*.
Cynips q. rugosa Ashmead, 1881. Amer. Ent. Soc., Trans. 9: Proc. p. xviii. ♀, ♂, gall.
Andricus (Andricus) rugosus Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 295.
- quercusscutula** (Bassett). Mass., Conn., N. Y., N. J., Va., Ind., Ill. Ecology: Produce stem galls on *Quercus coccinea*, *Q. velutina*.
Cynips q. scutula Bassett, 1864. Ent. Soc. Phila., Proc. 3: 683. ♀, ♂, gall.
Cynips scutula Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 341, 358.

- quercussimilis** (Bassett). Mass., Conn., N. Y., Md., Ga., Fla., Tex. Ecology: Produce stem galls on *Quercus ilicifolia* and other red oaks.
Cynips q. similis Bassett, 1864. Ent. Soc. Phila., Proc. 3: 685. ♀, ♂, gall.
Cynips similis Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 356.
- quercussuttonii** (Bassett). Calif. Ecology: Produce stem galls in agamic generation, leaf galls in sexual generation, on *Quercus agrifolia*, *Q. kelloggii*, *Q. wislizenii*.
Cynips Q. Suttonii Bassett, 1881. Canad. Ent. 13: 54. ♀, gall.
Andricus (*Callirhytis*) *Suttoni* Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 294.
Callirhytis polythra Kieffer, 1904. Soc. Hist. Nat. Metz, Bul. (2) 11: 132. ♀, gall.
- Biology: Lyon, 1969. Ent. Soc. Wash., Proc. 71: 61-65.
- quercussuttonii** var. *lustrior* (Kinsey). Calif. Ecology: Produce stem galls on *Quercus wislizenii*.
Plagiotrichus (!) *suttonii* var. *lustrior* Kinsey, 1922. Ind. Univ. Studies 53: 137. ♀, gall.
- quercusturnerii** (Ashmead). Fla. Ecology: Produce ament galls on *Quercus nigra*.
Cynips q. Turnerii Ashmead, 1881. Amer. Ent. Soc., Trans. 9: Proc. p. xvi. ♀, gall.
Andricus (*Andricus*) *Turnerii* Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 295.
Andricus topiarius Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 136. ♀, gall.
- quercusventricosa** (Bassett). Mass., Conn., to Ala., w. to Ill. Ecology: Produce stem galls on *Quercus ilicifolia*, *Q. imbricaria*, *Q. phellos*.
Cynips q. ventricosus Bassett, 1864. Ent. Soc. Phila., Proc. 3: 681. ♀, gall.
Cynips ventricosus Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 358.
Cynips q. confiera Ashmead, 1881. Amer. Ent. Soc., Trans. 9: Proc. p. xxvii. ♀, gall.
Neuroterus confierus Ashmead, 1885. Amer. Ent. Soc., Trans. 12: 296.
- rubida** Weld, Pa., Md., Ind., Ill. Ecology: Produce root galls on *Quercus coccinea*, *Q. rubra*.
Callirhytis rubida Weld, 1921. U. S. Natl. Mus., Proc. 59: 224. ♀, gall.
- rugulosa** (Beutenmueller). N. J., D. C., Va., Ind., Ill. Ecology: Produce bud galls on *Quercus rubra*, *Q. velutina*.
Andricus rugulosus Beutenmueller, 1911. Canad. Ent. 43: 211. ♀, gall.
- seminator** (Harris). Que. to Fla., w. to Minn., Iowa. Ecology: Produce large wooly, globular stem galls on *Quercus alba*. Wool sower; oak seed gall.
Cynips seminator Harris, 1841. Rpt. Ins. Mass. Injurious to Veg., p. 399. ♀, gall.
- seminosa** (Bassett). N. Y., Va., Ohio. Ecology: Produce stem galls on *Quercus coccinea*, *Q. palustris*.
Andricus (*Callirhytis*) *seminosus* Bassett, 1890. Amer. Ent. Soc., Trans. 17: 76. ♀, gall.
- serricornis** (Kinsey). Calif. Ecology: Produce ament galls in sexual generation, leaf galls in agamic generation, on *Quercus agrifolia*, *Q. wislizenii*.
Andricus serricornis Kinsey, 1922. Amer. Mus. Nat. Hist., Bul. 46: 288. ♀, ♂, gall. Sexual gen.
- Dryocosmus grumatus* Weld, 1952. U. S. Natl. Mus., Proc. 102: 336. ♀, gall. Agamic gen.
- Taxonomy: Lyon, 1970. Ent. Soc. Wash., Proc. 72: 176-178.
- tuberosa** (Bassett). Mass., Conn., N. J. Ecology: Produce stem galls on *Quercus ilicifolia*.
Andricus (*Callirhytis*) *tuberosa* Bassett, 1900. Amer. Ent. Soc., Trans. 26: 311. ♀, ♂, gall.
- tubicola** (Osten Sacken). D. C., Va., Miss., Okla., Tex. Ecology: Produce leaf galls on *Quercus stellata*.
Cynips tubicola Osten Sacken, 1861. Ent. Soc. Phila., Proc. 1: 60. ♀, gall.
Andricus texanus Beutenmueller, 1909. Ent. News 20: 248. ♀, gall.
- tumifica** (Osten Sacken). N. Y., Va., N. C., Ill., Iowa. Ecology: Produce leaf galls on *Quercus rubra*, *Q. velutina*.
Cynips tumifica Osten Sacken, 1865. Ent. Soc. Phila., Proc. 4: 356. ♀, ♂, gall.
- uvellae** Weld. Calif. Ecology: Produce bud galls on *Quercus agrifolia*, *Q. kelloggii*, *Q. wislizenii*.
Callirhytis uvellae Weld, 1944. U. S. Natl. Mus., Proc. 95: 23. ♀, gall.
- vaccinii** (Ashmead). N. Y., Ga., Fla., Mo., Okla., Tex. Ecology: Produce leaf galls on *Quercus stellata*.
Acraspis vaccinii Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 136. gall.

- Andricus lustrans* Beutenmueller, 1913. Amer. Ent. Soc., Trans. 39: 244. ♀.
Andricus impositus Beutenmueller, 1918. Ent. News 29: 329. ♀, gall.
Andricus dimorphus var. *verifactor* Kinsey, 1922. Ind. Univ. Studies 53: 15. ♀, gall.

UNPLACED SPECIES IN SUPERFAMILY CYNIPOIDEA

The manuscript names included in this list have all appeared at least once in some publication other than the original one.

Andricus acinosus Bassett, 1881. In Mayr, Zwanzig. Jahresber. Comm.-Oberrealsch. I. Bez. Wien., p. 28. MS.

Hexaplasta unnae Ashmead, 1897. In Slosson, Ent. News 8: 237. MS.

Cynips? aspera Stebbins, 1910. Springfield Mus. Nat. Hist., Bul. 2: 26. gall.

Neuroterus atomus Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 203. MS.

Kleidotoma bakeri Ashmead, 1900. In Howard, Wash. Acad. Sci., Proc. 2: 557. MS.

Oxytaxis bifoveolata Brues, 1904. Canad. Ent. 36: 119. ♂. Transf. from Diapriidae.

Taxonomy: Weld, 1967. In Krombein and Burks, U. S. Dept. Agr., Agr. Monog. Sup. 2, p. 284.

Cynips caducus Walsh, 1890. In Packard, U. S. Ent. Comn., Rpt. 5: 115. gall.

Andricus concinnus Bassett, 1882. Amer. Nat. 16: 246. MS.

Cynips? constricta Stebbins, 1910. Springfield Mus. Nat. Hist., Bul. 2: 20. gall.

Cynips (Neuroterus) crassitellus Provancher, 1881. Nat. Canad. 12: 233. ♀. Unique type in Provancher Collection in Quebec in bad condition.

Cynips? cristata Stebbins, 1910. Springfield Mus. Nat. Hist., Bul. 2: 24. gall.

Callirhytis flocculenta Trotter, 1910. Lab. Zool. Gen. e Agr. Portici, Bol. 5: 115. gall.

Rhodites fusiformis Cockerell, 1890. Entomologist 23: 75. gall.

Cynips (Andricus) gibbosus Provancher, 1881. Nat. Canad. 12: 232. ♀, ♂. Type in Provancher Collection in Quebec, but only thorax remains.

Rhodites globosus Cockerell, 1890. Entomologist 23: 75. gall.

Solenaspis hyalinus Ashmead, 1895. U. S. Dept. Agr., Insect Life 7: 326. Host: *Mesograpta polita* (Say) puparium. MS.

Neuroterus laurifoliae Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 140. ♀. Type lost.

Cynips maculatus Blanchard, 1840. In Laporte, Hist. Nat. Anim. Articles, v. 3, p. 250. "Carolina."

Eucoila minor Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 398. ♀. Type probably lost; not located in Quebec or Ottawa collections.

Rhodites bicolor var. *minor* Trotter, 1910. Lab. Zool. Gen. e Agr. Portici, Bol. 5: 103. gall.

Aegilips monticola Ashmead, 1902. In Slosson, Ent. News 13: 320, 17: 323. MS.

Periclistidea monticola Ashmead, 1902. In Slosson, Ent. News 13: 5. Both generic and specific names MS.

Eumayria multiarticulata Ashmead, 1887. Amer. Ent. Soc., Trans. 14: 133. gall.

Kleidotoma nigrosus Ashmead, 1906. In Nason, Ent. News 17: 9. ♀. MS.

Cynips? obovata Stebbins, 1910. Springfield Mus. Nat. Hist., Bul. 2: 24. gall.

Neuroterus? perpusillus Trotter, 1910. Lab. Zool. Gen. e Agr. Portici, Bol. 5: 107. gall.

Figites pini Harris, 1833. Geol. Mass., Rpt., p. 587. MS.

Diplolepis potentillae Harris, 1833. Geol. Mass., Rpt. p. 587. MS.

Andricus pseudocallidoma Trotter, 1910. Lab. Zool. Gen. e Agr. Portici, Bol. 5: 105. gall.

Cynips quercusfloccicola Riley, 1890. In Packard, U. S. Ent. Comn., Rpt. 5: 115. gall.

Cynips quercusfrondosa Bassett, 1864. Ent. Soc. Phila., Proc. 3: 688. gall.

Cynips quercusmellaria Riley, 1880. Amer. Ent. 3: 298. gall.

Cynips? sera Stebbins, 1910. Springfield Mus. Nat. Hist., Bul. 2: 24. gall.

Rhodites silvestrii Trotter, 1910. Lab. Zool. Gen. e Agr. Portici, Bol. 5: 103. gall.

Anacharis slossonae Ashmead, 1906. In Slosson, Ent. News 17: 323. MS.

Rhodites sphaericus Stebbins, 1910. Springfield Mus. Nat. Hist., Bul. 2: 38, 106. gall.

Rhodites spinosellus Cockerell, 1890. Entomologist 23: 75. gall.

Cynips (Rhodites?) tuberculosa Osten Sacken, 1861. Stettin Ent. Ztg. 22: 415. ♀, ♂, gall.

Trigonaspis? vaccinoidea Trotter, 1910. Lab. Zool. Gen. e Agr. Portici, Bol. 5: 107. gall.

Dryophanta vesiculoides Riley, 1895. Science, n.s., 1: 462. MS.

Superfamily EVANIOIDEA

By ROBERT W. CARLSON

This superfamily includes three families, Evaniidae, Aulacidae, and Gasteruptiidae. There appears to be little evidence to indicate that the Aulacidae and Gasteruptiidae are actually related to the Evaniidae. There does appear to be some evidence to indicate that the Aulacidae and Gasteruptiidae are distantly related. Because there is no evidence to suggest that a common ancestor of Aulacidae and Gasteruptiidae would have been less closely related to ancestral Evaniidae than to the ancestor of any other group, there is little reason for not maintaining placement of the Aulacidae and Gasteruptiidae in the Evanioidea.

Revision: Kieffer, 1912. *Das Tierreich*, v. 30, XIX and 431 p. (spp. of world).

Taxonomy: Crosskey, 1951. *Roy. Ent. Soc. London, Trans.* 102: 282-301. —Muesebeck and Walkley, 1956. *U. S. Natl. Mus., Proc.* 105: 319-419 (type-species).

Morphology: Crosskey, 1951. *Roy. Ent. Soc. London, Trans.* 102: 247-281.

Family EVANIIDAE

Members of this family are parasitic within the egg cases of cockroaches. Known hosts of the evaniids found in North America are members of the cockroach families Blattidae and Blatellidae. Species of Evaniidae are most numerous in the tropics.

Revision: Bradley, 1908. *Amer. Ent. Soc., Trans.* 34: 128-162. —Townes, 1949. *U. S. Natl. Mus., Proc.* 99: 525-539.

Taxonomy: Hedicke, 1939. *Hym. Cat.*, pt. 9, 50 p. (world catalog).

Genus EVANIA Fabricius

Evania Fabricius, 1775. *Systema Ent.*, p. 345.

Type-species: *Ichneumon appendigaster* Linnaeus. Desig. by Curtis, 1829.

According to Townes (1958) *Evania* is comprised of larger species which occur mostly in the Oriental region.

Taxonomy: Townes, 1958. *Ins. of Micronesia*, v. 19, no. 2, p. 84.

appendigaster (Linnaeus). Southeastern Mass., s.e. N. Y., s.e. Pa., D. C., Ga., Fla., Tenn., La., Tex., s. N. Mex., s. Ariz.; West Indies and Mexico s. to n. Argentina; Old World (especially warmer parts). Adventive. Host: *Blatta orientalis* L., *Periplaneta americana* (L.). I have found no published rearing records for North America, but because *appendigaster* has been reared from *P. americana* in other parts of the world there is no reason to doubt that it serves as a host in North America. I am not aware of

records of *appendigaster* as a parasite of *B. orientalis* which have been confirmed by authoritative identification of the adult parasites. Therefore, I do not feel certain that such records do not in fact apply to *Prosevania fuscipes* (Illiger). North of a latitude of approximately 37 degrees in the eastern United States *appendigaster* apparently ranges inland only rather short distances from the Atlantic coast. Some of the names cited in the synonymy below will possibly prove to be synonyms of *Prosevania fuscipes*, but Westwood's (1844) description of a specimen in "the Linnaean cabinet" (presumably the *appendigaster* type) seems to indicate that the name *appendigaster* correctly applies to the present species.

Ichneumon appendigaster Linnaeus, 1758. Syst. Nat., ed. 10, p. 566. Sex not indicated.

Ichneumon niger Goeze, 1780. In Degeer, Des ... Degeer Abhandl. zur Gesch. des Insecten, v. 3, p. 285. Sex not indicated?

Evania laevigata Olivier, 1791. Encycl. Meth., Dict. Ins., v. 6, p. 453. ♀.

Evania unicolor Say, 1824. In Keating, Narr. Long's 2nd Exped., v. 2 (App.), p. 320. Sex not indicated.

Evania Cubae Guerin-Meneville, 1834. Iconogr. Regne Anim., pl. 65, figs. 1-2. ♂. For date of publication see Cowan (1971, p. 28-29).

Evania Desjardinsii Blanchard, 1840. Hist. Nat. Anim. Artic., Ins., v. 3, p. 299. ♂.

Evania affinis Le Guillou, 1841. Soc. Ent. de France, Ann. 10: 311. ♂.

Evania appendigastra Hedqvist, 1973. Ent. Tidskr. 94: 178. Emend.

Taxonomy: Westwood, 1844 (1843). Ent. Soc. London, Trans. 3: 241-242. —Cowan, 1971. Soc. Bibliog. Nat. Hist., Jour. 6: 18-29 (dating of *E. cubae*).

Biology: Cameron, 1957. Bul. Ent. Res. 48: 199-209. —Roth and Willis, 1960. Smithsonian Misc. Coll. 141: 236.

Genus PROSEVANIA Kieffer

Evania subg. *Prosevania* Kieffer, 1911. Soc. Ent. de France, Ann. 80: 157.

Type-species: *Prosevania afra* Kieffer. Desig. by Viereck, 1914. Described as a subgenus, but in the case of *afra* treated nomenclatorially as a genus.

This is a large genus of the Old World Tropics.

fuscipes (Illiger), n. comb. Northwestern Mass. w. to s. Ohio, s. to n.e. N. C. and Ga.; s.e.

Europe, n.w. Asia, n. Africa. Adventive. Host: *Blatta orientalis* L., *Periplaneta americana* (L.). The name *punctata* (Brulle) has erroneously been treated as the senior name for this species for many years (since 1919 in North America). The names *Evania fuscipes* Illiger (1807) and *E. flavicornis* Curtis (1829) were proposed for *E. appendigaster* Linnaeus as misidentified by Panzer (1799), Latreille (1805), and Jurine (1807). There is little reason to doubt that the species identified as *appendigaster* by any of these three authors is the present species, but Panzer's figure in particular leaves no doubt whatsoever and is, therefore, here selected as lectotype for both the names *E. fuscipes* Illiger and *E. flavicornis* Curtis.

Evania fuscipes Illiger, 1807. In Rossi, Fauna Etrusca, ed. 2, v. 2, p. 83. [male].

Evania flavicornis Curtis, 1829. Brit. Ent., v. 6, pl. 257. [male].

Evania punctata Brulle, 1833. Exped. Sci. de Moree, v. 3, p. 378. sex not indicated. N. syn.

Evania urbana Bradley, 1908. Amer. Ent. Soc., Trans. 34: 140. ♂, ♀. N. syn.

Taxonomy: Panzer, 1799. Faunae Ins. German., fasc. 62, pl. 12. —Latreille, 1805. Hist. Nat. Crust. Ins., v. 13, p. 193. —Jurine, 1807. Nouv. Meth. Class. Hym. Dipt., v. 1, p. 85 and pl. 7, fig. 6. —Bequaert, 1919. Brooklyn Ent. Soc., Bul. 14: 23.

Biology: Edmunds, 1952; 1953. Ohio Jour. Sci. 52: 29-30; 53: 121-122. —Edmunds, 1954. Ent. Soc. Amer., Ann. 47: 575-592.

Genus EVANIELLA Bradley

Evaniella Bradley, 1905. Canad. Ent. 37: 64.

Type-species: *Evania unicolor* Say as misidentified by Ashmead (1901). Orig. desig. According to Bradley (1908), *Evaniella semaeoda* Bradley is the species which Ashmead identified as *unicolor*.

This is a large genus of Australian, Nearctic, and Neotropic distribution (particularly the latter).

Taxonomy: Ashmead, 1901. *Canad. Ent.* 33: 304. —Bradley, 1908. *Amer. Ent. Soc., Trans.* 34: 142-147.

californica (Ashmead). East-central Calif.

Evania Californica Ashmead, 1901. *Canad. Ent.* 33: 304. ♂.

Taxonomy: Snelling, 1963. *Pan-Pacific Ent.* 39: 108 (female described).

neomexicana (Ashmead). Southeastern N. Mex., s.e. Calif.

Evania Neomexicana Ashmead, 1901. *Canad. Ent.* 33: 304. ♂.

semaeoda Bradley. R. I. w. to s. Mich. and n.e. Kans., s. to s. Fla. and s. La.; West Indies.

Evaniella semaeoda Bradley, 1908. *Amer. Ent. Soc., Trans.* 34: 144. ♂, ♀.

Genus HYPTIA Illiger

Hyptia Illiger, 1807. In Rossi, *Fauna Etrusca*, ed. 2, v. 2, p. 82. Appeared as "*Hyptiam*" in accusative case, *Hyptia* being the nominative equivalent. *Fauna Etrusca*, ed. 2, v. 2 not necessarily published prior to volume six of Mag. f. *Insectenkunde*, but usually treated as prior in synonymies pertaining to various other generic names.

Hyptia Illiger, 1807. *Mag. f. Insectenkunde* 6: 192.

Type-species: *Evania petiolata* Fabricius. Monotypic.

This is a large genus of the New World, with many more Neotropic species than Nearctic ones. Rearing data are few, but the species appear to be parasites of forest dwelling Blattoidea such as *Parcoblatta* spp.

femorata Townes. Western Tex.

Hyptia femorata Townes, 1949. *U. S. Natl. Mus., Proc.* 99: 537. ♂, ♀.

floridana Ashmead. Western N. C. w. to n. La., s. to s. Fla.; Guatemala, Panama.

Hyptia Floridana Ashmead, 1901. *Canad. Ent.* 33: 303. ♂.

harpyoides Bradley. N. H. w. to s.e. Minn., s. to n.w. S. C., n. Miss., and n. Kans. Host:

Parcoblatta uhleriana (Sauss.), *P. virginica* (Brunn.). This species occurs farther north than any other evaniid in North America.

Hyptia harpyoides Bradley, 1908. *Amer. Ent. Soc., Trans.* 34: 151. ♂, ♀.

Hyptia brevicelear var. *glabriceps* Kieffer, 1910. *Soc. Ent. de France, Ann.* 79: 72. ♂.

oblonga Townes. Southwestern Ga., s. Ala., and s.e. Ariz. s. to s. Fla.; s. Mex., Costa Rica.

Hyptia oblonga Townes, 1949. *U. S. Natl. Mus., Proc.* 99: 538. ♂, ♀.

reticulata (Say). Mass. w. to mid Mich., s. to s. Fla., s. La., and s.w. Tex.; s. Mexico.

Brachygaster reticulata Say, 1836. *Boston Jour. Nat. Hist.* 1: 223. sex not indicated.

Hyptia nyctoides Bradley, 1908. *Amer. Ent. Soc., Trans.* 34: 159. ♂.

Hyptia prosetethetra Bradley, 1908. *Amer. Ent. Soc., Trans.* 34: 160. ♂.

thoracica (Blanchard). Mass., s. Ont., Wis., and n.e. Kans. s. to s. Fla. and s. Tex. Host:

Parcoblatta sp., *P. pensylvanica* (Deg.).

Evania thoracica Blanchard, 1840. *Hist. Nat. Anim. Artic., Ins.*, v. 3, p. 299. Sex not indicated.

Hyptiam thoracicum Shuckard, 1841. *Entomologist* 1: 120. ♂. Preocc. by Blanchard, 1840.

Evania dorsalis Westwood, 1851. *Ent. Soc. London, Trans.* (2) 1: 214. Unnecessary n. name for *E. thoracica* Blanchard, there being no *E. thoracica* Klug or Leach.

Evania brevicelear Kieffer, 1904. *Arkiv for Zool.* 1: 541. ♂.

Hyptia mylacridomanes Bradley, 1908. *Amer. Ent. Soc., Trans.* 34: 153. ♀.

Hyptia hyptiogastriis Bradley, 1908. *Amer. Ent. Soc., Trans.* 34: 160. ♂.

Hyptia texana Bradley, 1908. *Amer. Ent. Soc., Trans.* 34: 161. ♀.

Family AULACIDAE

The approximately 150 species of this small family are distributed throughout the world. All are thought to be parasites of wood boring Coleoptera or Hymenoptera.

Revision: Bradley, 1902 (1901). *Amer. Ent. Soc., Trans.* 27: 319-330 (date according to Ent.

News 13: 94). —Townes, 1950. *U. S. Natl. Mus., Proc.* 100: 87-120.

Taxonomy: Hedicke, 1939. Hym. Cat., pt. 10, 28 p. (world catalog). — Townes, 1950. U. S. Natl. Mus., Proc. 100: 85-86 (phyletic position). — Crosskey, 1951. Roy. Ent. Soc. London, Trans. 102: 249. — Crosskey, 1953. Ann. and Mag. Nat. Hist. (12) 6: 758-759.

Biology: Crosskey, 1951. Roy. Ent. Soc. London, Trans. 102: 285.

Morphology: Short, 1959. Ent. Monthly Mag. 95: 217-219 (final-instar larva).

Genus PRISTAULACUS Kieffer

Anlacostethus Philippi, 1873. Stettin. Ent. Ztg. 34: 302. Preocc. by Waterhouse, 1869 and Uhler, 1871.

Type-species: *Aulacostethus rubriventer* Philippi. Monotypic.

Pristaulacus Kieffer, 1900 (1899). Soc. Ent. de France, Ann. 68: 813.

Type-species: *Pristaulacus chlapowskii* Kieffer. Desig. by Kieffer, 1903.

Deraiodontus Bradley, 1901. Ent. Student 2: 29.

Type-species: *Aulacus montanus* Cresson. Included and desig. by Bradley, 1902.

Oleisoprister Bradley, 1902 (1901). Amer. Ent. Soc., Trans. 27: 324.

Type-species: *Aulacus firmus* Cresson. Orig. desig.

Anaulacus Semenov, 1903. Rev. Russe d'Ent. 3: 173. Preocc. by MacLeay, 1825.

Type-species: *Aulacus sibiricola* Semenov. Monotypic.

Semenovia Kieffer, 1903. In Andre, Spec. Hym. Eur. Alg., v. 7 (2nd), p. 382, 720. N. name for *Anaulacus* Semenov; preocc. by Weise, 1889.

Odontaulacus Kieffer, 1903. In Andre, Spec. Hym. Eur. Alg. 7 (2nd), p. 382.

Type-species: *Aulacus rufitarsis* Cresson. Desig. by Bradley, 1908.

Iteraulacus Bradley, 1908. Amer. Ent. Soc., Trans. 34: 123.

Type-species: *Iteraulacus kiefferi* Bradley. Monotypic and orig. desig.

Semenovia Bradley, 1908. Amer. Ent. Soc., Trans. 34: 123. N. name for *Anaulacus* Semenov and *Semenovia* Kieffer.

Tropaulacus Bradley, 1908. Amer. Ent. Soc., Trans. 34: 120, 125.

Type-species: *Tropaulacus torridus* Bradley. Monotypic and orig. desig.

Pristaulacus subg. *Neaulacus* Bradley, 1908. Amer. Ent. Soc., Trans. 34: 126.

Type-species: *Aulacus occidentalis* Cresson. Orig. desig.

Disaulacinus Kieffer, 1910. Soc. Ent. de France, Bul. 15: 350.

Type-species: *Disaulacinus flavimanus* Kieffer. By subsequent monotypy from inclusion by Kieffer, 1911.

Tetraulacinus Kieffer, 1910. Soc. Ent. de France, Bul. 15: 350.

Type-species: *Pristaulacus rufobalteatus* Cameron. By subsequent monotypy from inclusion by Kieffer, 1911.

Psilaulacus Kieffer, 1910. Soc. Ent. de France, Bul. 15: 350.

Type-species: *Psilaulacus annulatus* Kieffer. By subsequent monotypy from inclusion by Kieffer, 1911.

Members of this large genus presumably occur throughout the forested regions of the world.

arizonicus (Townes). Southeastern Ariz.

Aulacostethus arizonicus Townes, 1950. U. S. Natl. Mus., Proc. 100: 98. ♀.

bilobatus (Provancher). N. S. s. to w. N. C., w. to Wis. Ecology: Often associated with *Tsuga*.

Host: *Melanophila fulvoguttata* (Harris).

Aulacus bilobatus Provancher, 1878. Nat. Canad. 10: 237. ♂.

californicus (Townes). Northern Calif. Host: *Paratimia conicola* Fisher.

Aulacostethus californicus Townes, 1950. U. S. Natl. Mus., Proc. 100: 101. ♂, ♀.

canadensis (Townes). Maine, s. Man.

Aulacostethus canadensis Townes, 1950. U. S. Natl. Mus., Proc. 100: 102. ♂, ♀.

editus (Cresson). Northern Mich., s. B. C., Wash., n. Calif. Host: *Chrysophana placida* (LeC.), *Paratimia conicola* Fisher.

Aulacus editus Cresson, 1880. Amer. Ent. Soc., Trans. 8: v in Proc. ♀.

fasciatus (Say). Pa., D. C., Ohio, Mich., Ind., Mo., Ark. Ecology: One specimen in the U. S. Natl. Museum collection emerged from *Carya* wood.

Aulacus fasciatus Say, 1829. Contrib. Maclurian Lyceum to Arts and Sci. 1: 67. ♀.

- flavicurur** (Bradley). Vt. w. to n. Mich., s. to n.w. S. C. and Ill.
Deraiodontus flavicurur Bradley, 1902 (1901). Amer. Ent. Soc., Trans. 27: 322. ♀.
Pristaulacus flavipes Kieffer, 1904. Arkiv for Zool. 1: 559. ♂.
- foxleei** (Townes). Western Mont., n. Idaho, s. B. C., Wash., Oreg., n. Calif. Host: *Leptura obliterata* Hald.
Aulacostethus foxleei Townes, 1950. U. S. Natl. Mus., Proc. 100: 107. ♂, ♀.
- melleus** (Cresson). Nev., w. Wash., Oreg., n. Calif.
Aulacus melleus Cresson, 1879. Amer. Ent. Soc., Trans. 7: 255. ♀.
Aulacus consors Cresson, 1879. Amer. Ent. Soc., Trans. 7: 255. ♂.
Pristaulacus ferrugineus Kieffer, 1904. Soc. d'Hist. Nat. de Metz, Bul. (2) 11: 29. ♀.
- minor** (Cresson). Northwestern Wyo., n. Utah, n.w. Mont., n. Idaho, s. B. C., Wash., Oreg., n. Calif. Host: *Semanotus ligneus* (F.), *Melanophila drummondi* (Kby.), *M. intrusa* Horn.
Aulacus minor Cresson, 1880. Amer. Ent. Soc., Trans. 8: vi in Proc.
- montanus** (Cresson). Southern B. C. s. to Nev. and s. Calif. Host: *Xylotrechus nauticus* (Mann.), *Chrysobothris* sp.
Aulacus montanus Cresson, 1879. Amer. Ent. Soc., Trans. 7: 256. ♀.
Deraiodontus fuscatus Bradley, 1902 (1901). Amer. Ent. Soc., Trans. 27: 321. ♀.
Pristaulacus (Oleisoprister) dentatus Bradley, 1908. Amer. Ent. Soc., Trans. 34: 126. ♂.
- niger** (Shuckard), revised status. N. S. w. to Man. and Colo., s. to s. Fla. and Tex. Ecology: Occurs on dead pine trees.
Aulacus niger Shuckard, 1841 (June). Entomologist 1: 124. Sex not indicated.
Aulacus ater Westwood, 1841 (Sept.). Ann. Nat. Hist. 7: 538. ♀.
Aulacus Abbottii Westwood, 1841 (Sept.). Ann. Nat. Hist. 7: 538. ♀.
Pristaulacus [Pristaulacus] hopkinsii Bradley, 1908. Amer. Ent. Soc., Trans. 34: 127. ♀.
The variant spelling *hopkinsi* also appeared on p. 127 (key).
Pristaulacus aterrimus Kieffer, 1911. Soc. Ent. de France, Ann. 80: 230. Unnecessary n. name for *Aulacus ater* Westwood, the latter not being preocc. by *A. ater* Guerin-Meneville, 1844.
Pristaulacus floridana Rohwer, 1913. U. S. Natl. Mus., Proc. 45: 534. ♀.
- Taxonomy: Westwood, 1843. Ent. Soc. London, Trans. 3: 265-266. —Townes, 1950. U. S. Natl. Mus., Proc. 100: 95-96.
- occidentalis lavatus** (Townes). Northern Idaho, s. B. C., w. Wash., Oreg., n. Calif.
Aulacostethus occidentalis lavatus Townes, 1950. U. S. Natl. Mus., Proc. 100: 106. ♂, ♀.
- occidentalis occidentalis** (Cresson). Colo., N. Mex., n.w. Wyo., n. Idaho, n. Utah.
Aulacus occidentalis Cresson, 1879. Amer. Ent. Soc., Trans. 7: 255. ♀.
- oregonus** (Townes). Western Oreg.
Aulacostethus oregonus Townes, 1950. U. S. Natl. Mus., Proc. 100: 96. ♂, ♀.
- pacificus** (Cresson). Colo., n. Idaho, s. B. C., Wash., w. Oreg.
Aulacus pacificus Cresson, 1879. Amer. Ent. Soc., Trans. 7: 256. ♀.
- resutorivorus** (Westwood). Que. w. to s. B. C., s. to n. Va., Colo., and n. Calif. Host: *Arhopalus productus* (LeC.)?
Aulacus Resutorivorus Westwood, 1851. Ent. Soc. London, Trans. (2) 1: 224. ♀.
Aulacus firmus Cresson, 1879. Amer. Ent. Soc., Trans. 7: 256. ♀.
Aulacus subfirmus Bradley, 1901. Ent. Student 2: 31. [female]. Published as *A. subfirmus* "Viereck," but validated in key written by Bradley.
Oleisoprister subfirmus Viereck, 1902 (1901). In Bradley, Amer. Ent. Soc., Trans. 27: 325. ♀. Preocc. in *Pristaulacus* by Bradley, 1901.
- rufitarsis** (Cresson). Que. w. to Alaska, s. to w. N. C., Minn., N. Mex., and n. Calif. Host: *Graphisurus* sp., *Saperda calcarata* Say, *Chrysobothris caurina* Horn, *Melanophila drummondi* (Kby.), *M. fulvoguttata* (Harris).
Aulacus rufitarsis Cresson, 1864. Ent. Soc. Phila., Proc. 3: 134. ♀.
Aulacus abdominalis Cresson, 1880. Amer. Ent. Soc., Trans. 8: v in Proc. ♀.
Aulacus erythrogaster Kieffer, 1904. Arkiv for Zool. 1: 561. ♂, ♀.
Odontaulacus spinosipes Kieffer, 1910. Soc. Ent. de France, Ann. 79: 79. ♀.
- stigmaterus** (Cresson). Que. s. to n. Ga., w. to Mich. and Mo.
Aulacus stigmaterus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 134. ♀.

- Pristaulacus punctaticeps* Kieffer, 1910. Soc. Ent. de France, Ann. 79: 78. ♀.
strangaliae Rohwer, N. S. s. to n. Va., w. to s. Man.
Pristaulacus strangaliae Rohwer, 1917. U. S. Natl. Mus., Proc. 53: 157. ♀.
Pristaulacus (Oleisoprister) tanghanic Bradley, 1926. Brooklyn Ent. Soc., Bul. 21: 173. ♀.
Pristaulacus (Oleisoprister) glabrescens Bradley, 1926. Brooklyn Ent. Soc., Bul. 21: 174. ♀.
torridus (Bradley). Southern Tex.
Tropaenulacus torridus Bradley, 1908. Amer. Ent. Soc., Trans. 34: 125. ♀.
violaceus (Bradley). D. C., Va., s. Ohio.
Deraiodontus violaceus Bradley, 1905. Ztschr. System. Hym. Dipt. 5: 26. ♂, ♀.

Genus AULACUS Jurine

- Aulacus* Jurine, 1801. In Panzer, Litteratur-Ztg. Erlangen, Intelligenzbl. 1: 163. Nomen nudum.
Aulacus Jurine, 1807. Nouv. Method. Class. Hym. Dipt., v. 1, p. 89.
 Type-species: *Aulacus striatus* Jurine. Monotypic.
Aulacus subg. *Aulacinus* Westwood, 1869 (1868). Ent. Soc. London, Trans. 16: 331.
 Type-species: *Aulacus (Aulacinus) moerens* Westwood. Monotypic.
Pammegischia Provancher, 1882. Nat. Canad. 13: 302.
 Type-species: *Pammegischia burquei* Provancher. Monotypic.
Parafoenus Kieffer, 1910. Soc. Ent. de France, Bul. 15: 350.
 Type-species: *Parafoenus formosus* Kieffer. By subsequent monotypy from inclusion by Kieffer, 1911.
Neuraulacinus Kieffer, 1910. Soc. Ent. de France, Bul. 15: 350.
 Type-species: *Neuraulacinus braconiformis* Kieffer. Desig. by Kieffer, 1912 from three species included by Kieffer, 1911.
Micraulacinus Kieffer, 1910. Soc. Ent. de France, Bul. 15: 350.
 Type-species: *Micraulacinus elegans* Kieffer. By subsequent monotypy from inclusion by Kieffer, 1911.
Pycnaulacus Cushman, 1919. U. S. Natl. Mus., Proc. 76 (25): 17.
 Type-species: *Pycnaulacus brevicaudus* Cushman. Monotypic and orig. desig.
 Members of this moderate-sized genus presumably occur throughout the forested regions of the world.
aneurus Walkley. Southern N. Mex. Host: *Dendroctonus* sp.?, *D. adjunctus* Bland.? Muesebeck (1958) cited *Dendroctonus* sp. as a host without query, but none of the specimens in the U. S. Natl. Museum collection are known to have been reared from *Dendroctonus*; notes in the Hopkins file indicate that some of them emerged from trees infested with *D. adjunctus*, and that all were associated with *Dendroctonus*. Because *aneurus* does not seem to be too large to be a parasite of *D. adjunctus*, it seems possible that rearings will confirm *D. adjunctus* as a host.
Aulacus aneurus Walkley, 1952. Ent. Soc. Wash., Proc. 54: 185. ♂, ♀.
 Biology: Muesebeck, 1958. In Krombein et al., U. S. Dept. Agr., Agr. Monog. 2, Sup. 1, p. 88.
brevicaudus (Cushman). Southwestern Oreg. s. to n.w. and e.-central Calif. Ecology: Specimens have been reared from *Alnus rhombifolia* and twigs of *Salix* bearing *Euvra* galls.
Pycnaulacus brevicaudus Cushman, 1930 (1929). U. S. Natl. Mus., Proc. 76 (25): 18. ♀.
burquei (Provancher). N. S. s. to Md., w. to Mich. Host: *Xiphydria maculata* Say.
Pammegischia Burquei Provancher, 1882. Nat. Canad. 13: 303. ♀.
digitalis Townes. Mass., Conn., Pa., n. W. Va., n. Ohio. Host: *Xiphydria maculata* Say.
Aulacus digitalis Townes, 1950. U. S. Natl. Mus., Proc. 100: 118. ♂, ♀.
dispilus Townes. Southern Tex. Ecology: One specimen is reported to have emerged from *Celtis laevigata*.
Aulacus dispilus Townes, 1950. U. S. Natl. Mus., Proc. 100: 114. ♀.
lovei (Ashmead). Que., Vt., Mass., N. Y., N. J., Pa., Md. Host: *Xiphydria abdominalis* Say, *X. champlaini* Roh., *X. tibialis* Say.
Pammegischia Lovei Ashmead, 1901. Canad. Ent. 33: 301. ♀.
Pammegischia ouelletii Bradley, 1902 (1901). Amer. Ent. Soc., Trans. 27: 329. ♂.

pallipes Cresson. N. B. w. to s. B. C., s. to n. Va., Mo., n. Idaho, and n.e. Wash.? Host:

Xiphydria mellipes Harris. In the U. S. Natl. Museum collection there are two females from Metaline Falls, Wash. (a locality cited for *pallipes* in Townes' [1950] revision of the Aulacidae) which are less melanistic than other *pallipes* specimens in the collection. They bear Hopkins no. 21306, the card for which indicates that they were collected while ovipositing in *Pseudotsuga menziesii* infested by *Buprestis* sp. *P. menziesii* is not known to be a host for any Xiphydriidae.

Aulacus pallipes Cresson, 1879. Amer. Ent. Soc., Trans. 7: xvii in Proc. ♂.

Pammegischia xiphydriae Ashmead, 1901 (Nov. 8). Canad. Ent. 33: 300. ♀.

Pammegischia Weedi Ashmead, 1901 (Nov. 8). Canad. Ent. 33: 301. ♂.

Pammegischia xiphydriae Ashmead, 1901 (Nov. [31]). Ent. News 12: 278. ♀. Preocc. by Ashmead, 1901 (Nov. 8), which is based upon the same holotype.

Aulacus pallidipes Dalla Torre, 1902. Cat. Hym., v. 3, p. 1061. Emend.

Pammegischia ashmeadi Bradley, 1908. Amer. Ent. Soc., Trans. 34: 122. ♀.

Pammegischia minnesotae Bradley, 1908. Amer. Ent. Soc., Trans. 34: 122. ♂.

Family GASTERUPTIIDAE

This small family is nearly worldwide in distribution (unknown from Micronesia and Polynesia). Crosskey (1962) recognized two subfamilies, the Hyptiogastrinae with five genera and the Gasteruptiinae with one genus. Because Gasteruption includes the vast majority of Gasteruptiidae, there is little practical value in recognizing two subfamilies at this time.

The accounts of the biologies of Gasteruptiidae given by Hoepfner (1904) and Malyshev (1968) indicate that the larvae are predators or predator-inquilines in the nests of solitary bees and sphecids which nest in wood. According to Hoepfner, the egg of *Gasteruption assectator* (Linnaeus) is laid on a mature larva of the prey. After consuming the latter, the *assectator* larva invades the cell of a second prey larva and consumes it also. The species discussed by Malyshev deposited their eggs in proximity to an egg of a solitary bee, the exact positioning of eggs varying among species of gasteruptiids. Upon eclosion from the egg the gasteruptiid larva consumed the egg of the bee. Sometimes the larva would then complete its development by feeding upon the provisions in the same bee larval cell but often invaded one or more other cells where they consumed both bee larvae and provisions.

Revision: Townes, 1950. U. S. Natl. Mus., Proc. 100: 120-145.

Taxonomy: Hedicke, 1939. Hym. Cat., pt. 11, 54 p. (world catalog). —Crosskey, 1962. Roy. Ent. Soc. London, Trans. 114: 377-402 (genera of world).

Biology: Hoepfner, 1904. Allg. Ztschr. f. Ent. 9: 97-103. —Malyshev, 1968. Genesis of Hym. and ... their Evolution, p. 42-46.

Morphology: Crosskey, 1951. Roy. Ent. Soc. London, Trans. 102: 247-281. —Short, 1952. Roy. Ent. Soc. London, Trans. 103: 45-48, 49 (final-instar larva).

Genus GASTERUPTION Latreille

Gasteruption Latreille, 1796. Precis Caract. Gen. Ins., p. 113.

Type-species: *Ichneumon assectator* Linnaeus. Desig. by Viereck, 1914 from 83 species included by Schletterer, 1885. The discussion by Crosskey (1962, p. 396-397) is based upon the erroneous assumption that species are included in a genus described without included species by virtue of suppression of its name in the synonymy of a genus having species.

Foenus Fabricius, 1798. Sup. Ent. System., p. 210, 240.

Type-species: *Ichneumon assectator* Linnaeus. Desig. by Curtis, 1832. I do not accept Latreille, 1810 as designator of any type-species.

Gastryptium Agassiz, 1846. Nomencl. Zool., Index Univ., p. 160. Emend.

Gasteruption Semenov, 1892. Acad. Imp. des Sci. St. Petersburg, Bul. (n. s.) 3: 12. Emend. Schletterer (1890) suggested this spelling but used *Gasteruption*.

Gasteryptium Schulz, 1906. Spolia Hym., p. 133. Emend.

Rhydinofoenus Bradley, 1909. Deut. Ent. Ztschr. (for 1909), p. 38.

Type-species: *Rhydinofoenus kawahensis* Bradley. Orig. desig.

Trichofoenus Kieffer, 1910. Soc. Ent. de France, Ann. 79: 77.

Type-species: *Gasteruption merceti* Kieffer. Orig. desig.

Dolichofoenus Kieffer, 1910. Soc. Ent. de France, Ann. 79: 77.

Type-species: *Foenus raphidioides* Westwood. Orig. desig.

Gastrhyptium Schulz, 1911. Zool. Ann. 4: 55. Emend.

Plutofoenus Kieffer, 1911. Soc. Ent. de France, Ann. 80: 177.

Type-species: *Gasteruption paraguayense* Schrottky. Monotypic and orig. desig.

This is a very large genus which is nearly worldwide in distribution. Crosskey (1962) was unable to find satisfactory means for distinguishing more than one genus for the 400 plus species now included in *Gasteruption*.

Taxonomy: Schletterer, 1890. Wien. Mus. der Naturgesch., Ann. 4: 375. — Crosskey, 1962.

Roy. Ent. Soc. London, Trans. 114: 394-398.

amputatum Townes. Colo., Ariz.

Gasteruption amputatum Townes, 1950. U. S. Natl. Mus., Proc. 100: 128. ♂, ♀.

assectator (Linnaeus). N. S. w. to Alaska, s. to w. N. C., n.e. Kans., Ariz., and n. Calif.; Eurasia.

Host: *Hylaenus ellipticus* (Kby.), *Megachile rotundata* (F.). Additional hosts are known from Europe.

Ichneumon assectator Linnaeus, 1758. Syst. Nat., ed. 10, p. 566. ♀.

Ichneumon annularis Geoffroy, 1785. In Fourcroy, Ent. Parisiensis, v. 2, p. 398. Sex not indicated.

Ichneumon affectator(!) de Villers, 1789. C. Linnaei Ent., v. 3, p. 174.

Foenus montanus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 132. ♀.

Foenus incertus Cresson, 1864. Ent. Soc. Phila., Proc. 3: 133. ♂, ♀.

Feonus(!) *Arca* Couper, 1870. Canad. Ent. 2: 110. ♀. N. syn.

Foenus fumipennis Thomson, 1883. Opusc. Ent. 9: 848. ♀.

Foenus bidentulus Thomson, 1883. Opusc. Ent. 9: 848. ♀. Apparently no syntype from Gotland (=Gottland) could be found, and Hedqvist (1973) based his synonymy on a female from Norway which he incorrectly referred to as the lectotype.

Foenus borealis Thomson, 1883. Opusc. Ent. 9: 849. ♂, ♀.

Foenus nigratarsis Thomson, 1883. Opusc. Ent. 9: 849. ♂, ♀.

Gasteruption assectator var. *nitidulum* Schletterer, 1885. Zool.-Bot. Gesell. Wien, Verh. 35: 276. ♂, ♀.

Gasteruption micrura Kieffer, 1904. Arkiv for Zool. 4: 556. ♀. N. syn.

Gasteruption micrura var. *nigripictus* Kieffer, 1904. Arkiv for Zool. 4: 556. ♀. N. syn.

Gasteruption Nevadaense Kieffer, 1904. Invertebrata Pacifica 1: 41. ♂, ♀.

Gasteruption Bakeri Kieffer, 1910. Soc. Ent. de France, Ann. 79: 75. ♀. N. syn.

Trichofoenus canadensis Kieffer, 1910. Soc. Ent. de France, Ann. 79: 77. ♀. N. syn.

Gasteruption Bakeri var. *aberrans* Strand, 1912. Arch. f. Naturgesch. 76A (6): 27. ♂, ♀. N. syn.

Foenus arcus Bradley, 1908. Amer. Ent. Soc., Trans. 34: 117. Emend.

Trichofoenus micrurus(!) Bradley, 1928. In Leonard, Cornell Univ. Agr. Expt. Sta., Mem. 101: 961.

Trichofoenus breviterebrae Watanabe, 1934. Sapporo Nat. Hist. Soc., Trans. 13: 285. ♂, ♀.

Trichofoenus micrurus Hedicke, 1939. Cat. Hym., pt. 11, p. 43. Emend.

Gasteruption assectator utahensis Townes, 1950. U. S. Natl. Mus., Proc. 100: 126. ♂, ♀. N. syn.

Taxonomy: Roman, 1932. Ent. Tidskr. 53: 3 (notes on type of *assectator*). — Pasteels, 1956. Mus. du Congo Belge, Ann. Zool. 50: 10 (syn.). — Hedqvist, 1973. Ent. Tidskr. 94: 181-182 (types of Thomson names).

Biology: Hoeppner, 1904. Allg. Zeit. f. Ent. 9: 97-103.

barnstoni barnstoni (Westwood). N. S. w. to Alaska, s. to n.e. W. Va., central Ohio, n. Ill., s. Man., and s. Alta.

Foenus Barnstoni Westwood, 1851. Ent. Soc. London, Trans. (2) 1: 220. ♀.

Gasteruption pensile Schletterer, 1890. Wien. Mus. der Naturgesch., Ann. 4: 483. ♀.

Gasteruption barnstonii Dalla Torre, 1902. Cat. Hym., v. 3, p. 1065. Emend.

Foenus cressoni Bradley, 1908. Amer. Ent. Soc., Trans. 34: 113. ♂, ♀.

Gasteruption Klagesi Kieffer, 1910. Soc. Ent. de France, Ann. 95: 75. ♂.

- barnstoni perplexum** (Cresson). Southern Sask. w. to s.w. Alta. and n.w. B. C., s. to N. Mex., Ariz., and n. Calif. Future collecting may show that the region of overlap between *b. perplexum* and the nominate form is too broad for them to be meaningfully treated as subspecies.
- Foenus perplexus* Cresson, 1864. Ent. Soc. Phila., Proc. 3: 131. ♀.
- Foenus fragilis* Bradley, 1908. Amer. Ent. Soc., Trans. 34: 111. ♀.
- Gasteruption alticola* Kieffer, 1910. Soc. Ent. de France, Ann. 79: 76. ♀.
- enode** (Townes), n. comb. Ariz., s.e. Calif.
- Rhydinofoenus enodis* Townes, 1950. U. S. Natl. Mus., Proc. 100: 140. ♀.
- floridanum bradleyi** (Townes), n. comb. Southern Me. w. to s. Wis. and n.e. Kans., s. to w. N. C., n. Miss., and s. Tex. Two host records were given by Walkley (1967), but I find no specimens of *f. bradleyi* bearing host records in the U. S. Natl. Museum collection, and I have reason to doubt the accuracy of the identification of the parasites.
- Rhydinofoenus floridanus bradleyi* Townes, 1950. U. S. Natl. Mus., Proc. 100: 139. ♂, ♀.
- Biology: Walkley, 1967. In Krombein *et al.*, U. S. Dept. Agr., Agr. Monog. 2, sup. 2, p. 285.
- floridanum floridanum** (Bradley). Northeastern N. C., s. Ga., Fla.; Cuba.
- Foenus floridanus* Bradley, 1908. Amer. Ent. Soc., Trans. 34: 112. ♂, ♀.
- kaweahense** (Bradley). Southern La., s.e. Tex., central and s. Calif.; Mexico? Host: *Ceratina pacifica* (Smith). A specimen in the U. S. Natl. Museum collection is labeled "San Rafael Jicoltepec, collection Ashmead"; in the gasteruption revision of Townes (1950) that locality is cited as being in Mexico, but no place by that name exists in Mexico, and "Jicoltepec" is possibly a misspelling of Jilotepec.
- Rhydinofoenus kaweahensis* Bradley, 1909. Deut. Ent. Ztschr. (for 1909), p. 39. ♀.
- Biology: Daly, Stage, and Brown, 1967. Ent. Soc. Amer., Ann. 60: 1279.
- kirbii kirbii** (Westwood). N. S., P. E. I., N. B., Que., N. Y., Ont., "Hudson Bay," Mich., Wis., Sask., s. B. C. Host: *Hylaeus modestus* Say.
- Foenus Kirbii* Westwood, 1851. Ent. Soc. London, Trans. (2) 1: 219. ♀.
- Gasteruption kirbyi* (!) Dalla Torre, 1902. Cat. Hym., v. 3, p. 1068.
- Gasteruption kirbyi* Hedicke, 1939. Cat. Hym., pt. 11, p. 32. Emend.
- kirbii russeum** Townes. Colo., n.w. Wyo., n. Idaho, s. B. C., w. Wash., Oreg., n. Calif. Host: *Hoplitus saubuci* Titus, *Megachile rotundata* (F.).
- Gasteruption kirbii russeus* Townes, 1950. U. S. Natl. Mus., Proc. 100: 123. ♂, ♀.
- nevadae** (Bradley). Southern N. Mex., w. Nev., n. and s. Calif.
- Foenus nevadae* Bradley, 1908. Amer. Ent. Soc., Trans. 34: 114. ♀.
- occidentale** (Cresson). Northwestern Mont. w. to s. B. C., s. to Ariz. and s. Calif.
- Foenus occidentalis* Cresson, 1864. Ent. Soc. Phila., Proc. 3: 131. ♀.
- Gasteruption egregium* Schletterer, 1890. Wien. Mus. der Naturgesch., Ann. 4: 486. ♀.
- pattersonae** Melander and Brues, restored comb. Southern Idaho, n. Utah, central Wash. s. to s. Calif. Host: *Dianthidium curvatum sayi* Ckll.
- Gasteruption pattersonae* Melander and Brues, 1902. Biol. Bul. 3: 35. ♀.
- Gasteruption pyrrothosternum* Kieffer, 1904. Invertebrata Pacifica 1: 41. ♀.
- Gasteruption rubrofasciatum* Kieffer, 1904. Invertebrata Pacifica 1: 42. ♂.
- septentrionale** Schletterer, restored comb. Western Colo., s.w. Alta., n. Ariz., s. B. C., s.e. Oreg.
- Gasteruption septentrionale* Schletterer, 1890. Wien. Mus. der Naturgesch., Ann. 4: 480. ♀.
- striatus** (Townes), n. comb. Northern Idaho w. to s.w. B. C., s. to w. Nev. and s. Calif.
- Rhydinofoenus striatus* Townes, 1950. U. S. Natl. Mus., Proc. 100: 132. ♂.
- tarsatorium solare** (Townes), n. comb. Northeastern Kans., s. Ariz.
- Rhydinofoenus tarsatorium solaris* Townes, 1950. U. S. Natl. Mus., Proc. 100: 137. ♂, ♀.
- tarsatorium tarsatorium** (Say). Que. s. to e. S. C., w. to Iowa and Mo. Rau (1922, 1928) published two host records; there is one specimen of this subspecies in the U. S. Natl. Mus. collection bearing only Rau no. 4439, so one of the host records is possibly correct.
- Foenus tarsatorius* Say, 1824. In Keating, Narr. Long's Exped., v. 2, p. 321. ♀.
- Gasteruption intricatum* Kieffer, 1904. Arkiv for Zool. 1: 556. ♀.
- Biology: Rau, 1922; 1928. Acad. Sci. St. Louis, Trans. 24: 43; 25: 404.

turbinatum (Townes), n. comb. Southeastern Ariz. This species is known from the Pinaleno and Chiricahua Mts.

Rhydingfoenus turbinatus Townes, 1950. U. S. Natl. Mus., Proc. 100: 138. ♂, ♀.

visaliae (Bradley). Southern Tex., s. Ariz., n.w. Oreg. s. to s. Calif.; n.w. Mexico. Host: *Hylaeus cressoni* Ckll.

Foenus visaliae Bradley, 1909. Deut. Ent. Ztschr. (for 1909), p. 40. ♀.

Superfamily PELECINOIDEA

By CARL F. W. MUESEBECK

Taxonomy: Handlirsch, 1933. Handbuch der Zoologie, v. 4 (2), Insecta 2, pp. 981-982.

Family PELECINIDAE

The relationships of this family have not been satisfactorily established. More commonly, although with some reservations, the group has been treated as a family of the Proctotrupoidea. Until its affinities are better understood it seems best to follow Handlirsch (1933) and consider it as representing an independent superfamily.

Taxonomy: Ashmead, 1900. U. S. Natl. Mus., Proc. 23: 3. — Ashmead, 1902. N. Y. Ent. Soc., Jour. 10: 242-243. — Schulz, 1903. Bayer. Akad. der Wiss., Math.-Phys. Kl. Sitzber. 33: 435-440.

Biology: Clausen, 1962. Entomophagous Insects, pp. 270-271 (This author suggests that although the Pelecinidae have been recorded as internal parasites of ground-inhabiting scarabaeid larvae the principal hosts may actually be coleopterous larvae living in decaying wood.).

Genus PELECINUS Latreille

Pelecinus Latreille, 1800. Bul. Sci. Soc. Philom., Paris, 2(44): 155.

Type-species: *Ichneumon polycerator* Fabricius. Desig. by Latreille, 1810.

Epiceuastes Gistel, 1848. Naturgesch. Thierr. f. hoh. Schul., p. X, col. 1. N. name, unnecessarily proposed for *Pelecinus* Latreille, thought to be preocc. by *Pelecinus* Moench in Botany.

This genus, which comprises the family Pelecinidae, appears to be represented in North America by a single variable species that ranges from Canada far down into South America. It is quite possible that a critical study of the rather large accumulations of specimens contained in some of the principal insect collections will prove this supposed taxon to be actually a complex of several distinct species. Descriptions, in fact, have been published under a number of different specific names. At present, however, these are all treated as applicable to a single species.

Taxonomy: Latreille, 1825. Encycl. Meth., Ins., v. 10, pp. 29-30. — Klug, 1841. Ztschr. f. Ent. 3: 379-385. — Westwood, 1843. Ent. Soc. London, Trans. 3: 247-251. — Schletterer, 1889. Berlin. Ent. Ztschr. 33: 226-237. — Brues, 1928. Psyche 35: 205-209.

Biology: Forbes, 1894. Ill. State Ent., Rpt. 18, p. 124. — Petch and Hammond, 1926. Ent. Soc. Ontario, 56th Ann. Rpt., pp. 86-87. — Hammond, 1944. Canad. Ent. 76: 130.

Morphology: Snodgrass, 1941. Smithsn. Misc. Collect. 99 (14): 38-40 (male genitalia).

polyturator (Drury). Que. and Ont. s. to Argentina. Host: *Phyllophaga anxia* (Lec.); *P. futilis* (Lec.).

Ichneumon polyturator Drury, 1773. Illus. Nat. Hist., v. 2, p. 77, Index p. [92]. ♀.

Ichneumon polycerator Fabricius, 1776. Gen. Ins. ... mantissa specierum, p. 245. ♀.

Ichneumon libellula Christ, 1791. Naturgesch. Class. Nomencl. Ins., p. 352. ♀.

Pelecinius clavator Latreille, 1817. Nov. Dict. Hist. Nat., v. 3, p. 237. ♂.

Pelecinius tibiator Perty, 1833. Delect. Anim. Articuli. Brasil, p. 131. ♀.

Pelecinius dichrous Perty, 1833. Delect. Anim. Articuli. Brasil, p. 131. ♀.

Pelecinius Guerinii Romand, 1840. Mag. de Zool. (2), pl. 49, fig. 2. ♀.

Pelecinius annulatus Klug, 1841. Ztschr. f. Ent. 3: 384. ♂.

Pelecinius rufus Klug, 1841. Ztschr. f. Ent. 3: 384. ♂, ♀.

Pelecinius thoracicus Klug, 1841. Ztschr. f. Ent. 3: 384. ♂.

Pelecinius Duponchelii Romand, 1842. Mag. de Zool. (2), pl. 86, fig. 1. ♂, ♀.

Pelecinius Spinolae Romand, 1842. Mag. de Zool., (2), pl. 86, fig. 2. ♀.

Pelecinius brunneipes Patton, 1894. Amer. Nat. 28: 896. ♀.

Superfamily PROCTOTRUPOIDEA

By CARL F. W. MUESEBECK

This is a large and diverse group of parasitic Hymenoptera, but the North American proctotrupoid fauna has had little critical study with the result that apparently most of our species remain undescribed. The only comprehensive treatments of the North American Proctotrupoidea are that by Ashmead, in 1893, and that included by Kieffer in his monograph of the world fauna, which comprises three volumes that were published between 1914 and 1926. Kieffer used the name Serphoidea, based on *Serphus* Schrank, 1780, for this superfamily and that usage was followed generally in the literature of the next thirty years; but *Serphus* Schrank was set aside by the International Commission on Zoological Nomenclature in 1946 (Opinion 178), under suspension of the Rules, and its synonym *Proctotrupes* Latreille, 1796, with *P. brevipennis* Latreille as type-species, was added to the Official List of Generic Names in Zoology as Name No. 616. As a result of that action the name Proctotrupoidea has come into general use again.

I am indebted to Dr. Lubomir Masner, Biosystematics Research Institute, Canada Department of Agriculture, for much helpful advice and for new records, in connection with the preparation of this section of the Catalog.

Revision: Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 5-472 (the Bethyilidae and Dryinidae were included). —Kieffer, 1907-1914. *In* Andre, Spec. Hym. Eur. Alg., v. 10, pp. 1-1014 and v. 11, pp. 1-447. —Kieffer, 1914-1926. Das Tierreich, Lief. 42 (1914), pp. VI-XVII, 1-254; Lief. 44 (1916), pp. VI-XXX, 1-627; Lief. 48 (1926), pp. VII-XXXVI, 1-885.

Taxonomy: Ashmead, 1887. Ent. Amer. 3: 73-76, 97-100, 117-119. —Harrington, 1899. Roy. Soc. Canada, Trans. (2) 5: 117-206. —Ashmead, 1902-1903. N. Y. Ent. Soc., Jour. 10: 240-247 (1902); 11: 28-35 and 86-99 (1903). —Mani, 1941. Cat. Indian Ins., part 26, pp. 1-60. —Risbec, 1950. Trav. Lab. d'Ent. du Sect. Soudanais de Recherches Agron., v. 2, pp. 511-637. —Muesebeck and Walkley, 1956. U. S. Natl. Mus., Proc. 105: 319-419 (Types of the genera and subgenera). —Masner, 1965. Brit. Mus. (Nat. Hist.), Bul., Ent., Sup. 1, pp. 3-154. —Masner, 1965. Psyche 72: 295-304. —Masner and Muesebeck, 1968. U. S. Natl. Mus. Bul. 270: 1-143. —Masner, 1969. Nat. Canad. 96: 775-784. —Kozlov, 1970. Ent. Obozr. 49: 203-226 (English transl.: Ent. Rev. 49: 115-127). —Kozlov, 1971. Soc. Ent. Unionis Soviet., Horae 54: 7-67.

Biology: Clausen, 1962. Entomophagous Insects, pp. 239-270.

Morphology: Snodgrass, 1941. Smithsn. Misc. Collect. 99 (14): 38-41. —Reid, 1941. Roy. Ent. Soc. London, Trans. 91: 428-430. —Pschorn-Walcher, 1955. Schweiz. Ent. Gesell., Mitt. 28: 214-219.

Family VANHORNIIDAE

This family is represented by a single known species, specimens of which seem to be rare in collections. The group appears to be closely related to the Heloridae and the Roproniidae.

Genus VANHORNIA Crawford

Vanhornia Crawford, 1909. Ent. Soc. Wash., Proc. 11: 63.

Type-species: *Vanhornia eucnemidarum* Crawford. Orig. desig.

eucnemidarum Crawford. Que., Maine, N. H., Mass., Conn., N. Y., Pa., Md., Va. Host: Larvae of Eucnemidae.

Vanhornia eucnemidarum Crawford, 1909. Ent. Soc. Wash., Proc. 11: 63. ♀, ♂.

Family ROPRONIIDAE

This is another small, little-known group that is poorly, if at all, represented in most collections. The species appear to be parasites of sawfly larvae.

Revision: Townes, 1948. U. S. Natl. Mus., Proc. 98: 85-89.

Taxonomy: Ashmead, 1898. Ent. Soc. Wash., Proc. 4: 132-133. —Bradley, 1905. Ent. News 16: 14-17. —Yasumatsu, 1956. Insecta Matsumurana 19: 117-122. —Yasumatsu, 1958. Insecta Matsumurana 21: 112-114. —Heqvist, 1959. Ent. Tidskr. 80: 137-139. —Yasumatsu, 1961. Mushi 35: 68-69.

Biology: Chao, 1957. Fukien Agr. Jour. 5: 73-76 (*Ropronia* reported to be parasitic on sawfly larvae).

Genus ROPRONIA Provancher

Ropronia Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., pp. 152, 154.

Type-species: *Ropronia pediculata* Provancher. Monotypic.

Roptronia Ashmead, 1898. Ent. Soc. Wash., Proc. 4: 132. Error.

californica Ashmead. Calif., Oreg.

Roptronia (!) *californica* Ashmead, 1898. Ent. Soc. Wash., Proc. 4: 133. ♂.

garmani Ashmead. N. H. to Ga., w. to Iowa.

Roptronia (!) *garmani* Ashmead, 1898. Ent. Soc. Wash., Proc. 4: 132. ♂.

pediculata Provancher. Ont., N. Y. Host: *Monoctenus suffusus* (Cress.). (Record communicated by L. Masner in correspondence).

Ropronia pediculata Provancher, 1886. Addit. Corr. Faune Ent. Canada Hym., p. 154. ♀.

Ropronia ashmeadii Bradley, 1905. Ent. News 16: 17. ♀.

Family HELORIDAE

The members of this family are internal parasites of the larvae of Chrysopidae.

Revision: Pschorn-Walcher, 1955. Schweiz. Ent. Gesell., Mitt. 28: 233-250 (Palearctic species).

Taxonomy: Ashmead, 1893. U. S. Nat. Mus., Bul. 45: 330-331. —Ashmead, 1902. N. Y. Ent. Soc., Jour. 10: 243. —Kieffer, 1914. Das Tierreich, Lief. 42, pp. 57-62. —Riek, 1955. Austral. Jour. Zool. 3: 258-265. —Ceballos, 1965. Graellsia 21: 11-16.

Morphology: Oeser, 1961. Berlin Zool. Mus., Mitt. 37: 72-73 (ovipositor).

Genus HELORUS Latreille

Helorus Latreille, 1802. Hist. Nat. Crust. Ins., v. 3, p. 309.

Type-species: *Helorus ater* Latreille. Monotypic.

Copelus Provancher, 1881. Nat. Canad. 12: 206.

Type-species: *Copelus paradoxus* Provancher. Monotypic.

paradoxus (Provancher). As currently identified this species occurs throughout Continental United States (except Alaska); known also from N. B. and B. C. Host: *Chrysopa majuscula* Banks; *Chrysopa* spp.

Copelus paradoxus Provancher, 1881. Nat. Canad. 12: 207. ♀.

Biology: Clancy, 1946. Calif. Univ. Pub., Ent. 7, pp. 407-418. — Clausen, 1962. Entomophagous Insects, p. 266-270.

Family PROCTOTRUPIDAE

The Proctotrupidae are principally internal parasites of the larvae of Coleoptera, including those of Carabidae, Staphylinidae, Nitidulidae, Erotylidae, Elateridae, Coccinellidae and Curculionidae. However, certain forms are said to have been reared from larvae of the dipterous family Mycetophilidae; and there is also what appears to be a reliable record (Newman, 1867) of the rearing of a species of *Phaenoserphus* from a centipede of the genus *Lithobius*.

Revision: Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 331-344 (Nearctic species). — Kieffer, 1914. Das Tierreich, Lief. 42, pp. 1-57 (World fauna). — Nixon, 1938. Roy. Ent. Soc. London, Trans. 87: 431-465 (British species). — Riek, 1955. Austral. Jour. Zool. 3: 106-117 (Australian species).

Taxonomy: Brues, 1919. N. Y. Ent. Soc., Jour. 27: 1-19 (Key to Nearctic species). — Morley, 1922. Entomologist 55: 1-3, 59-60, 82-83, 108-110, 132-135, 157-161, 182-186.

— Pschorn-Walcher, 1958. Schweiz. Ent. Gesell., Mitt. 31: 57-64. — Masner, 1958. Beitr. z. Ent. 8: 477-481. — Pschorn-Walcher, 1958. Beitr. z. Ent. 8: 724-731. — Masner, 1961. Parc Natl. Upemba Miss. de Witte, fasc. 60, pp. 37-47 (Key to the genera of the world). — Kozlov, 1970. Ent. Obozr. 49: 203-209 (English transl.: Ent. Rev. 49: 115-118). — Kozlov, 1971. Soc. Ent. Unionis Soviet., Horae 54: 7-12.

Biology: Newman, 1867. Entomologist 3: 342-344. — Frohawk, 1886. Entomologist 19: 225. — Eastham, 1929. Parasitology 21: 1-21. — Zolk, 1924. Tartu Ulukooli Ent. Katsejaama Teadaanded 5: 1-10. — Williams, 1932. Hawaii. Ent. Soc., Proc. 8: 205-209. — Riek, 1955. Linn. Soc. N. S. Wales, Proc. 80: 147. — Jansson, 1960. Opusc. Ent. 25: 83-86. — Hedqvist, 1963. Ent. Tidskr. 84: 62-64. — Weidemann, 1965. Ztschr. f. Morph. u. Oekol. der Tiere 55: 425-480. — Masner, 1968. Acta Ent. Bohemoslov. 65: 464-466.

Genus DISOGMUS Foerster

Disognus Foerster, 1856. Hym. Stud., v. 2, p. 99.

Type-species: *Proctotrupes areolator* Haliday. Monotypic.

In North America at least the genus seems to be relatively rare. It is most closely related to *Proctotrupes* Latreille. Published host records for species of *Disognus* are very meager and apparently somewhat doubtful but suggest parasitization of carabid and pyrochroid larvae.

Taxonomy: Kieffer, 1914. Das Tierreich, Lief. 42, pp. 16-22. — Nixon, 1938. Roy. Ent. Soc.

London, Trans. 87: 447-450. — Pschorn-Walcher, 1958. Schweiz. Ent. Gesell., Mitt. 31: 58-59.

canadensis Harrington. Ont. (Ottawa).

Disognus canadensis Harrington, 1889. Roy. Soc. Canada, Trans. (2) 5: 193. ♀.

diversicornis Kieffer. Calif. (San Mateo).

Disognus diversicornis Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 271. ♂.

glabratus Kieffer. Calif. (San Mateo).

Disognus glabratus Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 271, 273. ♂.

pubescens Kieffer. Nev., (?) Ill. Host: *Amara* (*Curtonotus*) *carinatus* (LeC.).

Disognus pubescens Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 271, 272. ♀, ♂.

torvus Whittaker. B. C. (Chilliwack).

Disognus torvus Whittaker, 1930. Ent. Soc. Wash., Proc. 32: 68. ♀, ♂.

Genus PHAENOSERPUS Kieffer

Phaenoserphus Kieffer, 1908. In Andre, Spec. Hym. Eur. Alg., v. 10. p. 298.

Type-species: *Proctotrupes curtipennis* Haliday. Desig. by Muesebeck and Walkley, 1951.

Carabiphagus Morley, 1929. Suffolk Nat. Soc., Trans. 1: 40.

Type-species: *Proctotrupes laevifrons* Foerster. Monotypic.

There are no published host records for any North American form of this genus, but on the basis of rearings of Old-World species it appears that the hosts are mainly fungicolous beetle larvae of the families Carabidae and Staphylinidae. One remarkable observation has been recorded by Newman (1867), who described the emergence of specimens of *P. calcar* (Haliday) from a centipede of the genus *Lithobius*.

Taxonomy: Kieffer, 1908. *In* Andre, spec. Hym. Eur. Alg., v. 10, pp. 298-313. — Kieffer, 1914. *Das Tierreich*, Lief. 42, pp. 22-36. — Nixon, 1933. Roy. Ent. Soc. London, Trans. 87: 451-460. — Hellen, 1941. *Notulae Ent.* 21: 33-36. — Pschorn-Walcher, 1958. *Schweiz. Ent. Gesell., Mitt.* 31: 62-63.

Biology: Newman, 1867. *Entomologist* 3: 342-344. — Eastham, 1921. *Parasitology* 29: 1-21. — Raynaud, 1935. *Misc. Ent.* 36: 97-100. — Weidemann, 1965. *Ztschr. f. Oekol. u. Morph. der Tiere* 55: 446-480. — Masner, 1968. *Acta Ent. Bohemoslov.* 65: 464-465.

Morphology: Tonapi, 1958. *Indian Jour. Ent.* 20: 208, 209, figs. 31-33 (respiratory system). *longipes* Brues. Wash. (Almota).

Phaenoserphus longipes Brues, 1919. N. Y. Ent. Soc., Jour. 27: 9. ♂.

nevadensis (Kieffer). Calif., Nev.

Proctotrypes nevadensis Kieffer, 1906 (1905). *Berlin. Ent. Ztschr.* 50: 275. ♂.

nigripes (Ashmead). Alaska, Oreg.

Proctotrypes nigripes Ashmead, 1902. *Wash. Acad. Sci., Proc.* 4: 136. ♂.

obliquus (Ashmead). Tex.

Proctotrypes obliquus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 334, 338. ♂.

Genus PROCTOTRUPES Latreille

Serphus Schrank, 1780. *Schrift. Berlin. Gesell. Naturf. Freunde* 1: 307.

Type-species: *Serphus brachypterus* Schrank. Monotypic. Suppressed by Internatl.

Conn. Zool. Nomencl., 1946 (Opinion 178).

Proctotrupes Latreille, 1796. *Precis Caract. Gen. Ins.*, p. 108. No species. — Latreille, 1802.

Hist. Nat. Crust. Ins., v. 3, p. 308. One species.

Type-species: *Proctotrupes brevipennis* Latreille. First included species. Also design. by Internatl. Conn. Zool. Nomencl., 1946 (Opinion 178), and the generic name added by the Commission to the Official List of Generic Names in Zoology as Name No. 616.

Erodorus Walckenaer, 1802. *Faune Parisienne, Ins.*, v. 2, p. 47.

Type-species: *Erodorus bimaculatus* Walckenaer. Monotypic.

Proctotrupes Rafinesque, 1815. *Analyse, Nature ou Tabl. Univers, Palermo*, p. 125. Emend.

Erodorus Agassiz, 1846. *Nomencl. Zool.*, p. 143. Emend.

Proctotrypes Agassiz, 1846. *Nomencl. Zool.*, p. 309. Emend.

Proctotropis Gistel, 1848. *Naturgesch. Thierr. f. hoh. Schul.*, p. 143. Emend.

Proctotripes Provancher, 1883. *Petite Faune Ent. Canada*, p. 558. Error.

There appear to be no published records of host association for any North American species. Masner (1968) has indicated that species of *Proctotrupes* are essentially parasites of the larvae of Carabidae.

Revision: Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 333-344. — Kieffer, 1914. *Das Tierreich*, Lief. 42, pp. 7-16. — Brues, 1919. N. Y. Ent. Soc., Jour. 27: 2-6.

Biology: Masner, 1968. *Acta Ent. Bohemoslov.* 65: 464-465.

caudatus Say. Canadian, Transition and Upper Austral Zones.

Proctotrupes caudatus Say, 1824. *In* Keating, Narr. Long's 2nd Exped., v. 2, p. 329. ♀.

Proctotrupes crenulatus Patton, 1879. *Canad. Ent.* 11: 64. ♀.

cockerelli (Brues). Colo. (Eldorado).

Serphus cockerelli Brues, 1919. N. Y. Ent. Soc., Jour. 27: 3, 4. ♂.

debilis (Brues). Wash. (Wawawai).

Serphus debilis Brues, 1919. N. Y. Ent. Soc., Jour. 27: 3, 5. ♂.

florissantensis Rohwer. Iowa, Colo., Idaho.

Proctotrupes florissantensis Rohwer, 1909. *Amer. Ent. Soc., Trans.* 35: 134. ♀, ♂.

linellii Ashmead. N. Y.

Proctotrypes Linellii Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 334, 337. ♂.

longiusculus Brues. N. Y., N. J., Pa.

Proctotrypes longiusculus Brues, 1909 (1908). Wis. Nat. Hist. Soc., Bul. 6: 155. ♂.

melliventris Ashmead. Fla. (Jacksonville).

Proctotrupes melliventris Ashmead, 1887. Ent. Amer. 3: 99. ♂.

pallidus (Say). Transition and Upper Austral Zones.

Codrus pallidus Say, 1828. Contrib. Maclur. Lyc. Phila. 1: 80.

Proctotrypes coloradicus Cockerell, 1905. Ann. and Mag. Nat. Hist. (7) 15: 204. ♀.

rufigaster Provancher. Ont., N. Y., Man.

Proctotrupes rufigaster Provancher, 1881. Nat. Canad. 12: 263. ♀, ♂.

sequoiarum (Brues). Calif. (Marin County).

Serphus sequoiarum Brues, 1919. N. Y. Ent. Soc., Jour. 27: 3, 4. ♂.

terminalis Ashmead. Transcontinental in Transition and Upper Austral Zones.

Proctotrypes terminalis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 334, 337. ♂.

zabriskiei (Brues). N. Y. (Rochester).

Serphus zabriskiei Brues, 1919. N. Y. Ent. Soc., Jour. 27: 2, 3. ♀.

Genus CODRUS Panzer

Codrus Panzer, 1801. Faunae Ins. German., Heft 85, no. 9.

Type-species: *Codrus niger* Panzer. Desig. by Morice and Durrant, 1915.

Exallonyx Kieffer, 1904. Soc. Hist. Nat. Metz, Bul. 23: 34.

Type-species: *Exallonyx formicarius* Kieffer. Orig. desig.

Although dipterous larvae, of the family Mycetophilidae, have been considered possible hosts it appears that the species of *Codrus* are essentially parasites of fungicolous beetle larvae. Masner (1968) has indicated that all reliable host records involve Staphylinidae only.

Taxonomy: Brues, 1919. N. Y. Ent. Soc., Jour. 27: 9-18. — Nixon, 1938. Roy. Ent. Soc. London, Trans. 87: 434-446. — Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 665. — Pschorn-Walcher, 1958. Schweiz. Ent. Gesell., Mitt. 31: 61-62. — Weidemann, 1965. Ztschr. f. Morph. u. Oekol. der Tiere 55: 480-509.

Biology: Frohawk, 1886. Entomologist 19: 225. — Williams, 1932. Hawaii. Ent. Soc., Proc. 8: 205-209. — Hedqvist, 1963. Ent. Tidskr. 84: 63. — Weidemann, 1965. Ztschr. f. Morph. u. Oekol. der Tiere 55: 440-480. — Masner, 1968. Acta Ent. Bohemoslov. 65: 465.

angusticeps (Brues). Wash. (Orcas Isl.).

Proctotrypes angusticeps Brues, 1910 (1909). Wis. Nat. Hist., Soc., Bul. 7: 112. ♀.

ashmeadi (Brues). Maine.

Exallonyx ashmeadi Brues, 1919. N. Y. Ent. Soc., Jour. 27: 10, 13. ♂.

californicus (Holmgren). Calif.

Proctotrupes californicus Holmgren, 1868. Eug. Resa I, Zool. 1, Ins., p. 434. ♀, ♂.

canadensis (Ashmead). Que., Ont., N. Y.

Proctotrypes canadensis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 335, 342. ♀.

carinatus (Brues). Wash. (Oroville).

Exallonyx carinatus Brues, 1919. N. Y. Ent. Soc., Jour. 27: 11, 15. ♂.

carolinensis (Ashmead). Mass., Pa., Va., N. C., Mich., Ind.

Proctotrypes carolinensis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 335, 341. ♂.

crenaticornis (Kieffer). Calif. (Santa Clara).

Exallonyx crenaticornis Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 273, 274. ♂.

denticornis (Kieffer). Nev. (Ormsby County).

Exallonyx denticornis Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 273, 275. ♂.

fallacicornis (Kieffer). Calif. (Santa Clara).

Exallonyx fallacicornis Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 274. ♂.

femoratus (Ashmead). Wyo., Wash.

Proctotrypes femoratus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 335, 344. ♀.

- fuscicornis** (Brues). Mass. (Wood's Hole).
Exallonyx fuscicornis Brues, 1919. N. Y. Ent. Soc., Jour. 27: 10, 12. ♂.
- grandis** (Brues). N. J. (Ramsey).
Exallonyx grandis Brues, 1919. N. Y. Ent. Soc., Jour. 27: 11, 17. ♀.
- longiceps** (Ashmead). Ont., Va., Ohio, Ark. Host: *Staphylinus* sp.
Proctotrypes longiceps Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 335, 342. ♀.
- medius** (Ashmead). Ont. (Ottawa).
Proctotrypes medius Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 335, 343. ♀.
- obscuripes** (Brues). Wash. (Puget Sound region).
Proctotrypes obscuripes Brues, 1910 (1909). Wis. Nat. Hist. Soc., Bul. 7: 112, 114. ♂.
- pallidicornis** (Brues). Conn., Wis.
Exallonyx pallidicornis Brues, 1919. N. Y. Ent. Soc., Jour. 27: 11, 14. ♂.
- parvulus** (Brues). Wash., Calif.
Exallonyx parvulus Brues, 1919. N. Y. Ent. Soc., Jour. 27: 11, 16. ♂.
- placidus** (Brues). Wash. (Orcas Isl.).
Proctotrypes placidus Brues, 1910 (1909). Wis. Nat. Hist. Soc., Bul. 7: 112, 113. ♂.
- pleuralis** (Brues). Wash. (Monroe).
Exallonyx pleuralis Brues, 1919. N. Y. Ent. Soc., Jour. 27: 10, 14. ♂.
- quadriceps** (Ashmead). Que., Ont., N. J.
Proctotrypes quadriceps Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 335, 343. ♀.
- serricornis** (Brues). Wash. (Puget Sound region).
Proctotrypes serricornis Brues, 1910 (1909). Wis. Nat. Hist. Soc., Bul. 7: 112, 115. ♂.
- similis** (Brues). Wash., Calif.
Exallonyx similis Brues, 1919. N. Y. Ent. Soc., Jour. 27: 10, 11. ♀.
- simplicior** (Brues). Wash. (Puget Sound region).
Proctotrypes simplicior Brues, 1910 (1909). Wis. Nat. Hist. Soc., Bul. 7: 112, 116. ♂.
- simulans** (Ashmead). Md., Va., W. Va., Ill.
Proctotrypes simulans Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 335, 342. ♀.
- texanus** (Ashmead). Tex.
Proctotrypes texanus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 335, 341. "♀" = ♂.

Genus CRYPTOSERPUS Kieffer

Cryptoserphus Kieffer, 1907. In Andre, Spec. Hym. Eur. Alg., v. 10, p. 288. No species.

—Kieffer, 1908. In Andre, Spec. Hym. Eur. Alg., v. 10, p. 313. Ten species.

Type-species: *Cryptoserphus longicalcar* Kieffer. Desig. by Kieffer, 1908.

Brachyserphus Hellen, 1941. Notulae Ent. 21: 42.

Type-species: *Codrus parvulus* Nees. Orig. desig.

The only published host record for a North American species is for *C. obsoleta* (Say), which is said to have been reared from a fungicolous beetle larva, but apparently reliable rearing records for certain European species of *Cryptoserphus* include as hosts the larvae of fungus gnats (Mycetophilidae) as well as fungicolous Coleoptera.

Taxonomy: Kieffer, 1914. Das Tierreich, Lief. 42, pp. 36-42. —Brues, 1919. N. Y. Ent. Soc.,

Jour. 27: 6-8. —Nixon, 1938. Roy. Ent. Soc. London, Trans. 87: 460-465. —Hellen, 1941.

Notulae Ent. 21: 41-42. —Pschorn-Walcher, 1958. Schweiz. Ent. Gesell., Mitt. 31: 59.

—Masner, 1967. In Krombein and Burks, U. S. Dept. Agr., Agr. Monog. 2, Sup. 2, p. 286.

Biology: Jansson, 1960. Opusc. Ent. 25: 83-86. —Masner, 1968. Acta Ent. Bohemoslov. 65: 464-466.

abruptus (Say). Que. and Ont. s. to Fla.; Tenn., Ind., Mich.

Proctotrypes abruptus Say, 1836. Boston Jour. Nat. Hist. 1: 378. ♀.

Megaspilus lucens Provancher, 1883. Nat. Canad. 14: 33. "♀" = ♂.

Taxonomy: Masner, 1969. Nat. Canad. 96: 779.

belfragei (Ashmead). Tex.

Proctotrypes Belfragei Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 335, 340. ♀.

bruesi Muesebeck and Walkley, Conn. (Morris Cove).

Disognus obsoletus Brues, 1905. Wis. Nat. Hist. Soc., Bul. 3: 186. ♀. Preocc. by Say, 1836.

Cryptoserphus bruesi Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 665. N. name.

clypeatus (Ashmead). N. Y. (Ithaca).

Proctotrupes clypeatus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 334, 339. ♀.

flavipes (Provancher). N. B., Que., Ont., Md., N. C.

Proctotrupes pallipes Provancher, 1881. Nat. Canad. 12: 263. This name, which is preocc. by Jurine, 1807, was used unintentionally in the key for *P. flavipes*, which heads the description on the following page.

Proctotrupes flavipes Provancher, 1881. Nat. Canad. 12: 264. ♀.

melanderi Brues. Wash. (Pullman).

Cryptoserphus melanderi Brues, 1919. N. Y. Ent. Soc., Jour. 27: 8. ♂.

obsoletus (Say). D. C., Va., Fla., Ind., Ont. Host: *Stelidota strigosa* (Gyll.).

Proctotrupes obsoletus Say, 1836. Boston Jour. Nat. Hist. 1: 377. ♀.

occidentalis Brues. Idaho, Wash.

Cryptoserphus occidentalis Brues, 1919. N. Y. Ent. Soc., Jour. 27: 7. ♀.

Family DIAPRIIDAE

This is a large family in which apparently only a small percentage of the existing species have been described. Most of those whose host associations are known are parasites of Diptera.

Revision: Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 345-448. —Kieffer, 1916. Das Tierreich, Lief. 44, pp. VI-XXX, 1-627.

Taxonomy: Jansson, 1939. Ent. Tidskr. 60: 167-172. —Masner, 1961. Inst. Sci. Madagascar, Mem. 12: 289-292. —Kozlov, 1971. Soc. Ent. Unionis Sovet., Horae 54: 12-33.

SUBFAMILY AMBOSITRINAE

Taxonomy: Masner, 1961. Inst. Sci. Madagascar, Mem. 12, pp. 289-295. —Masner, 1969. Ber. ueber die 10. Wanderversammlung Deut. Ent. no. 80, pp. 105-109.

Genus PROPSILOMMA Kieffer

Propsilomma Kieffer, 1916. Das Tierreich, Lief. 44, pp. xxiv, 351, 422.

Type-species: *Psilomma columbianum* Ashmead. Monotypic.

Taxonomy: Masner, 1964. Acta Soc. Ent. Cechoslov. 61: 130.

columbianum (Ashmead). D. C.

Psilomma columbianum Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 379. ♀, ♂.

SUBFAMILY ISMARINAE

Taxonomy: Thomson, 1858. Ofvers. Kongl. Vetensk.-Akad., Forh. 15: 377. —Hellen, 1963.

Fauna Fennica 14: 4. —Hellen, 1964. Fauna Fennica 18: 3-6.

Genus ISMARUS Haliday

Ismarus Haliday, 1835. Ent. Mag. 2: 467.

Type-species: *Cinetus dorsiger* Curtis. Monotypic.

Entomia Herrich-Schaeffer, 1840. Nomencl. Ent., v. 2, p. 127, pl. 6, fig. 21.

Type-species: *Entomia campanulata* Herrich-Schaeffer. Monotypic.

Entomius Haliday, 1857. Nat. Hist. Rev., v. 4, p. 169. Emend.

Agonophorus Dahlbom, 1858 (1857). Ofvers. Kongl. Vetensk.-Akad., Forh. 14: 289. No species. —Muesebeck, 1972. Ent. Soc. Wash., Proc. 74: 131. Three species.

Type-species: *Ismarus rugulosus* Foerster. Desig. by Muesebeck, 1972.

The species for which host associations are known are parasitic on Dryinidae.

Taxonomy: Thomson, 1858. Ofvers. Kongl. Vetensk.-Akad., Forh. 15: 377. —Nixon, 1957. Roy. Ent. Soc. London, Handb. 8 (3), p. 11. —Dessart, 1967. So. Austral. Mus., Rec. 15: 553. —Muesebeck, 1972., Ent. Soc. Wash., Proc. 74: 131.

Biology: Chambers, 1955. Ent. Monthly Mag. 91: 114-115.

americanus Fouts. Pa. (Carlisle).

Ismarus americanus Fouts, 1924. Ent. Soc. Wash., Proc. 26: 164. ♀.

nevadensis Kieffer. Nev. (Ormsby County).

Ismarus nevadensis Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 276. ♀.

SUBFAMILY BELYTINAE

Revision: Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 345-384. —Kieffer, 1908-1910. *In* Andre, Spec. Hym. Eur. Alg., v. 10, pp. 345-691 (pp. 345-448 pub. in 1908, pp. 449-592 in 1909, pp. 593-691 in 1910). —Kieffer, 1916. Das Tierreich, Lief. 44, pp. 347-593 (World fauna). —Nixon, 1957. Roy. Ent. Soc. London, Handb. 8 (3), 107 pp. (British species). —Hellen, 1964. Fauna Fennica 18: 6-66 (Finnish species).

Taxonomy: Foerster, 1856. Hym. Stud., v. 2, pp. 127-142. —Thomson, 1858. Ofvers. Kongl. Vetensk.-Akad., Forh. 15: 155-180. —Ashmead, 1902. N. Y. Ent. Soc., Jour. 10: 244-247. —Kieffer, 1910. *In* Wytzman, Gen. Ins., fasc. 107, pp. 1-47. —Masner, 1961. Inst. Sci. Madagascar, Mem. 12: 290-292. —Kozlov, 1971. Soc. Ent. Unionis Soviet., Horae 54: 12-18, 23-28.

Genus CINETUS Jurine

Cinetus Jurine, 1807. Nouv. Meth. Class. Hym. Dipt., p. 310. No species. —Lepeletier and Serville, 1825. Encycl. Meth., Ins., v. 10, p. 210. One species.

Type-species: *Cinetus iridipennis* Lepeletier and Serville. First included species.

Also desig. by Kieffer, 1910.

Cintus Curtis, 1829. Guide Brit. Ins., column 109. Error.

Leptorhaptus Foerster, 1856. Hym. Stud., v. 2, pp. 129, 137. No species. —Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 346, 349. Two species.

Type-species: *Leptorhaptus conicus* Ashmead. Desig. by Muesebeck and Walkley, 1951.

Stylidolon Ashmead, 1897. Canad. Ent. 29: 53.

Type-species: *Stylidolon politum* Ashmead. Monotypic.

Stylidodon Ashmead, 1902. N. Y. Ent. Soc., Jour. 10: 245. Error.

An unnamed European species has been recorded as parasitizing larvae of Mycetophilidae. No rearing records for any North American species have been published although one species is reported to have been taken in burrows of the bark beetle *Phloeosinus canadensis* Swaine, where it presumably had developed on some dipterous scavenger.

Taxonomy: Masner, 1964. Acta Soc. Ent. Cechoslov. 61: 126-130. —Masner, 1967. *In* Krombein and Burks, U. S. Dept. Agr., Agr. Monog. 2, Sup. 2, p. 293.

californicus Ashmead. Calif. (Santa Cruz Mts.)

Cinetus californicus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 360, 361. "♂" = ♀.

canadensis (Ashmead). Que., Ont. Ecology: With *Phloeosinus canadensis* Swaine.

Miota canadensis Ashmead, 1897. Canad. Ent. 29: 54. ♀.

Biology: Schedl, 1932. Canad. Ent. 64: 1.

coloradensis (Ashmead). Colo. (Westcliffe).

Psilomma coloradense Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 11. ♀.

conicus (Ashmead). Que., Ont., D. C., Va.

Leptorhaptus conicus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 350. ♀, (male misdet.).

pleuralis Fouts. N. Y. (McLean Bogs).

Cinetus pleuralis Fouts, 1925. Ent. Soc. Wash., Proc. 27: 151. ♀, ♂.

procerus Masner and Muesebeck. Va. (Arlington).

Zelotypa ruficornis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 365, 366. ♂. Preocc. by Curtis, 1831.

- Cinetus procerus* Masner and Muesebeck, 1968. U. S. Natl. Mus. Bul. 270: 25. N. name.
subpolitus Masner. Ont. (Ottawa).
Stylidolon politum Ashmead, 1897. Canad. Ent. 29: 54. ♀. Preocc. by Thomson, 1858.
Cinetus subpolitus Masner, 1964. Acta Soc. Ent. Cechoslov. 61: 128. N. name.
texanus (Ashmead). Tex.
Zelotypa texana Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 364, 365. ♂.

Genus MIOTA Foerster

- Miota* Foerster, 1856. Hym. Stud., v. 2, pp. 131, 141. No species. — Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 12. One species.
 Type-species: *Miota glabra* Ashmead. First included species.
Leptonetus Masner, 1964. Acta Soc. Ent. Cechoslov. 61: 128.
 Type-species: *Cinetus politus* Thomson. Orig. desig.
 Host relationships of members of this genus are unknown.
 Taxonomy: Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 351-353. — Masner, 1964. Acta Soc. Ent. Cechoslov. 61: 128-129. — Masner, 1967. In Krombein and Burks, U. S. Dept. Agr., Agr. Monog. 2, Sup. 2, p. 292.
alaskensis (Ashmead). Alaska (Virgin Bay).
Zelotypa alaskensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 139. ♂.
americana (Ashmead). Fla.
Psilomma americana Ashmead, 1887. Canad. Ent. 19: 197. ♂.
analis Ashmead. "Carolina."
Miota analis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 351, 352. ♀.
ashmeadi (Kieffer). Calif. (Claremont).
Leptorhaptus ashmeadi Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 377. ♂.
bakeri (Kieffer). Calif. (Claremont).
Leptorhaptus Bakeri Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 377, 378. ♂.
bisulcata (Kieffer). Pa. (Jeannette).
Leptorhaptus bisulcatus Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 377, 378. ♂.
clarimontis (Kieffer). Calif. (Claremont).
Leptorhaptus Clarimontis Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 377, 379. ♀.
conformis Fouts. Calif. (Westwood).
Miota conformis Fouts, 1966. Ent. Soc. Wash., Proc. 68: 19. ♀.
filicornis (Kieffer). Calif. (San Mateo).
Zelotypa filicornis Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 279. ♀.
flavicornis Kieffer. Colo. (Gunnison).
Miota flavicornis Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 281. ♀.
glabra Ashmead. Colo. (Westcliffe).
Miota glabra Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 12. ♀.
longinervis (Kieffer). Calif. (Claremont).
Leptorhaptus longinervis Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 281. ♀.
monticola (Kieffer). Calif. (Claremont).
Cinetus monticola Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 376. ♀.
pennsylvanica (Kieffer). Pa. (Pittsburgh).
Cinetus pennsylvanicus Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 376. ♂.
rufa (Ashmead). Va.
Leptorhaptus rufus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 350. ♀, ♂.
vera (Fouts). Fla.
Scorpioteleia vera Fouts, 1927. Ent. Soc. Wash., Proc. 29: 173. ♀.
xanthocera (Kieffer). Pa. (Jeannette).
Cinetus xanthocerus Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 376, 377. ♀.

Genus SCORPIOTELEIA Ashmead

Scorpioteleia Ashmead, 1897. Canad. Ent. 29: 53.

Type-species: *Scorpioteleia mirabilis* Ashmead. Monotypic.

Taxonomy: Masner, 1964. Acta Soc. Ent. Cechoslov. 61: 130.

mirabilis Ashmead. Ont. (Kettle Isl.).

Scorpioteleia mirabilis Ashmead, 1897. Canad. Ent. 29: 53. ♀.

Genus MACROHYNNIS Foerster

Macrohynnus Foerster, 1856. Hym. Stud., v. 2, pp. 129, 136. No species. —Mayr, 1904.

Zool.-Bot. Gesell. Wien, Verhandl. 54: 593. One species.

Type-species: *Macrohynnus lepidus* Mayr. First included species.

Cinelaptus Nixon, 1957. Roy. Ent. Soc. London, Handb. 8 (3), pp. 7, 91.

Type-species: *Cinelaptus fragilis* Nixon. Orig. desig.

americanus Kieffer. Pa. (Jeannette).

Macrohynnus americanus Kieffer, 1909. Soc. Sci. de Bruxelles, 33: 338. ♀.

Genus ACLISTA Foerster

Aclista Foerster, 1856. Hym. Stud., v. 2, pp. 128, 131, 133, 134, 135. No species. —Marshall, 1873. Cat. Brit. Hym.; Oxyura, p. 9. Three species, one of them doubtfully included.

Type-species: *Acoretus scutellaris* Thomson. Desig. by Muesebeck and Walkley, 1951.

Aneetata Foerster, 1856. Hym. Stud., v. 2, pp. 129, 136. No species. —Ashmead, 1887.

Canad. Ent. 19: 198. One species.

Type-species: *Aneetata hirtifrons* Ashmead. First included species.

Xenotoma Foerster, 1856. Hym. Stud., v. 2, pp. 129, 137. No species. —Foerster, 1861.

Programm Realschule Aachen, p. xlv. One species.

Type-species: *Xenotoma nigricoxis* Foerster. First included species.

Acoretus Haliday, 1857. Nat. Hist. Rev., v. 4, p. 169. Proposed as a subgenus of *Belyta* Jurine.

Type-species: *Belyta rufopetiolata* Nees. Monotypic.

Although the species of this genus are numerous and specimens are abundantly collected in the field nothing has been published concerning their habits, biology or host relations except in the case of *A. fungicola* (Crawford), which was reared in large numbers from dipterous larvae living in a mushroom fungus of the genus *Boletus*.

Taxonomy: Nixon, 1957. Roy. Ent. Soc. London, Handb. 8 (3), pp. 66-84. —Hellen, 1964.

Fauna Fennica 18: 18-32.

antennalis (Fouts). N. Y. (McLean Bogs).

Xenotoma (*Xenotoma*) *antennalis* Fouts, 1926. Brooklyn Ent. Soc., Bul. 21: 152, 154. ♀.

aquilonia Muesebeck. Alaska (Muir Inlet).

Zelotypa borealis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 137, 138. ♀. Preocc. by *Aclista borealis* Ashmead, 1893, which is now in *Zygota*.

Aclista ashmeadi Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 686.

N. name. Preocc. by Kieffer, 1905.

Aclista aquilonia Muesebeck, 1958. U. S. Dept. Agr., Agr. Monog. 2, Sup. 1, p. 91. N. name.

ashmeadi (Kieffer). Calif. (San Mateo). Doubtfully referable to *Aclista*.

Zelotypa ashmeadi Kieffer, 1905. Soc. Hist. Nat. Metz, Bul. 24: 109. ♂.

bradleyi (Fouts). Calif. (Cuyamaca Mts.).

Xenotoma bradleyi Fouts, 1927. Ent. Soc. Wash., Proc. 29: 172. ♀.

brunnipes Muesebeck and Walkley. Colo.

Xenotoma coloradensis Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 368, 370. ♂. Preocc.

by *Zelotypa coloradensis* Ashmead, 1890, now in *Pantoclis*, when both were placed in *Aclista* by Muesebeck and Walkley, 1951.

Aclista brunnipes Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 686. N. name.

castanea (Kieffer). Pa. (Jeannette).

Xenotoma castanea Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 44. ♀.

clarimontis (Kieffer). Calif. (Claremont).

Xenotoma Clarimontis Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 369, 374. ♂.

cubitalis Muesebeck and Walkley. Wis. (Polk County).

Xenotoma clinoneura Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 368, 372. ♂. Preocc. by *Pantoclis clinoneura* Kieffer, 1909, when both were placed in *Aclista* by Muesebeck and Walkley, 1951.

Aclista cubitalis Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 686. N. name.

curvicauda (Fouts). N. Y. (McLean Bogs).

Xenotoma (Xenotoma) curvicauda Fouts, 1926. Brooklyn Ent. Soc., Bul. 21: 152, 155. ♀.

flavidipes (Kieffer). Fla. (Ft. George Isl.)

Zelotypa flavipes Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 365. ♂. Preocc. by *Pantoclis flavipes* Ashmead, 1893, when also placed in *Pantoclis* by Kieffer, 1910.

Pantoclis ? flavidipes Kieffer, 1910. In Wytsman, Gen. Ins., fasc. 107, p. 27. N. name.

flavinervis (Kieffer). Pa. (Jeanette).

Xenotoma flavinervis Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 370, 375. ♀, ♂.

flavoris Muesebeck and Walkley. Pa., Wis.

Xenotoma Bakeri Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 369, 373. ♀, ♂. Preocc. by *Pantoclis bakeri* Kieffer, 1909, when both were placed in *Aclista* by Muesebeck and Walkley, 1951.

Aclista flavoris Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 687. N. name.

foutsii Muesebeck and Walkley. Ont. (Gull Lake).

Aneclata canadensis Fouts, 1924. Ent. Soc. Wash., Proc. 26: 165. ♀. Preocc. by *Pantoclis canadensis* Ashmead, 1897, when both names were placed in *Aclista* by Muesebeck and Walkley, 1951.

Aclista foutsii Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 687. N. name.

fungicola (Crawford). Va. (Clarendon). Ecology: A long series was reared from dipterous larvae in a fungus of the genus *Boletus*.

Zelotypa fungicola Crawford, 1915. U. S. Natl. Mus., Proc. 48: 583. ♀, ♂.

fuscinervis (Kieffer). Pa. (Jeanette).

Xenotoma fuscinervis Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 370, 375. ♀, ♂.

harringtoni (Kieffer). Que. (Hull).

Pantoclis mandibularis Harrington, 1899. Roy. Soc. Canada, Trans. (2) 5: 198. ♀. Preocc. by Ashmead, 1893.

Xenotoma (Zelotypa) harringtoni Kieffer, 1916. Das Tierreich, Lief. 44, pp. 544, 549. N. name.

hirtifrons (Ashmead). Ont. (Ottawa).

Aneclata hirtifrons Ashmead, 1887. Canad. Ent. 19: 198. ♀.

insularis (Ashmead). Fla. (Ft. George Isl.).

Pantoclis insularis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 367, 369. ♀, (male misdet.).

kiefferi (Fouts). Pa. (Jeanette).

Xenotoma xanthopus Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 368, 371. ♂. Preocc. by Ashmead, 1893.

Xenotoma flavipes Kieffer, 1910. In Wytsman, Gen. Ins., fasc. 107, p. 33. N. name. Preocc. by Ashmead, 1893. See under *A. flavidipes* (Kieffer).

Xenotoma (Xenotoma) kiefferi Fouts, 1926. Brooklyn Ent. Soc., Bul. 21: 151, 153. N. name.

laeta (Kieffer). Calif. (Claremont).

Xenotoma laeta Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 368, 371. ♂.

longicornis (Provancher). Canada.

Spilomicrus longicornis Provancher, 1881. Nat. Canad. 12: 262. ♀.

Taxonomy: Masner, 1969. Nat. Canad. 96: 782.

- macrodyctium** (Ashmead). Colo. (Westcliffe).
Cinetus macrodyctium Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 360. ♀, (male misdet.).
- mandibularis** (Ashmead). Tex.
Xenotoma mandibularis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 363. ♀, (♂ misdet.).
- megaplasta** (Ashmead). Kans. (Manhattan).
Pantoclis megaplasta Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 367, 368. ♀.
Pantoclis megaloplasta Schulz, 1906. Spolia Hym., p. 151. Emend.
- melanocera** (Kieffer). Calif. (Claremont).
Xenotoma melanocera Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 368, 370. ♂.
- mellicornis** Muesebeck and Walkley. Va. (Arlington).
Cinetus ruficornis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 359, 360. ♀. Preocc. by Curtis, 1831.
Aclista mellicornis Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 688. N. name.
- mellipes** (Say). Que., Ont., Va., Ind.
Cinetus mellipes Say, 1836. Boston Jour. Nat. Hist. 1: 279. ♀.
- morula** Muesebeck and Walkley. Colo.
Aneuctata coloradensis Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 42. ♀. Preocc. by *Zelotypa coloradensis* Ashmead, 1890, when both were placed in *Aclista* by Muesebeck and Walkley, 1951, although the Ashmead species is now in *Pantoclis*.
Aclista morula Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 688. N. name.
- nevadensis** Kieffer. Nev. (Ormsby County).
Aclista nevadensis Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 277. ♂.
- pacifica** Muesebeck and Walkley. Calif.
Aneuctata californica Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 381. ♀. Preocc. by *Aclista californica* Ashmead, 1893, although the latter is now in *Zygota* where it is preoccupied and has been renamed *distans* Muesebeck and Walkley, 1951.
Aclista pacifica Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 688. N. name.
- paludicola** Muesebeck and Walkley. N. Y. (McLean Bogs).
Xenotoma (Xenotoma) palustra Fouts, 1926. Brooklyn Ent. Soc., Bul. 21: 151, 153. ♀.
Preocc. by *Aclista palustra* Fouts, 1926, which is now in *Zygota*.
Aclista paludicola Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 688. N. name.
- parvicellula** (Kieffer). Calif. (Claremont).
Xenotoma parvicellula Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 368, 371. ♀.
- pilosa** (Fouts). N. Y. (McLean Bogs).
Xenotoma (Xenotoma) pilosa Fouts, 1926. Brooklyn Ent. Soc., Bul. 21: 150, 153. ♂.
- polita** (Ashmead). Colo. (Westcliffe).
Aneuctata polita Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 381, 382. ♂.
- rufopleuralis** (Ashmead). Que. (Hull).
Miota rufopleuralis Ashmead, 1897. Canad. Ent. 29: 54. ♀.
- rufosignata** (Kieffer). Calif. (Claremont).
Xenotoma rufosignata Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 369, 373. ♀, ♂.
- scutellata** (Ashmead). Alaska.
Zelotypa scutellata Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 137. ♀.
- similis** (Ashmead). Va.
Cinetus similis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 359, 361. ♀.
- trisulcata** (Kieffer). Pa. (Jeannette).
Xenotoma trisulcata Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 369, 372. ♀.
- vagabunda** Muesebeck and Walkley. Pa. (Jeannette).
Xenotoma Klagesi Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 369, 374. ♀. Preocc. when it and *Pantoclis klagesi* Kieffer, 1909, were both placed in *Aclista* by Muesebeck and Walkley, 1951, although the latter name has now been restored to *Pantoclis*.

Aclista vagabunda Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 689.
N. name.

xanthopus (Ashmead). N. J.

Xenotoma xanthopus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 363. ♀, ♂.

Genus PANTOCLIS Foerster

Pantoclis Foerster, 1856. Hym. Stud., v. 2, pp. 129, 137. No species. — Foerster, 1861.
Programm Realschule Aachen, p. xliii. One species.

Type-species: *Pantoclis barycera* Foerster. First included species.

Zelotypa Foerster, 1856. Hym. Stud., v. 2, pp. 130, 141. No species. — Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 12. One species.

Type-species: *Zelotypa coloradensis* Ashmead. First included species.

There appear to be no published indications of host associations for any species of this genus.

Revision: Kieffer, 1916. Das Tierreich, Lief. 44, pp. 475-506.

Taxonomy: Nixon, 1957. Roy. Ent. Soc. London, Handb. 8(3), pp. 41-54. — Hellen, 1964. Fauna Fennica 18: 32-38.

aculeata Kieffer. Pa. (Pittsburgh).

Pantoclis aculeatus Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 353, 357. ♀.

analis Ashmead. D. C.

Pantoclis analis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 367, 370. ♀.

aptera Kieffer. Alaska.

Pantoclis scutellata aptera Kieffer, 1916. Das Tierreich, Lief. 44, p. 498. ♀.

Taxonomy: Muesebeck and Masner, 1967. U. S. Dept. Agr., Agr. Monog. 2, Sup. 2, p. 294.

bakeri Kieffer. Pa. (Jeannette).

Pantoclis Bakeri Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 353, 354. ♂.

bruesi Kieffer. Pa., Wis.

Pantoclis Bruesi Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 353, 357. ♀.

californica Ashmead. Calif. (Santa Cruz Mts.).

Pantoclis californica Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 367, 371. ♀, (male misdet.).

canadensis Ashmead. Ont. (Ottawa).

Pantoclis canadensis Ashmead, 1897. Canad. Ent. 29: 55. ♀.

clinoneura Kieffer. Pa. (Jeannette).

Pantoclis clinoneurus Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 353, 355. ♂.

coloradensis (Ashmead). Colo. (Westcliffe).

Zelotypa coloradensis Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 12. "♀" = ♂.

consimilis (Muesebeck). Ont. (Ottawa).

Pantoclis similis Ashmead, 1897. Canad. Ent. 29: 55. ♂. Preocc. by *Cinetus similis* Ashmead, 1893, when both were placed in *Aclista* by Muesebeck, 1958.

Aclista consimilis Muesebeck, 1958. U. S. Dept. Agr., Agr. Monog. 2, Sup. 1, p. 91. N. name.

dubiosa Kieffer. Calif. (Claremont).

Pantoclis dubiosa Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 278. ♀.

duplicata (Muesebeck and Walkley). Calif. (Claremont).

Pantoclis californicus Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 352, 354. ♀. Preocc. by Ashmead, 1893.

Pantoclis californiae Kieffer, 1910. In Wytsman, Gen. Ins., fasc. 107, p. 26. N. name. Again proposed as n. name for *californicus* in 1926 (Das Tierreich, Lief. 44: 504). Placed in *Aclista* by Muesebeck and Walkley, 1951, and there preoccupied by *Aclista californiae* Kieffer, 1910, which is now in *Belyta*.

Aclista duplicata Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 686. N. name.

flavipes Ashmead. Va. (Arlington).

Pantoclis flavipes Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 367, 370. ♀.

- Pantoclis flavicrus* Kieffer, 1916. Das Tierreich, Lief. 44, pp. 480, 500. Unnecessarily proposed as a n. name for *P. flavipes* Ashmead.
- floridana** Ashmead. Fla. (Jacksonville).
Pantoclis floridana Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 367, 372. ♀.
- georgica** (Ashmead). Ga.
Aneclata georgica Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 381, 382. ♂.
- integrifrons** Kieffer. Pa. (Jeannette).
Pantoclis integrifrons Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 353, 356. ♀.
- jeannettensis** (Muesebeck and Walkley). Pa. (Jeannette).
Pantoclis microneurus Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 353, 355. ♂. Preocc. by *Aclista microneura* Kieffer, 1909, when placed in *Aclista* by Muesebeck and Walkley, 1951, although that species is now in *Zygota*.
Aclista jeannettensis Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 688. N. name.
- klagesi** Kieffer. Pa. (Jeannette).
Pantoclis Klagesi Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 353, 358. ♂.
- monilicornis** (Ashmead). Colo. (Westcliffe).
Belyta monilicornis Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 12. ♀.
- montana** Ashmead. Calif. (Santa Cruz Mts.).
Pantoclis montana Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 367, 368. ♀, (male misdet.).
- orthoneura** Kieffer. Wis. (Polk County).
Pantoclis orthoneurus Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 353, 358. ♂.
- rufescens** Ashmead. Tex.
Pantoclis rufescens Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 367, 372. ♀.
- ruficauda** Ashmead. Va. (Arlington).
Pantoclis ruficauda Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 367, 370. ♀.
- singularis** Kieffer. Pa. (Jeannette).
Pantoclis singularis Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 352, 354. ♂.
- subfusca** Kieffer. Pa. (Jeannette).
Pantoclis subfusca Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 353, 355. ♀.
- subobtusata** Kieffer. Pa. (Jeannette).
Pantoclis subobtusata Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 353, 358. ♀.

Genus ZYGOTA Foerster

Zygota Foerster, 1856. Hym. Stud., v. 2, pp. 128, 131, 133, 135. No species. — Marshall, 1873. Cat. Brit. Hym.; Oxyura, p. 9. Two species.

Type-species: *Belyta abdominalis* Nees. Desig. by Ashmead, 1893.

Carinia Kieffer, 1905. Soc. Sci. de Bruxelles, Ann. 29: 140.

Type-species: *Carinia nitida* Kieffer. Monotypic.

Tetrapsilus Kieffer, 1908. In Andre, Spec. Hym. Eur. Alg., v. 10, pp. 367, 397.

Type-species: *Tetrapsilus filicornis* Kieffer. Monotypic.

Although specimens are commonly collected nothing seems to be known concerning the biology or host relationships of members of this genus.

Taxonomy: Fouts, 1926. Brooklyn Ent. Soc., Bul. 21: 145-149. (under *Aclista* Foerster).

—Nixon, 1957. Roy. Ent. Soc. London, Handb. 8 (3), pp. 54-65. —Hellen, 1964. Fauna Fennica 18: 38-45.

americana Ashmead. Greenland, Que., Ont., Alaska.

Zygota Americana Ashmead, 1888. Canad. Ent. 20: 54. ♀, ♂.

arcuata (Kieffer). Pa. (Jeannette).

Aclista arcuata Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 348, 349. ♂.

borealis (Ashmead). Ont. (Ottawa).

Aclista borealis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 376, 378. ♀.

caudata (Harrington). Que. (Hull).

Aclista caudata Harrington, 1899. Roy. Soc. Canada, Trans. (2) 5: 199. ♀, ♂.

crassicornis (Harrington). Ont. (Ottawa).

Aclista crassicornis Harrington, 1899. Roy. Soc. Canada, Trans. (2) 5: 200. ♂.

distans Muesebeck and Walkley. Alaska, Calif.

Aclista californica Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 375, 378. ♀. Preocc. by *Pantoclis californica* Ashmead, 1893, when the latter was placed in *Aclista* by Muesebeck and Walkley, 1951, although it has now been restored to *Pantoclis*.
Zygota distans Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 683. N. name.

dolichoneura (Kieffer). Nev. (Ormsby County).

Aclista dolichoneura Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 349, 351. ♂.

dupla Muesebeck and Walkley. D. C.

Aclista rufopetiolata Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 375, 376. ♀. Preocc. by Nees, 1834.
Zygota dupla Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 683. N. name.

emarginata (Kieffer). Wis. (Polk County).

Aclista (Zygota) emarginata Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 348, 350. ♂.

excavata (Fouts). N. Y. (McLean Bogs).

Aclista excavata Fouts, 1926. Brooklyn Ent. Soc., Bul. 21: 146, 147. ♂.

inermis (Provancher). Que., Ont.

Aneurynchus (!) *inermis* Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 176.
"♀" = ♂.

Taxonomy: Masner, 1969. Nat. Canad. 96: 777.

insignis (Kieffer). Pa. (Jeannette).

Aclista insignis Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 349, 350. ♂.

levistylus (Kieffer). Pa. (Jeannette).

Aclista levistylus Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 348, 350. ♂.

longicornis (Ashmead). Va. (Arlington).

Zelotypa longicornis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 365. ♂.

microneura (Kieffer). Calif. (Claremont).

Aclista microneura Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 349, 351. ♂.

monticola Muesebeck and Walkley. Calif. (Santa Cruz Mts.).

Aclista rufescens Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 375, 376. ♀. Preocc. by *Pantoclis rufescens* Ashmead, 1893, when the latter was placed in *Aclista* by Muesebeck and Walkley, 1951, although it has now been restored to *Pantoclis*.
Zygota monticola Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 684.

obliterata (Fouts). N. Y. (McLean Bogs).

Aclista obliterata Fouts, 1926. Brooklyn Ent. Soc., Bul. 21: 146, 147. ♂.

palustra (Fouts). N. Y. (McLean Bogs).

Aclista palustra Fouts, 1926. Brooklyn Ent. Soc., Bul. 21: 145, 146. ♂.

rufa (Ashmead). Tex.

Aclista rufa Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 375, 376. ♀.

scleroneura (Kieffer). Pa. (Jeannette).

Aclista scleroneura Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 349, 352. ♂.

simulans (Fouts). N. Y. (McLean Bogs).

Aclista simulans Fouts, 1926. Brooklyn Ent. Soc., Bul. 21: 146, 148. ♂.

texana Ashmead. Tex.

Zygota texana Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 373, 374. ♀.

Genus ACROPIESTA Foerster

Acropiesta Foerster, 1856. Hym. Stud., v. 2, pp. 129, 135, 136. No species. — Cameron, 1883. Ent. Soc. London, Trans., p. 195. One species doubtfully included and therefore not available as type-species.—Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 353. Two species.

Type-species: *Acropiesta flavicauda* Ashmead. Desig. by Muesebeck and Walkley, 1951.

Pautopiasta Maneval, 1939. Soc. Ent.de France, Bul. 44: 169, 170.

Type-species: *Cinetus flaviventris* Thomson. Orig. desig.

Taxonomy: Nixon, 1957. Roy. Ent. Soc. London, Handb. 8(3), pp. 24-27.

flavicauda Ashmead. Ont. (Ottawa).

Acropiasta flavicauda Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 354. ♀.

pulchella Whittaker. B. C. (Hollyburn).

Acropiasta pulchella Whittaker, 1930. Ent. Soc. Wash., Proc. 32: 75. ♀, ♂.

pulchella var. **melanocephala** Whittaker. B. C. (Hollyburn).

Acropiasta pulchella var. *melanocephala* Whittaker, 1930. Ent. Soc. Wash., Proc. 32: 76. ♀, ♂.

pulchella var. **rufa** Whittaker. B. C. (Hollyburn).

Acropiasta pulchella var. *rufa* Whittaker, 1930. Ent. Soc. Wash., Proc. 32: 76. ♀, ♂.

pulchella var. **rufifrons** Whittaker. B. C. (Hollyburn).

Acropiasta pulchella var. *rufifrons* Whittaker, 1930. Ent. Soc. Wash., Proc. 32: 76. ♀, ♂.

semirufa Fouts. Md. (Glen Echo).

Acropiasta semirufa Fouts, 1924. Ent. Soc. Wash., Proc. 26: 165. ♀.

subaptera Ashmead. Mich. (Marquette).

Acropiasta subaptera Ashmead, 1893. U. S. Nat. Mus., Bul. 45: 354. ♀.

Genus BELYTA Jurine

Belyta Jurine, 1807. Nouv. Meth. Class. Hym. Dipt., p. 311.

Type-species: *Belyta bicolor* Jurine. Monotypic.

Belita Haliday, 1857. Nat. Hist. Rev., v. 4, p. 169. Emend.

Balyta Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 366. Error.

Paraclista Kieffer, 1909. In Andre, Spec. Hym. Eur. Alg., v. 10, p. 476. Proposed as a subgenus of *Belyta* Jurine.

Type-species: *Belyta brachyptera* Thomson. Desig. by Kieffer, 1910.

Neobelyta Hellen, 1964. Fauna Fennica 18: 50. Proposed as a subgenus of *Belyta* Jurine.

Type-species: *Belyta sanguinolenta* Nees. Orig. desig.

There are no host association records for any of the North American species of *Belyta*. One unnamed European species is said to have been reared from mycetophilid larvae.

Revision: Kieffer, 1916. Das Tierreich, Lief. 44, pp. 387-422.

Taxonomy: Hellen, 1964. Fauna Fennica 18: 49-56.

anthracina Whittaker. B. C. (Hollyburn).

Belyta anthracina Whittaker, 1931. Ent. Soc. Wash., Proc. 33: 179. ♀.

bisulcata Kieffer. Pa. (Jeannette).

Belyta bisulcata Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 43. ♀, ♂.

borealis Whittaker. B. C. (Hollyburn).

Belyta boreale Whittaker, 1931. Ent. Soc. Wash., Proc. 33: 179. ♀.

californiae (Kieffer). Calif. (Placer County).

Zygota californica Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 373. ♂. Preocc. by *Aclista*

californica Ashmead, 1893, when transferred to *Aclista* by Kieffer, 1910.

Aclista californiae Kieffer, 1910. In Wytsman, Gen. Ins., fasc. 107, p. 24. N. name.

contempta Kieffer. Pa. (Pittsburgh).

Belyta contempta Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 359, 361. ♂.

crassicornis (Ashmead). Va. (Arlington).

Pautoclis crassicornis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 367, 369. ♀, (male misdtd.).

despecta Kieffer. Wis. (Polk County).

Belyta despecta Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 360, 362. ♂.

erythropus Ashmead. Wis.

Belyta erythropus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 356, 357. ♀.

frontalis Ashmead. Del.

Belyta frontalis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 356. ♀.

infuscata Kieffer. Pa. (Jeannette).

Belyta infuscata Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 359, 361. ♂.

klagesi Kieffer. Pa. (Jeannette).

Belyta Klagesi Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 360, 362. ♂.

longicollis Fouts. Pa. (Mount Holly Springs).

Belyta longicollis Fouts, 1926. Ent. Soc. Wash., Proc. 28: 174. ♀.

missouriensis (Ashmead). Mo. (St. Louis).

Aclista missouriensis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 375, 377. ♂.

nasuta (Provancher). Ont. (Ottawa).

Cinetus nasutus Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 178. ♀.

Taxonomy: Masner, 1969. Nat. Canad. 96: 718.

nigripes Kieffer. Calif. (Claremont).

Belyta nigripes Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 280. ♂.

occidentalis (Muesebeck and Walkley). Calif. (Claremont).

Belyta californica Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 360, 363. ♂. Preocc. by Ashmead, 1893, in *Cinetus* as treated by Muesebeck and Walkley, 1951.

Cinetus occidentalis Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 682.

N. name.

peninsularis (Muesebeck and Walkley). Fla. (Jacksonville).

Aclista floridana Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 376, 378. ♂. Preocc. by *Pantoclis floridana* Ashmead, 1893, when this name was transferred to *Aclista* by Muesebeck and Walkley, 1951, although it is now restored to *Pantoclis*.

Cinetus peninsularis Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 682. N. name.

picipes (Ashmead). D. C.

Pantoclis picipes Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 367, 368. ♂.

robustior Fouts. N. Y., Md.

Belyta robustior Fouts, 1925. Ent. Soc. Wash., Proc. 27: 152. ♀.

rostrata Harrington. Que. (Chelsea).

Belyta rostrata Harrington, 1899. Roy. Soc. Canada, Trans. (2) 5: 196. ♀.

rugifrons Fouts. N. Y., Md.

Belyta rugifrons Fouts, 1926. Brooklyn Ent. Soc., Bul. 21: 149. ♂.

rugosopetiolata (Ashmead). Va., La.

Aclista rugosopetiolata Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 375, 377. ♀.

sanguinea Whittaker. B. C. (Hollyburn).

Belyta sanguinea Whittaker, 1931. Ent. Soc. Wash., Proc. 33: 177. ♀, ♂.

sulcata Kieffer. Pa.

Belyta bisulcata Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 359, 360. ♀, ♂. Preocc. by Kieffer, 1908.

Belyta sulcata Kieffer, 1910. In Wytzman, Gen. Ins., fasc. 107, p. 22. N. name.

texana Ashmead. Tex.

Belyta texana Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 356, 357. ♀.

vera Kieffer. Wis. (Polk County).

Belyta vera Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 359, 362. ♂.

vilis Kieffer. Pa. (Pittsburgh).

Belyta vilis Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 360, 363. ♂.

whittakeri (Muesebeck and Walkley). B. C. (Hollyburn).

Belyta exaeata Whittaker, 1931. Ent. Soc. Wash., Proc. 33: 180. ♀. Preocc. by Kieffer, 1910, when placed in *Cinetus* by Muesebeck and Walkley, 1951.

Cinetus whittakeri Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 683. N. name.

xanthopus Kieffer. Wis. (Polk County).

Belyta xanthopus Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 360, 364. ♂.

xanthopus var. *assimilis* Kieffer. Pa., Wis.

Belyta xanthopus var. *assimilis* Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 360, 364. ♂.

xanthostoma Kieffer. Pa. (Jeannette).

Belyta xanthostoma Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 360, 363. ♂.

Genus DIPHORA Foerster

Diphora Foerster, 1856. Hym. Stud., v. 2, pp. 130, 140.

Type-species: *Diphora westwoodii* Foerster. Monotypic.

Taxonomy: Nixon, 1957. Roy. Ent. Soc. London, Handb. 8 (3), p. 41.

neartica Whittaker. B. C. (Hollyburn).

Diphora neartica Whittaker, 1930. Ent. Soc. Wash., Proc. 32: 74. ♀, ♂.

Genus OXYLABIS Foerster

Oxylabis Foerster, 1856. Hym. Stud., v. 2, pp. 128, 130, 133, 139.

Type-species: *Cinctus picipes* Nees. Desig. by Muesebeck and Walkley, 1951.

Lyteba Thomson, 1858. Ofvers. Kongl. Vetensk-Akad., Forh. 15: 155, 180.

Type-species: *Belyta bisulca* Nees. Monotypic.

Host associations unknown.

Revision: Kieffer, 1916. Das Tierreich, Lief. 44, pp. 363-374.

Taxonomy: Nixon, 1957. Roy. Ent. Soc. London, Handb. 8 (3), pp. 27-29.

arcuata Kieffer. Pa. (Jeannette).

Oxylabis arcuata Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 346, 348. ♂.

californica Kieffer. Calif. (San Mateo).

Oxylabis californica Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 279. ♀.

carinifrons Kieffer. Wis. (Polk County).

Oxylabis carinifrons Kieffer, 1909. Soc. Sci. de Bruxelles, Ann. 33: 346, 347. ♂.

fuscicornis (Ashmead). Que. (Hull).

Zelotya fuscicornis Ashmead, 1897. Canad. Ent. 29: 55. ♂.

klagesi Kieffer. Pa. (Jeannette).

Oxylabis Klagesi Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 42. ♂.

spinosa (Provancher). Que., Ont.

Aneurynchus (!) *spinosa* Provancher, 1881. Nat. Canad. 12: 262. ♀.

Genus ACANOSEMA Kieffer.

Acanosema Kieffer, 1908. In Andre, Spec. Hym. Eur. Alg., v. 10, pp. 360, 367, 407.

Type-species: *Acanosema rufum* Kieffer. Orig. desig.

Cardiopsilus Kieffer, 1908. In Andre, Spec. Hym. Eur. Alg., v. 10, pp. 360, 405.

Type-species: *Cardiopsilus productus* Kieffer. Monotypic.

Taxonomy: Nixon, 1957. Roy. Ent. Soc. London, Handb. 8 (3), pp. 21-24. —Hellen, 1964.

Fauna Fennica 18: 56-57.

sylvanum Whittaker. B. C. (Hollyburn).

Acanosema sylvana Whittaker, 1930. Ent. Soc. Wash., Proc. 32: 134. ♀, ♂.

Genus RHYNCHOPSILUS Kieffer

Rhynchopsilus Kieffer, 1908. In Andre, Spec. Hym. Eur. Alg., v. 10, pp. 360, 400.

Type-species: *Rhynchopsilus apertus* Kieffer. Desig. by Kieffer, 1910.

Brunnicophilus Nixon, 1931. Ent. Rec. and Jour. Variation 43: 83.

Type-species: *Brunnicophilus donisthorpei* Nixon. Orig. desig.

Taxonomy: Nixon, 1957. Roy. Ent. Soc. London, Handb. 8 (3), pp. 13-15.

conicus (Ashmead). Va. (Arlington).

Aclista conica Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 375, 377. ♀.

Genus POLYPEZA Foerster

Polypeza Foerster, 1856. Hym. Stud., v. 2, pp. 123, 127. No species. — Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 385, 387. One species.

Type-species: *Polypeza pergandei* Ashmead. First included species.

Atelopsilus Kieffer, 1908. In Andre, Spec. Hym. Eur. Alg., v. 10, p. 360.

Type-species: *Pantolyta brunnea* Ashmead. Orig. desig.

Propantolyta Kieffer, 1910. In Andre, Spec. Hym. Eur. Alg., v. 10, pp. 697, 709.

Type-species: *Polypeza pergandei* Ashmead. Orig. desig.

Taxonomy: Masner and Sundholm, 1959. Acta Soc. Ent. Cechoslov. 56: 161-164. — Masner, 1964. Acta Soc. Ent. Cechoslov. 61: 131.

alaskensis (Ashmead). Alaska (Muir Inlet).

Spilomicrus alaskensis Ashmead, 1902. Wash. Acad. Sci., Proc. 45: 383. ♀.

brunnea (Ashmead). Wash. (Easton).

Pantolyta brunnea Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 383. ♀.

Taxonomy: Masner, 1964. Acta Soc. Ent. Cechoslov. 61: 131.

pergandei Ashmead. Va. (Arlington).

Polypeza Pergandei Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 387. ♀, ♂.

Genus SYNACRA Foerster

Synacra Foerster, 1856. Hym. Stud., v. 2, pp. 128, 130, 134. No species. — Marshall, 1873. Cat. Brit. Hym.; Oxyura, p. 10. One species but two names.

Type-species: *Diapria brachialis* Nees. Desig. by Ashmead, 1893.

Artibolus Haliday, 1857. Nat. Hist. Rev., v. 4, p. 173.

Type-species: *Diapria brachialis* Nees. Desig. by Muesebeck and Walkley, 1956.

Neuropria Kieffer, 1904. Soc. Hist. Nat. Metz, Bul. 23: 53.

Type-species: *Neuropria sociabilis* Kieffer. Monotypic.

Prosynacra Kieffer, 1905. Mus. Civ. Stor. Nat. Genova, Ann. (3) 2: 35, 37. No species.

— Kieffer, 1910. Lab. Zool. Portici, Bol. 4: 108. One species.

Type-species: *Prosynacra nigriceps* Kieffer. First included species.

Parateloipsis Whittaker, 1930. Ent. Soc. Wash., Proc. 32: 73.

Type-species: *Parateloipsis canadensis* Whittaker. Orig. desig.

Taxonomy: Pschorn-Walcher, 1957. Schweiz. Ent. Gesell., Mitt. 30: 74-76. — Masner, 1964.

Acta Soc. Ent. Cechoslov. 61: 131-132. — Masner, 1967. In Krombein and Burks, U. S.

Dept. Agr., Agr. Monog. 2, Sup. 2, p. 295.

canadensis (Whittaker). B. C. (Chilliwack).

Parateloipsis canadensis Whittaker, 1930. Ent. Soc. Wash., Proc. 32: 73. ♀.

gracilis (Fouts). Mass. (Petersham). Ecology: Reared with *Pissodes strobi* (Peck).

Prosynacra gracilis Fouts, 1927. Ent. Soc. Wash., Proc. 29: 171. ♀.

insoleta Fouts. Minn. (St. Paul). Ecology: Reared from galls on raspberry roots.

Synacra insoleta Fouts, 1966. Ent. Soc. Wash., Proc. 68: 18. ♀, ♂.

SUBFAMILY DIAPRIINAE

Revision: Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 384-448 (North American species).

— Kieffer, 1910-1911. In Andre, Spec. Hym. Eur. Alg., v. 10, pp. 691-1008 (pp. 691-752 pub. in 1910, pp. 753-1008 in 1911). — Kieffer, 1912 (1911). In Wytzman, Gen. Ins., fasc. 124, pp. 1-72. — Dodd, 1915. Roy. Soc. So. Austral., Trans. 39: 397-443 (Australian species).

— Kieffer, 1916. Das Tierreich, Lief. 44, pp. 3-347 (World fauna).

Genus PARAMESIUS Westwood

Paramesius Westwood, 1832. London, Edinb. and Dublin Phil. Mag. and Jour. Sci. (3) 1: 129.

Type-species: *Paramesius rufipes* Westwood. Monotypic.

Lipoglyptus Crawford, 1910. U. S. Natl. Mus., Proc. 38: 123.

Type-species: *Lipoglyptus primus* Crawford. Orig. desig.

Aparamesius Kieffer, 1913. Insecta 3: 436.

Type-species: *Aparamesius carinatus* Kieffer. Orig. desig.

Taxonomy: Baltazar, 1961. Philippine Jour. Sci. 90: 395.

analis (Ashmead). "Carolina," Tex.

Basalys analis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 443, 445. ♀.

clavipes Ashmead. Ont. (Ottawa).

Paramesius clavipes Ashmead, 1888. Canad. Ent. 20: 53. ♀.

foveatus (Provancher). Que. (Cap Rouge).

Spilomicrus foveatus Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 176. "♀"
= ♂. Placement in *Paramesius* communicated by L. Masner in correspondence.

laetus Fouts. B. C. (Chilliwack).

Paramesius laetus Fouts, 1927. Ent. Soc. Wash., Proc. 29: 170. ♀.

nigriclavus (Fouts). Ont., N. Y.

Aparamesius nigriclavus Fouts, 1926. Ent. Soc. Wash., Proc. 28: 169. ♀.

oregonensis Ashmead. B. C., Oreg.

Paramesius oregonensis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 392, 395. ♂.

pallidipes Ashmead. D. C., Va., "Carolina."

Paramesius pallidipes Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 392, 395. ♀, ♂.

parvulus Ashmead. D. C., Va.

Paramesius parvulus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 392, 393. ♀.

spinosus Ashmead. D. C., Va.

Paramesius spinosus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 392, 394. ♀, ♂.

utahensis Ashmead. Utah (Utah Lake).

Paramesius utahensis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 392, 394. ♀.

Genus ENTOMACIS Foerster

Entomacis Foerster, 1856. Hym. Stud., v. 2, pp. 121, 123. No species. — Marshall, 1873.

Cat. Brit. Hym.; Oxyura, p. 10. Two species.

Type-species: *Diapria* (*Glyphidopria*) *platyptera* Haliday. Desig. by Muesebeck and Walkley, 1951.

Hemilexis Foerster, 1856. Hym. Stud., v. 2, pp. 122, 123, 127. No species. — Ashmead, 1887.

Canad. Ent. 19: 196. One species.

Type-species: *Hemilexis mellipetiola* Ashmead. First included species.

Glyphidopria Haliday, 1857. Nat. Hist. Rev., v. 4, p. 172. Proposed as a subgenus of *Diapria* Latreille.

Type-species: *Diapria* (*Glyphidopria*) *platyptera* Haliday. Desig. by Muesebeck and Walkley, 1951.

Hemilerodes Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 386, 399.

Type-species: *Hemilerodes floridana* Ashmead. Orig. desig.

Adeliopria Ashmead, 1902. Biol. Bul. 3: 15.

Type-species: *Adeliopria longii* Ashmead. Orig. desig.

Taxonomy: Masner, 1964. Acta Soc. Ent. Cechoslov. 61: 134. — Sundholm, 1970. South African Anim. Life 14: 321-324.

ambigua (Brues). Conn. (Colebrook). Ecology: Taken in nest of *Aphaenogaster rudis picea* (Emery).

Hemilerodes ambigua Brues, 1903. Amer. Ent. Soc., Trans. 29: 126. ♀.

californica (Ashmead). Wash., Calif. Host: *Forcipomyia* sp.

Hemilexis californica Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 389, 390. ♂.

canadensis (Harrington). Canada.

Hemilerodes canadensis Harrington, 1899. Roy. Soc. Canada, Trans. (2) 5: 201. ♀.

floridana (Ashmead). Fla. (Jacksonville).

Hemilerodes floridana Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 400. ♀. The male mentioned by Ashmead is a species of Aphidiidae.

longii (Ashmead). Tex. (Austin). Host: *Forcipomyia wheeleri* (Long) in an old ant nest.

Adeliopria longii Ashmead, 1902. Biol. Bul. 3: 15. ♀, ♂.

Taxonomy: Masner 1964. Acta Soc. Ent. Cechoslov. 61: 134-135.

mellipetiola (Ashmead). Fla.

Hemilexis mellipetiola Ashmead, 1887. Canad. Ent. 19: 196. "♂" = ♀.

Hemilexis mellipetiolata Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 389, 390. Emend.

submarginata (Ashmead). D. C., Va.

Hemilexis submarginata Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 389. ♀, (male misdet.).

Genus HOPLOPRIA Ashmead

Hoplopria Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 385, 386, 388.

Type-species: *Hoplopria pulchripennis* Ashmead. Orig. desig.

No Nearctic species have been described, but the collection of the U. S. National Museum of Natural History contains unnamed specimens, identified by L. Masner as belonging to this genus, from Md., S. C., and Fla.

Genus SPILOMICRUS Westwood

Spilomicrus Westwood, 1832. London, Edinb. and Dublin Phil. Mag. and Jour. Sci. (3) 1: 129.

Type-species: *Spilomicrus stigmatalis* Westwood. Monotypic.

Chlidonia Herrich-Schaeffer, 1838. Faunae Ins. German., Heft 157, p. 24.

Type-species: *Chlidonia moniliata* Herrich-Schaeffer. Desig. by Viereck, 1914.

Loxotropa Foerster, 1856. Hym. Stud., v. 2, pp. 122, 123, 126.

Type-species: *Psilus antennatus* Jurine. Monotypic.

Loxoptera Mani, 1941. Cat. Indian Ins., pt. 26, pp. 39, 40, 41, 47. Error for *Loxotropa* Foerster.

Eriopria Kieffer, 1910. In Andre, Spec. Hym. Eur. Alg., v. 10, pp. 693, 744.

Type-species: *Eriopria nigra* Kieffer. Desig. by Kieffer, 1912.

Tritopria Kieffer, 1910. In Andre, Spec. Hym. Eur. Alg., v. 10, pp. 717, 748.

Type-species: *Tritopria lusitanica* Kieffer. Monotypic.

Cologlyptus Crawford, 1910. U. S. Natl. Mus., Proc. 38: 123.

Type-species: *Cologlyptus kiefferi* Crawford. Orig. desig.

Scutellipria Szabo, 1961. Mus. Nat. Hungarici, Ann. Hist.-Nat. 53: 493.

Type-species: *Scutellipria quinquepunctata* Szabo. Orig. desig.

One species of *Spilomicrus* has been reared from the pupa of a syrphid; otherwise there appear to be no reliable records of host association for members of this genus.

Revision: Kieffer, 1916. Das Tierreich, Lief. 44, pp. 283-307.

Taxonomy: Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 385 (Tribe Spilomicrini proposed).

—Masner, 1964. Entomophaga 9: 81-85. —Sundholm, 1970. South African Anim. Life 14: 314-320.

armatus Ashmead. D. C.

Spilomicrus armatus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 397. ♀.

atriclavus Ashmead. Ont. (Ottawa).

Spilomicrus atriclavus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 397, 398. ♀.

atropetiolatus (Ashmead). Colo. (Westcliffe).

Ismarus atropetiolatus Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 11. ♀.

bifoveatus Kieffer. Pa. (Jeannette).

Spilomicrus bifoveatus Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 40. ♀, ♂.

brevicornis (Ashmead). Colo.

Basalys brevicornis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 443, 446. ♀.

californicus (Ashmead). Calif. (Santa Cruz Mts.).

Basalys californica Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 443, 446. ♀. The male is the holotype of *Trichopria californiae* (Kieffer), 1916.

flavicornis Ashmead. Va. (Arlington).

Spilomicrus flavicornis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 397, 398. ♂.

foutsii Masner. N. Y.

Spilomicrus kiefferi Fouts, 1925. Ent. Soc. Wash., Proc. 27: 150. ♀, ♂. Preocc. by Crawford, 1910.

Spilomicrus foutsii Masner, 1967. In Krombein and Burks, U. S. Dept. Agr., Agr. Monog. 2, Sup. 2, p. 289. N. name.

ruficornis (Provancher). Canada.

Basalys ruficornis Provancher, 1881. Nat. Canad. 12: 261. ♂.

Taxonomy: Masner, 1969. Nat. Canad. 96: 778.

unifoveatus Kieffer. Pa. (Jeannette).

Spilomicrus unifoveatus Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 41. ♀.

virginicus Fouts. Va. (Falls Church). Host: *Xylota bicolor* Loew.

Spilomicrus virginicus Fouts, 1926. Ent. Soc. Wash., Proc. 28: 168. ♀.

Genus PENTAPRIA Kieffer

Pentapria Kieffer, 1905 (October). Genova Mus. Civ. Stor. Nat., Ann. (3) 2: 34. No species.

— Kieffer, 1905 (November). Soc. Hist. Nat. Metz (2) 12: 105. One species.

Type-species: *Pentapria conjugens* Kieffer. First included species.

Xenopria Fouts, 1939. Ent. Soc. Wash., Proc. 41: 260.

Type-species: *Xenopria columbiana* Fouts. Orig. desig.

Taxonomy: Masner, 1964. Acta Soc. Ent. Cechoslov. 61: 134.

columbiana (Fouts). B. C. (Kootenay Natl. Park). Host: A species of Stratiomyidae.

Xenopria columbiana Fouts, 1939. Ent. Soc. Wash., Proc. 41: 261. ♀, ♂.

nigripes (Fouts). Wyo. (Saratoga).

Xenopria nigripes Fouts, 1939. Ent. Soc. Wash., Proc. 41: 262. ♀.

punctata (Fouts). Md. (Cabin John).

Xenopria punctata Fouts, 1939. Ent. Soc. Wash., Proc. 41: 263. ♀.

Genus ANEURHYNCHUS Westwood

Aneurhynchus Westwood, 1832. London, Edinb. and Dublin Phil. Mag. and Jour. Sci. (3) 1: 129.

Type-species: *Aneurhynchus galesiformis* Westwood. Monotypic.

Aneurhynchus Brulle, 1846. In Lepeletier, Hist. Nat. Ins. Hym., v. 4, p. 612. Emend.

Aneurhynchus Marshall, 1873. Cat. Brit. Hym.; Oxyura, p. 11. Emend.

Glyptonota Foerster, 1856. Hym. Stud., v. 2, pp. 122, 126. No species. — Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 401. One species.

Type-species: *Glyptonota nigriclavata* Ashmead, First included species.

Revision: Kieffer, 1916. Das Tierreich, Lief. 44, pp. 329-338.

Taxonomy: Masner and Sundholm, 1959. Acta Soc. Ent. Cechoslov. 56: 161-168.

floridanus Ashmead. Fla.

Aneurhynchus floridanus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 404, 405. ♂.

mellipes Ashmead. Ont. (Ottawa).

Aneurhynchus mellipes Ashmead, 1888. Canad. Ent. 20: 52. ♀.

nigriclavatus (Ashmead). D. C.

Glyptonota nigriclavata Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 401. ♀.

unifoveatus Kieffer. Pa. (Jeannette).

Aneurhynchus unifoveatus Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 41. ♂.

virginicus Ashmead. W. Va. (Harpers Ferry).

Aneurhynchus virginicus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 404, 405. ♂.

Genus PSILUS Panzer

Psilus Panzer, 1801. Faunae Ins. German., Heft 83, no. 11.

Type-species: *Psilus cornutus* Panzer. Monotypic.

Galesus Haliday, 1829. In Curtis, Guide Brit. Ins., column 108.

Type-species: *Psilus cornutus* Panzer. Monotypic. Three species were listed but two of them were *nomina nuda*.

Coptera Say, 1836. Boston Jour. Nat. Hist. 1: 281.

Type-species: *Coptera polita* Say. Monotypic.

Anisoptera Herrich-Schaeffer, 1940. Nomencl. Ent. v. 2, pp. 57, 69. Preocc. by Berthold, 1827.

Type-species: *Anisoptera egregia* Herrich-Schaeffer. Monotypic.

Laches Gistel, 1848. Naturgesch. Thierr. f. hoh. Schul., p. viii. N. name for *Anisoptera* Herrich-Schaeffer.

Schizogalesus Kieffer, 1911. In Andre, Spec. Hym. Eur. Alg., v. 10, pp. 832, 833. Proposed as a subgenus of *Galesus* Haliday.

Type-species: *Galesus (Schizogalesus) punctatus* Kieffer. Desig. by Muesebeck and Walkley, 1951.

The few species of *Psilus* that have been reared from known hosts are parasites of Diptera, especially of Lonchaeidae and Tephritidae. An African species, *P. silvestrii* (Kieffer), which is a parasite of various tephritids of the genera *Ceratitus* and *Dacus*, was introduced into Hawaii as a possible aid in the control of the Mediterranean fruit fly.

Revision: Kieffer, 1916. Das Tierreich, Lief. 44, pp. 200-235 (World fauna). —Nixon, 1930. Ann. and Mag. Nat. Hist. (10) 6: 399-414 (African species).

Taxonomy: Brues, 1906. Wis. Nat. Hist. Soc., Bul. 4: 150-152 (Key to No. Amer. species).

Biology: Clausen, 1940. Entomophagous Insects, pp. 261-262.

Morphology: Snodgrass, 1941. Smithsn. Misc. Collect. 99(4): 38-40 (male genitalia).

atricornis (Ashmead). Ont., Md., Va., Idaho, Wash. Host: *Lonchaea corticis* Taylor.

Galesus atricornis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 408, 409. ♀.

autumnalis (Brues). Wis. (Milwaukee County).

Galesus autumnalis Brues, 1906. Wis. Nat. Hist. Soc., Bul. 4: 150, 151. ♀.

clarimontis (Kieffer). Calif. (Claremont).

Galesus clarimontis Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 285. ♂.

microtomus (Kieffer). Calif. (San Mateo).

Galesus microtomus Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 285. ♂.

pilosus (Ashmead). Tex.

Galesus pilosus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 409, 411. ♂.

politus (Say). Conn., Ont., N. Y., D. C., Md., Fla., Ind. Host: *Rhagoletis cingulata* (Loew), *R. fausta* (O. S.).

Coptera polita Say, 1836. Boston Jour. Nat. Hist. 1: 282. ♂.

punctiger (Fouts). Tex. (Uvalde). Host: *Drosophila* sp.?

Galesus punctiger Fouts, 1926. Ent. Soc. Wash., Proc. 28: 170. ♀, ♂.

quebecensis (Provancher). Que., D. C.

Galesus Quebecensis Provancher, 1881. Nat. Canad. 12: 260. ♂.

texanus (Ashmead). Tex.

Galesus texanus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 409, 411. ♂.

viereckii (Brues). Conn. (Colebrook).

Galesus viereckii Brues, 1905. Wis. Nat. Hist. Soc., Bul. 3: 187. ♂.

Genus MONELATA Foerster

Monelata Foerster, 1856. Hym. Stud., v. 2, pp. 123, 127. No species. —Marshall, 1873. Cat. Brit. Hym.; Oxyura, p. 13. Three species.

Type-species: *Diapria parvula* Nees. Desig. by Ashmead, 1893.

Corynopria Haliday, 1857. Nat. Hist. Rev., v. 4, p. 170. Proposed as a subgenus of *Diapria* Latreille.

Type-species: *Diapria petiolaris* Nees. Desig. by Muesebeck and Walkley, 1951.

Entomopria Kieffer, 1912 (1911). In Wytsman, Gen. Ins., fasc. 124, pp. 4, 18.

Type-species: *Corynopria solida* Thomson. Monotypic.

There appear to be no published records of host association for any species of this genus.

Taxonomy: Pschorn-Walcher, 1956. Schweiz. Ent. Gesell., Mitt. 29: 58-67.

hirticollis Ashmead. Ont. (Ottawa).

Monelata hirticollis Ashmead, 1888. Canad. Ent. 20: 54. ♀.

mellicollis Ashmead. Fla. (Jacksonville).

Monelata mellicollis Ashmead, 1887. Canad. Ent. 19: 197. ♀.

nigra Whittaker. B. C. (Hollyburn).

Monelata nigra Whittaker, 1930. Ent. Soc. Wash., Proc. 32: 133. ♀.

Genus BASALYS Westwood

Basalys Westwood, 1833. London, Edinb. and Dublin Phil. Mag. and Jour. Sci. (3) 3: 343.

Type-species: *Basalys fumipennis* Westwood. Monotypic.

Tropidopsis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 386, 402. Preocc. by Brauer and Bergenstamm, 1889.

Type-species: *Tropidopsis clavato* Ashmead. Orig. desig.

Ceratopria Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 407, 428.

Type-species: *Ceratopria longiceps* Ashmead. Orig. desig.

Acidopria Kieffer, 1913. Insecta 3: 442.

Type-species: *Acidopria varicornis* Kieffer. Desig. by Kieffer, 1916.

Nesopria Muesebeck and Walkley, 1956. U. S. Natl. Mus., Proc. 105: 374. N. name for

Tropidopsis Ashmead.

A North American form was reared from a species of Anthomyiidae and another was found in the nest of a bee. There is also a record of a European species having been collected in an ant nest. Otherwise there seems to be nothing in the literature concerning the habits or host relations of members of this genus.

Revision: Kieffer, 1916. Das Tierreich, Lief. 44, pp. 192-200.

Taxonomy: Sundholm, 1960. Opusc. Ent. 25: 221. — Masner, 1964. Entomophaga 9: 85-86. **ashmeadianus** (Kieffer). "Canada."

Loxotropa ashmeadiana Kieffer, 1916. Das Tierreich, Lief. 44, pp. 171, 190. ♀.

californicus (Ashmead). Calif. (Santa Cruz Mts.).

Loxotropa californica Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 413, 415. ♀.

Basalys barda Masner and Muesebeck, 1968. U. S. Natl. Mus. Bul. 270: 8. Unnecessarily proposed as a n. name for *Loxotropa californica* Ashmead.

columbianus (Ashmead). Md., D. C., Va. Ecology: Taken in nest of *Lasioglossum pruinosum* (Robertson).

Loxotropa columbiana Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 413. ♀.

Loxotropa ruficornis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 413, 414. ♂. Preocc. by Thomson, 1858.

Loxotropa ashmeadi Kieffer, 1911. In Andre, Spec. Hym. Eur. Alg., v. 10, p. 923. N. name for *L. ruficornis* Ashmead.

Taxonomy: Fouts, 1927. Ent. Soc. Wash., Proc. 29: 167.

Biology: Melander and Brues, 1903. Biol. Bul. 5: 9, 23.

flavipes (Ashmead). Md., D. C., Va., Ill.

Loxotropa flavipes Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 413, 415. ♀, ♂.

fuscipennis Ashmead. D. C.

Basalys fuscipennis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 443, 444. ♂.

ganahlil Dalla Torre. D. C.

Basalys picipes Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 443, 444. ♂. Preocc. by Nees, 1834.

Basalys ganahlil Dalla Torre, 1898. Cat. Hym., v. 5, p. 432. N. name.

longiceps (Ashmead). Va. (Arlington).

Ceratopria longiceps Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 429. ♀, (male misdet.).

microtoma Kieffer. Pa. (Sunbury).

Basalys microtoma Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 39. ♂.

modestus (Brues). Pa. (Lehigh Gap).

Loxotropa modesta Brues, 1905. Wis. Nat. Hist. Soc., Bul. 3, 188. ♀.

nanus (Ashmead). Fla.

Loxotropa nana Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 413, 415. ♀.

nigrescens (Fouts). Sask., B. C.

Loxotropa nigrescens Fouts, 1927. Ent. Soc. Wash., Proc. 27: 169. ♀.

pegomyiae (Brues). Minn. Host: *Hylemya brassicae* (Bouche).

Loxotropa pegomyiae Brues, 1907. Extr. from Rpt. Minn. State Ent., p. 1. ♀, ♂.

pusillus (Ashmead). D. C., Va.

Ceratopria pusilla Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 429, 430. ♀.

utahensis Ashmead. Utah (Canyon City).

Basalys utahensis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 443, 444. ♂.

Genus IDIOTYPA Foerster

Idiotypa Foerster, 1856. Hym. Stud., v. 2, pp. 122, 125. No species. — Marshall, 1873. Cat.

Brit. Hym.; Oxyura, p. 11. Two species.

Type-species: *Diapria (Mionopria) maritima* Haliday. Desig. by Ashmead, 1893.

Mionopria Haliday, 1857. Nat. Hist. Rev., v. 4, p. 172. Proposed as a subgenus of *Diapria* Latreille.

Type-species: *Diapria (Mionopria) maritima* Haliday. Monotypic.

pallipes Fouts. N. Y. (McLean).

Idiotypa pallipes Fouts, 1925. Ent. Soc. Wash., Proc. 27: 102. ♀.

Genus TRICHOPRIA Ashmead

Trichopria Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 407, 431.

Type-species: *Trichopria pentaplasta* Ashmead. Orig. desig.

Phaenopria Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 407, 436.

Type-species: *Phaenopria minutissima* Ashmead. Orig. desig.

Planopria Kieffer, 1908. Soc. Hist. Nat. Metz, Bul. 25: 19.

Type-species: *Diapria californica* Ashmead. Desig. by Muesebeck and Walkley, 1951.

Orthopria Kieffer, 1911. In Andre, Spec. Hym. Eur. Alg., v. 10, pp. 983, 984.

Type-species: *Diapria californica* Ashmead. Desig. by Muesebeck and Walkley, 1951.

Ashmeadopria Kieffer, 1912 (1911). In Wytsman, Gen. Ins., fasc. 124, pp. 8, 10, 59.

Type-species: *Diapria verticillata* Latreille. Desig. by Mani, 1941.

Rhopalopria Kieffer, 1912 (1911). In Wytsman, Gen. Ins., fasc. 124, pp. 8, 61.

Type-species: *Rhopalopria vulgaris* Kieffer. Monotypic.

Neodiapria Kieffer, 1916. Das Tierreich, Lief. 44, pp. xxi, 346.

Type-species: *Tropidopria erynniae* Kieffer. Monotypic.

Apparently the species of this genus are very numerous, most of them still undescribed. They are parasites of Diptera, including members of the families Tephritidae, Tachinidae, Syrphidae, Ephydriidae, Stratiomyidae, Calliphoridae, Sarcophagidae, Drosophilidae, Glossinidae, Tabanidae, Chloropidae, Agromyzidae and Sciomyzidae.

Revision: Kieffer, 1916. Das Tierreich, Lief. 44, pp. 52-65 and 77-146.

Taxonomy: Mani, 1941. Cat. Indian Ins., pt. 26, pp. 44-47. — Sundholm, 1960. Opusc. Ent. 25: 218-222. — Masner, 1964. Acta Soc. Ent. Cechoslov. 61: 136. — Masner, 1965. Brit. Mus. (Nat. Hist.), Bul., Ent., Sup. 1, p. 40.

Biology: Cros, 1935. Soc. d'Hist. Nat. de l'Afrique du Nord, Bul. 26: 131-136.

abdominalis Fouts. N. J. (Riverton).

Trichopria (Trichopria) abdominalis Fouts, 1926. Ent. Soc. Wash., Proc. 28: 174. ♀.

acutiventris (Brues). Tex. (near Austin). Ecology: In nest of *Labidus coecus* (Latreille).

Phaenopria acutiventris Brues, 1902. Amer. Nat. 36: 372. ♀.

affinis (Ashmead). D. C.

Phaenopria affinis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 437, 440. ♀.

agromyzae (Fitch). N. Y. Host: *Meoneura vagans* (Fall.).

Diapria agromyzae Fitch, 1856 (1855). N. Y. State Agr. Soc., Trans. 15: 535. ♀, ♂.

angustipennis Muesebeck. N. Y. (Ithaca). Host: *Lemnaphila scotlandae* Cress.

Trichopria angustipennis Muesebeck, 1939. Ent. Soc. Wash., Proc. 41: 60. ♀, ♂.

Biology: Scotland, 1939. Ent. Soc. Amer., Ann. 32: 717.

armata (Ashmead). Ont. (Ottawa).

Loxotropa armata Ashmead, 1888. Canad. Ent. 20: 53. ♀.

atrichomelinae Muesebeck. N. Y. Host: *Atrichomelina pubera* (Loew).

Trichopria atrichomelinae Muesebeck, 1972. Ent. News 83: 141. ♀, ♂.

bifovea Kieffer. Calif.

Diapria bifoveata Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 286, 287. ♀. Preocc. by Ashmead, 1895.

Trichopria bifovea Kieffer, 1912 (1911). In Wytsman, Gen. Ins., fasc. 124: 64. N. name.

bifoveolata (Ashmead). W. Va. (Harpers Ferry).

Ceratopria bifoveolata Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 429, 430. ♀.

californiae (Kieffer). Calif. (Santa Cruz Mts.).

Basalys californiae Kieffer, 1916. Das Tierreich, Lief. 44, pp. 193, 199. ♂. See *Spilomicrus californicus* (Ashmead).

californica (Ashmead). Calif. (Santa Cruz Mts.).

Diapria californica Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 421, 422. ♀, ♂.

carolinensis Ashmead. Pa., "Carolina."

Trichopria carolinensis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 433, 434. ♀.

clarimontis (Kieffer). Calif. (Claremont).

Diapria clarimontis Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 286, 287. ♂.

columbiana (Ashmead). D. C., Va., Mich., Minn. Host: *Hydrellia bergi* Cress. H. sp.

Diapria columbiana Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 422, 424. ♀.

crassiclava (Kieffer). Calif. (San Mateo).

Diapria crassiclava Kieffer, 1906 (1905). Berlin Ent. Ztschr. 50: 287, 288. ♀.

dentata Muesebeck. Ala. (Town Creek). Host: A species of Syrphidae.

Trichopria dentata Muesebeck, 1967. Fla. Ent. 50: 59. ♀, ♂.

discreta Muesebeck and Walkley. D. C.

Diapria tetraplasta Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 422, 426. ♀. Preocc. by Ashmead, 1893.

Trichopria discreta Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 678. N. name.

erythropus (Ashmead). D. C., Va., Fla.

Diapria erythropus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 421, 423. ♀, ♂.

erythrothorax (Ashmead). Fla. (Jacksonville).

Diapria erythrothorax Ashmead, 1887. Canad. Ent. 19: 196. ♂.

flavipes Ashmead. Va. (Arlington).

Trichopria flavipes Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 433, 436. ♀.

floridana (Ashmead). Fla. (Jacksonville).

Cephalonomia floridana Ashmead, 1887. Canad. Ent. 19: 196. "♂" = ♀.

floridensis (Ashmead). Fla. (Fort George).

Galesus floridensis Ashmead, 1887. Canad. Ent. 19: 195. ♂.

Galesus floridanus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 410. Error.

foveata (Kieffer). Pa. (Jeannette).

Tropidopria foveata Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 38. ♂.

haematobiae (Ashmead). Va., Tex. Host: *Haematobia irritans* (L.).

Phaenopria haematobiae Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 437, 438. ♀.

harringtoni (Ashmead). Ont. (Ottawa).

Loxotropa Harringtoni Ashmead, 1888. Canad. Ent. 20: 53. ♀.

- hirticollis** (Ashmead). Fla., Tex. Host: *Blaesoxipha plinthopyga* (Wied.).
Cephalonomia hirticollis Ashmead, 1887. Canad. Ent. 19: 195. ♀.
 Biology: Roberts, 1935. Jour. Agr. Res. 50: 491.
- infuscatipes** (Ashmead). Ont. (Ottawa).
Ceratipria (?) *infuscatipes* Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 429, 431. ♀.
- kiefferi** Muesebeck, n. name. Calif. (Claremont).
Diapria montana Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 287, 288. ♀. Preocc. by Ashmead, 1893.
- megaplasta** (Ashmead). Ont. (Ottawa).
Ceratopria megaplasta Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 429, 430.
Ceratopria megaplasta Schulz, 1906. Spolia Hym., p. 151. Emend.
- melanocera** (Kieffer). Calif. (San Mateo).
Diapria melanocera Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 287, 288. ♀.
- minutissima** (Ashmead). Fla., Tenn.
Phaenopria minutissima Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 437, 438. ♀.
- montana** (Ashmead). Calif. (Santa Cruz Mts.).
Phaenopria montana Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 438, 440. ♂.
- muscae** (Ashmead). Calif.
Diapria muscae Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 422, 426. ♀, ♂.
- myoleptae** Muesebeck. Fla. (Gainesville). Host: *Myolepta varipes* Loew.
Trichopria myoleptae Muesebeck, 1967. Fla. Ent. 50: 57. ♀, ♂.
- nevadensis** (Kieffer). Nev. (Ormsby County).
Diapria nevadensis Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 287, 288. ♀.
- occidentalis** (Fouts). B. C., Calif. Host: *Hippelates collusor* (Townsend).
Phaenopria occidentalis Fouts, 1927. Ent. Soc. Wash., Proc. 29: 168. ♀.
 Biology: Legner, Bay and Medved, 1966. Ent. Soc. Amer., Ann. 59: 977-983.
- pacifica** Ashmead. Calif. (Santa Cruz Mts.).
Trichopria pacifica Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 433, 436. ♀.
- paludis** Muesebeck. N. Y. (Ithaca). Host: *Lemnaphila scotlandae* Cress.
Trichopria paludis Muesebeck, 1939. Ent. Soc. Wash., Proc. 41: 62. ♀.
 Biology: Scotland, 1939. Ent. Soc. Amer., Ann. 32: 717.
- parkeri** Fouts. Md. (Williamsport).
Trichopria parkeri Fouts, 1920. Ent. Soc. Wash., Proc. 22: 61. ♀, ♂.
- parva** (Ashmead). D. C.
Phaenopria parva Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 438, 440. ♂.
- pentaplasta** Ashmead. D. C., Va., Kans.
Trichopria pentaplasta Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 432, 433. ♀, ♂.
- pezomachoides** (Ashmead). Ont. (Ottawa).
Loxotropa pezomachoides Ashmead, 1888. Canad. Ent. 20: 53. ♀.
Phaenopria aptera Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 437, 439. ♀.
- popei** (Muesebeck). N. Y., Fla., Mich. Host: *Sepelton fuscipennis* Loew, *Elgiva sundewalli* Kloet and Hincks, *Atrichomelina pubera* (Loew), *Dictya* sp.
Phaenopria popei Muesebeck, 1950 (1949). Canad. Ent. 81: 234. ♀, ♂.
 Biology: Knutson and Berg, 1963. Canad. Ent. 95: 724-726.
- popenoei** Ashmead. Kans. (Riley County).
Trichopria Popenoei Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 433, 435. ♀, (male misdet.).
- popenoei** var. *illinoisensis* Girault, Ill. (Urbana).
Trichopria popenoei var. *illinoisensis* Girault, 1920. U. S. Natl. Mus., Proc. 58: 178. ♀, ♂.
- provancheri** (Kieffer). Ont. (Ottawa).
Ashmeadopria provancheri Kieffer, 1916. Das Tierreich, Lief. 44, pp. 122, 141. ♀.
- rufipes** Ashmead. D. C.
Trichopria rufipes Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 433, 434. ♀, (male misdet.).

schwarzii (Ashmead). Md., D. C., Va., Fla.

Phaenopria Schwarzii Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 437, 439. ♀.

tabanivora Fouts. Mass., Sask., Host: *Chrysops mitis* O. S., *Tabanus reinwardtii* Wied., *T. nigrovittatus* Macq.

Trichopria (Trichopria) tabanivora Fouts, 1926. In Cameron, Bul. Ent. Res. 17: 39. ♀, ♂.

tetraplasta (Ashmead). D. C.

Tropidopria tetraplasta Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 417, 420. ♀.

texana (Ashmead). Tex.

Diapria texana Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 421, 424. ♀.

unifoveata (Kieffer). Calif. (Santa Clara County).

Tropidopria unifoveata Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 286. ♂.

utahensis (Ashmead). Utah (Salt Lake).

Diapria utahensis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 421, 423. ♀.

villosicornis (Kieffer). Nev. (Ormsby County).

Loxotropa villosicornis Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 286. ♂.

virginica (Ashmead). Va.

Diapria virginica Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 422, 426. ♀.

virginiensis Masner. D. C., Va.

Phaenopria virginica Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 437, 438. ♀, ♂. Preocc. by Ashmead, 1893.

Trichopria virginiensis Masner, 1967. In Krombein and Burks, U. S. Dept. Agr., Agr. Monog. 2, Sup. 2, p. 290. N. name.

zimmermanni Ashmead. "Carolina."

Trichopria Zimmermanni Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 432, 434. ♀.

Genus DIAPRIA Latreille

Diapria Latreille, 1796. Precis. Caract. Gen. Ins., p. 110. No species. — Latreille, 1802. Hist. Nat. Crust. Ins., v. 3, p. 309. Two species.

Type-species: *Ichneumon conicus* Fabricius. Desig. by Latreille, 1810.

Tropidopria Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 416.

Type-species: *Ichneumon conicus* Fabricius. Orig. desig.

Tropidobria Brethes, 1927. Ent. Mitt. 16: 334. Error.

Taxonomy: Sundholm, 1960. Opusc. Ent. 25: 215-223.

conica (Fabricius). Que. to N. C., west to Ont. and Colo.; Europe. Host: *Eristalis tenax* (L.).

Ichneumon conicus Fabricius, 1775. Systema Ent. p. 343.

Cynips crassipes Fourcroy, 1785. Entomologia Parisiensis, p. 390.

Biology: Sanders, 1911. Canad. Ent. 43: 48-50. — Maneval, 1937. Mus. Roy. d'Hist. Nat. de Belg., Bul. 13: 7-9.

simulans (Ashmead). Ont. (Ottawa).

Tropidopria simulans Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 417, 419. ♀.

torquata (Provancher). Que., Ont.

Platymischus torquatus Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 182. ♀.

Taxonomy: Masner, 1969. Nat. Canad. 96: 780.

Genus ACANTHOPRIA Ashmead

Acanthopria Ashmead, 1896. Zool. Soc. London, Proc. 1895: 804.

Type-species: *Acanthopria crassicornis* Ashmead. Orig. desig.

There are no described North American species of this essentially Neotropical genus, but the collection of the U. S. National Museum of Natural History contains specimens of an undescribed species from Texas.

Taxonomy: Ferriere, 1929. Zool. Anz. 82: 166-168.

Genus DOLIOPRIA Kieffer

Doliopria Kieffer, 1910. Ent. Rundschau 27 (8): 48. No species. — Kieffer, 1910. Ent. Rundschau 27 (9): 54. One species.

Type-species: *Doliopria flavipes* Kieffer. First included species.

The meager published records indicate that members of this genus are usually found associated with ant colonies.

Taxonomy: Ferriere, 1929. Zool. Anz., 82: 156, 163-166.

Biology: Ferriere, 1929. Zool. Anz. 82: 156, 163-166.

americana Fouts. Pa., Va.

Doliopria americana Fouts, 1926. Ent. Soc. Wash., Proc. 28: 169. ♀.

Genus AUXOPAEDUTES Brues

Auopaedeutes Brues, 1903. Amer. Ent. Soc., Trans. 29: 126.

Type-species: *Auopaedeutes sodalis* Brues. Monotypic.

Cracinopria Fouts, 1924. Ent. Soc. Wash., Proc. 26: 162.

Type-species: *Trichopria marylandica* Fouts. Orig. desig.

The species of *Auopaedeutes* are apparently myrmecophiles.

Taxonomy: Masner, 1964. Acta Soc. Ent. Cechoslov. 61: 135-136. — Wing, 1951. Roy. Ent. Soc. London, Trans. 102: 204-205.

crassicornis (Fouts). Md. (Hagerstown).

Cracinopria crassicornis Fouts, 1924. Ent. Soc. Wash., Proc. 26: 163, 164. ♀.

emarginatus (Fouts). Md. (Hagerstown).

Cracinopria emarginata Fouts, 1924. Ent. Soc. Wash., Proc. 26: 163. ♂.

lyriformis Brues. Mass. (Boston). Ecology: In nest of *Solenopsis molesta* (Say).

Auopaedeutes lyriformis Brues, 1910. Wis. Nat. Hist. Soc., Bul. 8: 82. ♀.

marylandicus (Fouts). Md. (Hagerstown).

Trichopria marylandica Fouts, 1920. Ent. Soc. Wash., Proc. 22: 62. ♀, ♂.

perplexus (Fouts). Md. (Hagerstown).

Cracinopria perplexa Fouts, 1924. Ent. Soc. Wash., Proc. 26: 163, 164. ♀.

sodalis Brues. Tex. Ecology: In nest of *Solenopsis molesta* (Say).

Auopaedeutes sodalis Brues, 1903. Amer. Ent. Soc., Trans. 29: 127. ♀.

Genus LEPIDOPRIA Kieffer

Lepidopria Kieffer, 1910. In Andre, Spec. Hym. Eur. Alg., v. 10, p. 695. No species.

— Kieffer, 1911. In Andre, Spec. Hym. Eur. Alg., v. 10, p. 869. One species.

Type-species: *Lepidopria pedestris* Kieffer. First included species.

Taxonomy: Wing, 1951. Roy. Ent. Soc. London, Trans. 102: 205.

aberrans Brues. Md. (Hagerstown). Host: *Cryptomeigenia theutis* (Wlkr.)? This species almost certainly does not belong in *Lepidopria*, but the holotype and only known specimen is in poor condition and its proper generic placement has not been determined.

Lepidoria (!) *aberrans* Brues, 1916. Psyche 23: 126. ♀.

Genus BRUESOPRIA Wing

Bruesopria Wing, 1951. Roy. Ent. Soc. London, Trans. 102: 195.

Type-species: *Bruesopria seeversi* Wing. Orig. desig.

americana (Brues). D. C., Tenn. Ecology: In nest of *Paratrechina parvula* (Mayr).

Solenopsis americana Brues, 1936. Psyche 43: 16 ♀.

seeveri Wing, N. C. (Wake County). Ecology: With *Solenopsis molesta* (Say).

Bruesopria seeveri Wing, 1951. Roy. Ent. Soc. London, Trans. 102: 195. ♀.

Genus MYRMECOPRIA Ashmead

Myrmecopria Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 407, 446.

Type-species: *Lorotropa mellea* Ashmead. Orig. desig. *mellea* (Ashmead). Fla., Ala. Ecology: In nests of *Eciton* spp. *Lorotropa mellea* Ashmead, 1887. Canad. Ent. 19: 196. ♂.

Taxonomy: Masner, 1964. Acta Soc. Ent. Cechoslov. 61: 132-133. Redescription, with first description of female.

Biology: Wing, 1951. Roy. Ent. Soc. London, Trans. 102: 207.

UNPLACED TAXA OF DIAPRIIDAE

Psilus abdominalis Say, 1836. Boston Jour. Nat. Hist. 1: 283. Ind.

Psilus upicalis Say, 1836. Boston Jour. Nat. Hist. 1: 283. Ind.

Psilus brevicornis Say, 1824. In Keating, Narr. Long's 2nd Exped., v. 2, p. 328. Ind.

Psilus colon Say, 1836. Boston Jour. Nat. Hist. 1: 284. Ind.

Psilus obtusus Say, 1828. Contrib. Maclur. Lyc. Phila. 1: 280. Ind.

Psilus terminatus Say, 1836. Boston Jour. Nat. Hist. 1: 282. Ind.

Family SCELIONIDAE

So far as known all species of this family are parasitic in the eggs of other insects or in the egg sacs of spiders.

Revision: Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 136-247 (Nearctic fauna). — Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 111-251. — Kieffer, 1912-1913. In Andre, Spec. Hym. Eur. Alg., v. 11, pp. 3-304 (pp. 3-160 pub. in 1912; pp. 161-304 in 1913). — Dodd, 1913. Roy. Soc. So. Austral., Trans. 37: 130-181 (Australian fauna). — Kieffer, 1926. Das Tierreich, Lief. 48, pp. 1-557 (World fauna).

Taxonomy: Ashmead, 1903. N. Y. Ent. Soc., Jour. 11: 86-94. — Brues, 1909 (1908). In Wytsman, Gen. Ins., fasc. 80, pp. 1-59. — Mani, 1941. Cat. Indian Ins., pt. 26, pp. 2-29. — Kozlov, 1970. Ent. Obozr. 49: 209-219 (English transl.: Ent. Rev. 49: 118-123). — Kozlov, 1971. Soc. Ent. Unionis Soviet., Horae 54: 33-54.

Biology: Kieffer, 1926. Das Tierreich, Lief. 48, pp. 6-8. — Clausen, 1940. Entomophagous Insects, pp. 349-357.

SUBFAMILY SCELIONINAE

Revision: Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 167-247. — Kieffer, 1926. Das Tierreich, Lief. 48, pp. 264-557.

Taxonomy: Mani, 1941. Cat. Indian Ins., pt. 26, pp. 17-29. — Kozlov, 1970. Ent. Obozr. 49: 209-214 (English transl.: Ent. Rev. 49: 118-122). — Hellen, 1971. Fauna Fennica 23: 1-25.

Genus SPARASION Latreille

Sparasion Latreille, 1802. Hist. Nat. Crust. Ins., v. 3, p. 316.

Type-species: *Sparasion cephalotes* Latreille. Monotypic.

Oxyurus Lamarck, 1817. Hist. Nat. Anim. sans Vert., v. 4, p. 128. Preocc. by Rafinesque, 1810.

Type-species: *Sparasion frontalis* Latreille. Desig. by Muesebeck and Walkley, 1951.

Bebelus Gistel, 1848. Naturgesch. Thierr. f. hoh. Schul., p. x. N. name for *Oxyurus* Lamarck.

Sparasion Brues, 1909 (1908). In Wytsman, Gen. Ins., fasc. 80, pp. 41, 56. Error.

The only species for which reliable records of host association are available is parasitic in the eggs of the Mormon cricket, *Anabrus simplex* Hald. The North American species have not been critically studied; most material in the larger collections is unidentified. Apparently there are numerous undescribed species.

Revision: Kieffer, 1926. Das Tierreich, Lief. 48, pp. 282-299.

bakeri Kieffer. Colo.

Sparasion Bakeri Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 26, 27. ♂.

femorale Kieffer. Nev. (Ormsby County).

Sparasion femorale Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 26. ♂.

graenicheri Brues. Wis. (Milwaukee).

Sparasion (!) *graenicheri* Brues, 1906. Wis. Nat. Hist. Soc., Bul. 4: 149. ♀.

gregarium Brues. Md., Va.

Sparasion (!) *gregarium* Brues, 1907. Wis. Nat. Hist. Soc., Bul. 5: 154. ♀.

humile Kieffer. Pa. (Jeannette).

Sparasion humile Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 26, 27. ♂.

nigrum Ashmead. Pa., Md., Va.

Sparasion nigrum Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 238, 239. ♀, ♂.

pacificum Ashmead. Wash., Calif.

Sparasion pacificum Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 238, 239. ♂.

pilosum Ashmead. Nev., Wash., Mont., Wyo., Utah. Host: *Anabrus simplex* Hald.

Sparasion pilosum Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 238. ♀, ♂.

Biology: Cowan, 1929. U. S. Dept. Agr., Tech. Bul. 161: 22-23. —Mills, 1942. Mont. Agr. Expt. Sta., Bul. 408: 11-13.

Morphology: Snodgrass, 1941. Smithsn. Misc. Collect. 99, pp. 38-40.

Genus SCELIMORPHA Ashmead

Sceliomorpha Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 210, 211, 239.

Type-species: *Sceliomorpha longicornis* Ashmead. Orig. desig.

There are no described Nearctic species of *Sceliomorpha*, but the Cornell University collection contains an unnamed specimen from Florida, as communicated by L. Masner in correspondence.

Genus SCELIO Latreille

Scelio Latreille, 1805. Hist. Nat. Crust. Ins., v. 13, p. 226.

Type-species: *Scelio rugulosus* Latreille. Desig. by Latreille, 1810.

Scelionus Rafinesque, 1815. Analyse, p. 125. Emend.

Serlion Say, 1828. Contr. Maclur. Lyc. Philadelphia 1: 80. Error.

Scelion Blanchard, 1849. In Cuvier, Regne Animal, Ins., v. 2, p. 157; atlas pl. 116, fig. 4. Emend.

Aleria Marshall, 1874. Ent. Monthly Mag. 10: 208.

Type-species: *Aleria flavibarbis* Marshall. Monotypic.

Caloptenobia Riley, 1878 (1877). U. S. Ent. Comn., Ann. Rpt. 1, p. 306.

Type-species: *Caloptenobia ovivora* Riley. Monotypic.

Discelio Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 116, 124.

Type-species: *Scelio thoracicus* Ashmead. Desig. by Kieffer, 1926.

Dichacantha Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 118, 147.

Type-species: *Trimorus luteus* Cameron. Orig. desig.

Enneascelio Kieffer, 1910. Soc. Ent. de France, Bul. 1910: 293.

Type-species: *Enneascelio exaratus* Kieffer. Orig. desig.

Apparently all species of *Scelio* are parasitic in the eggs of grasshoppers.

Revision: Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 241-247 (Nearctic species). —Kieffer, 1926. Das Tierreich, Lief. 48, pp. 308-345 (World species). —Dodd, 1927. Roy. Soc. Queensland, Proc. 38: 127-175 (Australian fauna). —Nixon, 1958. Roy. Ent. Soc. London, Trans. 111: 303-313 (African species). —Muesebeck, 1972. Smithsn. Contrib. Zool. 102: 1-33 (Nearctic species).

Biology: Pemberton, 1933. Hawaii. Ent. Soc., Proc. 8: 253-264. —Noble, 1935. Agr. Gaz. N. S. Wales 46: 513-518. —Noble, 1938. Agr. Gaz. N. S. Wales 49: 143-147. —Murai, 1962. Yamagata Agr. and For. Soc., Jour. 20: 21-29. —Greathead, 1963. Roy. Ent. Soc. London, Trans. 114: 488.

- caloptenorum** Riley. Type missing and species too briefly characterized for identification.
Scelio caloptenorum Riley 1885. Ent. Soc. Wash., Proc. 1: 22.
- conformis** Muesebeck. Md.
Scelio conformis Muesebeck, 1972. Smithsn. Contrib. Zool. 102: 4, 6. ♀.
- ernstii** Riley. Fla., Ala., S. C., Tex.; Mexico, Guatemala, Brit. Honduras, Costa Rica, Panama, Trinidad, Venezuela, Peru, Brazil. Host: *Schistocerca americana* (Drury), *S. paranensis* (Burm.).
Scelio ernstii Riley, 1885. Ent. Soc. Wash., Proc. 1: 22. ♀, ♂.
Scelio fuscipennis Ashmead, 1887. Ent. Amer. 3: 119. ♀.
Scelio venezuelensis Marshall, 1892. In Buysson and Marshall, Soc. Ent. de France, Ann. 61: 74. ♀.
- floridanus** Ashmead. Fla., Calif.; Mexico. Host: *Melanoplus differentialis* (Thomas), *M. sanguinipes* (F.).
Scelio floridanus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 242, 247. ♀.
- hyalinipennis** Ashmead. Fla., S. C., Tex.
Scelio hyalinipennis Ashmead, 1887. Ent. Amer. 3: 119. ♀.
- incertus** Muesebeck. Tex.
Scelio incertus Muesebeck, 1972. Smithsn. Contrib. Zool. 102: 5, 10. ♀.
- insolitus** Muesebeck. N. Y. (Paul Smiths).
Scelio insolitus Muesebeck, 1972. Smithsn. Contrib. Zool. 102: 4, 10. ♀.
- oedipodae** Ashmead. Ont., Va., Fla., Tex., Colo., Mont. Host: Originally cited as *Oedipoda* sp.
Scelio oedipodae Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 242, 245. ♀.
Scelio rufiventris Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 242, 245. ♀.
- opacus** (Provancher). Throughout Austral Zone. Host: *Melanoplus sanguinipes* (F.), *M. femurrubrum* (DeGeer), *M. devastator* Scud., *M. differentialis* (Thomas), *M. bivittatus* (Say), *Camnula pellucida* (Scud.), *Ageneotettix deorum* (Scud.).
Acerota opaca Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 184. ♂.
Scelio calopteni Riley, 1893. In Ashmead, U. S. Natl. Mus., Bul. 45: 242, 246. ♀.
Scelio Luggeri Riley, 1893. In Ashmead, U. S. Natl. Mus., Bul. 45: 242, 246. ♀.
Scelio ashmeadi Viereck, 1903. Amer. Ent. Soc., Trans. 29: 74. ♂.
Scelio striatigena Kieffer, 1904. Arkiv for Zool. 1: 530. ♂.
Scelio albipennis Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 270. ♂.
Scelio melleipes Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 29, 30. ♀.
- Biology: Pickford, 1964. Canad. Ent. 96: 1167-1172.
- Morphology: Snodgrass, 1941. Smithsn. Misc. Collect. 99: 38-39, pl. 10, figs. Q and R.
- ovivorus** (Riley). Mass., Conn., Pa., D. C., Va., N. C., Fla., Ill., Iowa, Ark., Tex. Host: *Dissosteira carolina* (L.).
Caloptenobia ovivora Riley, 1878 (1877). U. S. Ent. Comn., Ann. Rpt. 1, p. 306. ♀.
Scelio pallidicornis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 242, 244. ♂.
- pallidipes** Ashmead. S. C., Fla.
Scelio pallidipes Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 242, 244. ♂.
- pumilus** Muesebeck. Tex. (Brownsville).
Scelio pumilus Muesebeck, 1972. Smithsn. Contrib. Zool. 102: 4, 15. ♀.
- rufulus** Muesebeck. Kans., Nebr., Mont., Idaho, Ariz.
Scelio rufulus Muesebeck, 1972. Smithsn. Contrib. Zool. 102: 4, 16. ♀, ♂.
- semirufus** Muesebeck. S. Dak. or Nebr. Host: *Mermiria maculipennis* Bruner.
Scelio semirufus Muesebeck, 1972. Smithsn. Contrib. Zool. 102: 4, 17. ♀.
- singularis** Muesebeck. Mich., Iowa.
Scelio singularis Muesebeck, 1972. Smithsn. Contrib. Zool. 102: 4, 17. ♀.
- solus** Muesebeck. Fla. (Mount Pleasant).
Scelio solus Muesebeck, 1972. Smithsn. Contrib. Zool. 102: 4, 18. ♀.
- squamosus** Muesebeck. Fla. (Gainesville).
Scelio squamosus Muesebeck, 1972. Smithsn. Contrib. Zool. 102: 4, 19. ♀.

- striativentris** Kieffer. N. S., Que., Ont., Man., N. H., Vt., Mass., N. Y., Md., Va., N. C. (4000 ft.), Mich., Wis., Kans., N. Dak. Host: *Melanoplus bivittatus* (Say).
Scelio striativentris Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 29, 33. ♂.
venatus Brues. Ariz., Calif.
Scelio venata Brues, 1906. In Viereck, Amer. Ent. Soc., Trans. 32: 228. ♀.

Genus SYNODITELLA Muesebeck

- Synoditella* Muesebeck, 1972. Smithsn. Contrib. Zool. 102: 3, 21.
 Type-species: *Scelioromorpha bisulca* Ashmead. Orig. desig.

Females of species of this genus are phoretic.

- Biology: Lanham and Evans, 1958. Pan-Pacific Ent. 34: 213-214. — Lanham and Evans, 1960. Brooklyn Ent. Soc., Bul. 55: 84-87.

- bisulca** (Ashmead). Fla. Ecology: On females of *Radinotatum carinatum* (Walker).
Scelioromorpha? bisulca Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 240. ♀.
bisulcata (Kieffer). Apparently occurs throughout Upper and Lower Austral Zones. Ecology: Collected from bodies of females of *melanoplus confusus* *M. differentialis* (Thomas), *M. femurrubrum* (DeGeer), *M. keeleri luridus* (Dodge), *Dichromorpha viridis* (Scud.), *Chortophaga viridifasciata* (DeGeer). Host: *Melanoplus* sp., *M. differentialis* (Thomas), *M. sanguinipes* (F.).
Scelio bisulcatus Kieffer, 1904. Arkiv for Zool. 1: 531. ♀.
Scelio monticola Brues, 1906. In Viereck, Amer. Ent. Soc., Trans. 32: 184. ♀.
Scelio striaticollis Brues, 1906. In Viereck, Amer. Ent. Soc., Trans. 32: 222. ♀.

Genus GOVINDA Nixon

- Gorinda* Nixon, 1933. Ann. and Mag. Nat. Hist. (10) 12: 465.
 Type-species: *Gorinda mila* Nixon. Orig. desig.

Although there are no described North American species of this genus the U. S. National Museum of Natural History contains unnamed specimens, apparently representing several different species, from Texas, Oklahoma, Arizona, and California.

Genus BARYCONUS Foerster

- Baryconus* Foerster, 1856. Hym. Stud., v. 2, pp. 101, 104. No species. — Ashmead, 1887. Ent. Amer. 3: 118. One species.
 Type-species: *Baryconus floridanus* Ashmead. First included species.
Hoploteleia Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 210, 211, 227.
 Type-species: *Baryconus floridanus* Ashmead. Orig. desig.
Rhacoteleia Cameron, 1905. Spolia Zeylanica 3: 72.
 Type-species: *Rhacoteleia pilosa* Cameron. Monotypic.
Apegusoneura Cameron, 1912. Soc. Ent. 27: 69.
 Type-species: *Apegusoneura striolatus* Cameron. Desig. by Muesebeck and Walkley, 1951.

In the unclassified material of *Baryconus* in the collection of the U. S. National Museum of Natural History there are several specimens labeled as having been reared from eggs of katydids (Tettigoniidae).

- floridanus** Ashmead. Va., Fla., Miss., La.
Baryconus floridanus Ashmead, 1887. Ent. Amer. 3: 118. ♂.
noveboracensis (Brues). N. Y. (New York City).
Hoploteleia noveboracensis Brues, 1908. Wis. Nat. Hist. Soc., Bul. 6: 49. ♂.

Genus MACROTELEIA Westwood

- Macroteleia* Westwood, 1835. Zool. Soc. London, Proc. 3: 70.
 Type-species: *Macroteleia cleonymoides* Westwood. Monotypic.
Romilius Walker, 1842. Ann. and Mag. Nat. Hist. 10: 274.
 Type-species: *Romilius zotale* Walker. Desig. by Kieffer, 1910.

Macroteleia Agassiz, 1846. Nomencl. Zool., p. 221. Emend.

Baoneura Foerster, 1856. Hym. Stud., v. 2, pp. 100, 102. No species. — Ashmead, 1887. Ent. Amer. 3: 99. Two species.

Type-species: *Baoneura floridana* Ashmead. Desig. by Muesebeck and Walkley, 1956.

Baoneura Ashmead, 1887. Ent. Amer. 3: 99. Error.

Prosaepus Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 121, 147.

Type-species: *Anteris elongata* Ashmead. Orig. desig.

Stictoteleia Kieffer, 1926. Das Tierreich, Lief. 48, pp. xxix, 272, 546.

Type-species: *Macroteleia virginensis* Ashmead. Orig. desig.

The very meager records of host association indicate parasitization in the eggs of Tettigoniidae.

Revision: Kieffer, 1926. Das Tierreich, Lief. 48, pp. 520-544.

Taxonomy: Nixon, 1931. Eos 7: 367-379. — Dodd, 1933. Roy. Soc. Queensland, Proc. 44: 75-103.

— Masner, 1964. Acta Soc. Ent. Cechoslov. 61: 137-138. — Masner, 1965. Brit. Mus. (Nat. Hist.), Bul., Ent. Sup. 1, p. 81.

elongata (Ashmead). Md., Va., Fla., Ala., Okla., Tex.

Anteris elongata Ashmead, 1887. Ent. Amer. 3: 118. ♂.

famelica (Say). Ind.

Sparasion famelicus Say. 1836. Boston Jour. Nat. Hist. 1: 276.

Taxonomy: Muesebeck, 1972. Smithsn. Contrib. Zool. 102, p. 13.

floridana (Ashmead). Md., Fla.

Baoneura floridana Ashmead, 1887. Ent. Amer. 3: 99. ♀, ♂.

goldsmithi Girault. Ill.

Macroteleia floridana var. *goldsmithi* Girault, 1920. U. S. Natl. Mus., Proc. 58: 180. ♀.

macrogaster Ashmead. Pa., Ga., Tex.

Macroteleia macrogaster Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 217. ♂, (♀ misdet.).

punctata Kieffer. Tex.

Macroteleia punctata Kieffer, 1904. Arkiv for Zool. 1: 532. ♂.

rugosa (Provancher). Canada.

Paphagus rugosus Provancher, 1881. Nat. Canad. 12: 293. ♂.

Taxonomy: Masner, 1969. Nat. Canad. 96: 779-780.

surfacei Brues. N. J. (Chester). Host: Sp. of Tettigoniidae (eggs).

Macroteleia surfacei Brues, 1907. Wis. Nat. Hist. Soc., Bul. 5: 153. ♀.

virginiensis Ashmead. Va. Host: *Orchelimum glaberrimum* (Burm.).

Macroteleia virginensis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 217, 218. ♀.

Genus CALOTELEA Westwood

Calotelea Westwood, 1837. In Hope, Ent. Soc. London, Trans. 2: 55.

Type-species: *Calotelea aurantia* Hope. Monotypic.

Callitelea Agassiz, 1846. Nomencl. Zool., pp. 60, 61. Emend.

Calotelea Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 209, 210, 212. Emend.

Calliscelio Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 209, 218.

Type-species: *Calliscelio laticinctus* Ashmead. Orig. desig.

Ceratoteleia Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 121.

Type-species: *Caloteleia grenadeensis* Ashmead. Desig. by Kieffer, 1926.

Prosanteris Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 121, 136.

Type-species: *Anteris nigriceps* Ashmead. Desig. by Kieffer, 1910.

Neuroteleia Kieffer, 1910. Soc. Ent. de France, Bul. 1910: 293.

Type-species: *Neuroteleia rufa* Kieffer. Orig. desig.

Lamproteleia Kieffer, 1910. Soc. Ent. de France, Bul. 1910: 293.

Type-species: *Lamproteleia fasciatipennis* Kieffer. Orig. desig.

Caenoteleia Kieffer, 1926. Das Tierreich, Lief. 48, pp. xxix, 266, 550. N. syn. (Placed in synonymy here on authority of L. Masner).

Type-species: *Caloteleia elegans* Perkins. Monotypic.

Taxonomy: Masner, 1965. Brit. Mus. (Nat. Hist.), Bul., Ent., Sup. 1, p. 69.

erythrothorax (Kieffer), n. comb. Pa. (Jeannette).

Macroteleia erythrothorax Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 22. ♀.

marlattii Ashmead. Throughout Austral Zone. Ecology: Taken in mixed colony of *Myrmica* sp. and *Leptothorax* sp. Host: *Gryllus* sp. (eggs).

Caloteleia Marlattii Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 212, 214. ♀, ♂.

Macroteleia ruskini Girault, 1920. U. S. Natl. Mus., Proc. 58: 179. ♀.

Biology: Severin, 1935. S. Dak. Agr. Expt. Sta., Bul. 295: 44.

nigriceps (Ashmead). Va., Fla., Ark.

Anteris nigriceps Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 225, 226. ♀, ♂.

rubriclava (Ashmead). Fla. (Jacksonville).

Acolus rubriclavus Ashmead, 1887. Ent. Amer. 3: 99. ♀.

virginiensis (Ashmead). Va.

Anteris virginiensis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 225. ♂.

Genus CREMASTOBAEUS Ashmead

Cremastobaeus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 210, 211, 228.

Type-species: *Cremastobaeus bicolor* Ashmead. Orig. desig.

Although no Nearctic species of this genus have been described, L. Masner reports that the Canadian National Collection contains unnamed specimens from Georgia, Florida, Missouri and Texas. There is also an unidentified specimen of *Cremastobaeus* from Alabama in the U. S. National Museum of Natural History.

Genus PROBARYCONUS Kieffer

Probaryconus Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 118, 165, 168. Proposed as subg. of *Baryconus*.

Type-species: *Baryconus* (*Probaryconus*) *spinosus* Kieffer. Monotypic.

Amblyconus Kieffer, 1913. In Andre, spec. Hym. Eur. Alg., v. 11, p. 221. No species.

—Kieffer, 1914. In Andre, Spec. Hym. Eur. Alg., v. 11, p. 325. One species.

Type-species: *Amblyconus quadrideus* Kieffer. First included species.

Taxonomy: Masner, 1965. Brit. Mus. (Nat. Hist.), Bul., Ent., Sup. 1, p. 90.

cinctiventris (Ashmead). Fla. (Jacksonville).

Baeoneura cinctiventris Ashmead, 1887. Ent. Amer. 3: 99. ♀.

heidemannii (Ashmead). Va., D. C., Ga., Tex.

Caloteleia Heidemannii Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 212, 213. ♀.

striatus (Ashmead). D. C.

Caloteleia striata Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 212, 213. ♀.

Genus OETHECOCTONUS Ashmead

Cacus Riley, 1893. In Ashmead, U. S. Natl. Mus., Bul. 45: 209, 210, 211, 223. Preocc. by Gistel, 1848.

Type-species: *Cacus oecanthi* Riley. Desig. by Ashmead, 1893.

Oethecoctonus Ashmead, 1900. Canad. Ent. 32: 368. N. name.

Cellus Ashmead, 1903. N. Y. Ent. Soc., Jour. 11: 92. Unnecessarily proposed as n. name for *Cacus* Riley.

Taxonomy: Masner, 1964. Acta Soc. Ent. Cechoslov. 61: 139-140.

oecanthi (Riley). N. Y., Pa., Va., Mich., Ind., La. Host: *Oecanthus fultoni* Walker, *O. quadripunctatus* Beut.

Cacus oecanthi Riley, 1893. In Ashmead, U. S. Natl. Mus., Bul. 45: 224. ♀, ♂.

Genus LEPTOTELEIA Kieffer

Leptoteleia Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 120, 163.

Type-species: *Baryconus oecanthi* Riley. Monotypic.

Taxonomy: Kieffer, 1926. Das Tierreich, Lief. 48, pp. 477-479. — Szabo, 1962. Folia Ent. Hungarica (n. s.) 15: 222. — Masner, 1964. Acta Soc. Ent. Cechoslov. 61: 138-139.

oecanthi (Riley). N. Y., Pa., Va., Nebr. Host: *Oecanthus fultoni* Walker, *O. quadripunctatus* Beut.

Baryconus oecanthi Riley, 1893. In Ashmead, U. S. Natl. Mus., Bul. 45: 215. ♀, ♂.

Biology: Udine and Pinckney, 1940. Pa. Acad. Sci., Proc. 14: 81-84.

Genus HOLOTELEIA Kieffer

Holoteleia Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 120, 169.

Type-species: *Baryconus (Holoteleia) bicolor* Kieffer. Orig. desig. This name, preocc. by *Baryconus bicolor* Harrington, 1899, has been replaced by *Holoteleia nigriceps* Kieffer, 1926.

The following species are placed in *Holoteleia* on the authority of L. Masner, who has examined the holotypes.

bicolor (Harrington), n. comb. Ont., Alta.

Baryconus bicolor Harrington, 1899. Canad. Ent. 31: 79. ♀, ♂.

cincta (Harrington), n. comb. Ont., Sask., Wis.

Baryconus cinctus Harrington, 1899. Canad. Ent. 31: 79. ♀.

parvipennis (Melander and Brues), n. comb. Mass., Ohio.

Caloteleia parvipennis Melander and Brues, 1903. Biol. Bul. 5: 22. ♀.

Genus DUTA Nixon

Duta Nixon 1933. Ann. and Mag. Nat. Hist. (10) 12: 306.

Type-species: *Holoteleia tenuicornis* Dodd. Orig. desig.

Chaetantheris Priesner, 1951. Inst. Fouad I du Desert, Bul. 1: 136. N. syn. (teste L. Masner in correspondence).

Type-species: *Chaetantheris serraticeps* Priesner. Orig. desig.

No species of this genus have been described from North America but the U. S. National Museum of Natural History has isolated specimens of *Duta*, apparently representing several different species, from Maryland, District of Columbia, Virginia, Tennessee, Louisiana and Arizona.

Genus OPISTHACANTHA Ashmead

Opisthacantha Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 209, 211, 221.

Type-species: *Opisthacantha mellipes* Ashmead. Orig. desig.

Protrimorus Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 146.

Type-species: *Trimorus americanus* Ashmead. Monotypic.

Taxonomy: Masner, 1964. Acta Soc. Ent. Cechoslov. 61: 140-141.

americanus (Ashmead). Va. (Arlington).

Trimorus americanus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 139. ♂.

mellipes Ashmead. D. C.

Opisthacantha mellipes Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 221. ♀, ♂.

Genus PSILANTERIS Kieffer

Psilantheris Kieffer, 1916. Broteria, Rev. Luso-Brazil., Zool. ser., 14: 177.

Type-species: *Anteris bicolor* Kieffer. Orig. desig.

Taxonomy: Szabo, 1958. Mus. Natl. Hungarici, Ann. Hist.-Nat. 50: 271. — Kozlov, 1971. Soc. Ent. Unionis Soviet., Horae 54: 41.

reticulatus (Fouts). D. C.

Anteris reticulatus Fouts, 1926. Ent. Soc. Wash., Proc. 28: 178. ♀, ♂.

Genus PARIDRIS Kieffer

Paridris Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 122.

Type-species: *Idris laeviceps* Ashmead. Desig. by Kieffer, 1926.

Paranteris Kieffer, 1910. Soc. Ent. de France, Bul. 1910: 292.

Type-species: *Paranteris nigriclava* Kieffer. Orig. desig.

Taxonomy: Kieffer, 1912. Linn. Soc. London, Trans. (ser. 2), Zool. 15: 65. — Masner, 1965. Brit. Mus. (Nat. Hist.), Bul., Ent., Sup. 1, p. 88.

brevipennis Fouts, Ill., S. Dak., La., Tex., Calif. Host: *Gryllus* spp. (eggs).

Paridris brevipennis Fouts, 1920. Ent. Soc. Wash., Proc. 22: 66. ♀, ♂.

Biology: Severin, 1935. S. Dak. Agr. Expt. Sta., Bul. 295: 44.

laeviceps (Ashmead). Va. (Arlington).

Idris laeviceps Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 235. ♂.

Idris leviceps Dalla Torre, 1898. Cat. Hym., v. 5, p. 497. Emend.

nigricornis (Brues). Conn. (Colebrook). Ecology: From mixed colony of *Myrmica* sp. and *Leptothorax* sp.

Idris nigricornis Brues, 1903. Amer. Ent. Soc., Trans. 29: 125. ♂.

pallipes (Ashmead). Fla. (Jacksonville).

Thoron pallipes Ashmead, 1887. Ent. Amer. 3: 99. ♀.

Genus PSEUDANTERIS Fouts

Pseudanteris Fouts, 1927. Ent. Soc. Wash., Proc. 29: 177.

Type-species: *Pseudanteris insignis* Fouts. Orig. desig.

Taxonomy: Masner, 1964. Acta Soc. Ent. Cechoslov. 61: 141.

insignis Fouts. Ont., Md.

Pseudanteris insignis Fouts, 1927. Ent. Soc. Wash., Proc. 29: 177. ♀.

Genus GRYON Haliday

Gryon Haliday, 1833. Ent. Mag. 1: 271.

Type-species: *Gryon misellus* Haliday. Monotypic.

Acolus Foerster, 1856. Hym. Stud., v. 2, pp. 100, 102. No species. — Thomson, 1859 (1858).

Ofvers. Kongl. Vetensk.-Akad., Forh. 15: 422. Two species.

Type-species: *Acolus opacus* Thomson. Desig. by Ashmead, 1903.

Hadronotus Foerster, 1856. Hym. Stud., v. 2, pp. 101, 105. No species. — Foerster, 1861.

Programm Realschule Aachen, p. xli. One species.

Type-species: *Hadronotus exculptus* Foerster. First included species.

Plastogryon Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 119, 141.

Type-species: *Plastogryon foersteri* Kieffer. Desig. by Brues, 1909 (1908).

Psilacolus Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 179, 180.

Type-species: *Acolus xanthogaster* Ashmead. Desig. by Kieffer, 1926.

Holacolus Kieffer, 1912. In Andre Spec. Hym. Eur. Alg., v. 11, pp. 89, 94, 106.

Type-species: *Acolus opacus* Thomson. Desig. by Muesebeck and Walkley, 1956.

Telenomoides Dodd, 1913. Roy. Soc. So. Austral. Trans. 37: 158, 168.

Type-species: *Telenomoides flavipes* Dodd. Orig. desig.

Hadronotellus Kieffer, 1917. Ent. Meddel. (2) 11: 341.

Type-species: *Hadronotellus pedester* Kieffer. Orig. desig.

Hadrophanurus Kieffer, 1926. Das Tierreich, Lief. 48, pp. xvi, 15, 130.

Type-species: *Telenomus ? pennsylvanicus* Ashmead. Orig. desig.

Heterogryon Kieffer, 1926. Das Tierreich, Lief. 48, pp. xxvi, 271, 446, 448.

Type-species: *Plastogryon sagax* Kieffer. Desig. by Muesebeck and Walkley, 1956.

Holalcus Risbec, 1950. Trav. Lab. d'Ent. du Sect. Soudanais de Recherches Agron., p. 577.

Error for *Holacolus* Kieffer.

The species of *Gryon* are parasites in the eggs of Hemiptera, especially those of the family Coreidae.

- Revision: Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 229-234 (North American species).
 —Kieffer, 1926. Das Tierreich, Lief. 48, pp. 446-473 (World fauna). —Nixon, 1934. Ann. and Mag. Nat. Hist. (10) 14: 290-313 (African species).
- Taxonomy: Brues, 1910. Wis. Nat. Hist. Soc., Bul. 8: 47. —Dodd, 1914. Arch. f. Naturgesch. 80 (A): 18-21. —Masner, 1961. Acta Soc. Ent. Cechoslov. 58: 158-163.
- ajax** (Girault). N. C., Tenn., Ala., La., Ohio, Ill., Mo., Ariz. Host: *Anasa tristis* (DeG.).
Hadronotus ajax Girault, 1920. U. S. Natl. Mus., Proc. 58: 181. ♀, ♂.
- Biology: Schell, 1943. Ent. Soc. Amer., Ann. 36: 625-635.
- anasae** (Ashmead). Fla. Host: *Anasa tristis* (DeG.), *Euthochtha galeator* (F.).
Telenomus anasae Ashmead, 1887. U. S. Dept. Agr., Div. Ent., Bul. 14: 23. ♀, ♂.
- atriscapus** (Gahan). Tex. Host: *Narnia pallidicornis* Stal, *N. femorata* Stal, *Leptoglossus phyllopus* (L.).
Hadronotus atriscapus Gahan, 1927. U. S. Natl. Mus., Proc. 71 (4): 37. ♀, ♂.
- brevipennis** (Harrington). Que. (Hull).
Hadronotus brevipennis Harrington, 1899. Roy. Soc. Canada, Trans. (2) 5: 188. ♀, ♂.
- carinatifrons** (Ashmead). Fla., Tex.; West Indies. Host: *Anasa tristis* (DeG.), *Leptoglossus gonagra* (F.).
Hadronotus carinatifrons Ashmead, 1894. Linn. Soc. London, Jour., Zool. 25: 229, 230. ♀.
- coracinus** (Fouts). Tex. (Brownwood).
Synteleia coracina Fouts, 1927. Ent. Soc. Wash., Proc. 29: 178. ♀.
- floridanus** (Ashmead). Fla. Host: *Acanthocephala femorata* (F.).
Hadronotus floridanus Ashmead, 1887. Ent. Amer. 3: 118. ♀.
- insularis** (Ashmead). N. C., Fla., La., Mo.; St. Vincent, Mexico. The U. S. records communicated by L. Masner.
Hadronotus insularis Ashmead, 1894. Linn. Soc. London, Jour., Zool. 25: 230. ♀, ♂.
- largi** (Ashmead). Calif. (Los Angeles). Host: *Largus succinctus* (L.).
Hadronotus largi Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 230, 231. ♀, ♂.
- leptocorisae** (Howard). Fla. (Crescent City). Host: *Stenocoris tipuloides* (DeGeer).
Hadronotus leptocorisae Howard, 1885. In Hubbard, Insects affecting the Orange, p. 215. ♀, ♂.
- myrmecophilus** (Ashmead). Va., La. Host: *Alydus eurinus* (Say).
Hadronotus myrmecophilus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 230, 232. ♂.
- parkeri** (Fouts). Md., Mich., Mo. Host: *Lygaeus kalmii* Stal, *Oncopeltus fasciatus* (Dallas).
Hadronotus parkeri Fouts, 1920. Ent. Soc. Wash., Proc. 22: 64. ♀, ♂.
- Biology: Kenaga, 1944. Ent. News 55: 173-174.
- pennsylvanicus** (Ashmead). Pa.
Telenomus? pennsylvanicus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 144, 160. ♀.
- robustus** (Brues). Tex. (Austin).
Hadronotus robustus Brues, 1907. Wis. Nat. Hist. Soc., Bul. 5: 156. ♀.
- rugiceps** (Ashmead). D. C.
Hadronotus rugiceps Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 231, 233. ♀.
- rugosus** (Howard). Fla. (Rockledge). Host: *Dysdercus suturellus* (H.-S.), *Euthochtha galeator* (F.).
Hadronotus rugosus Howard, 1889. U. S. Dept. Agr., Insect Life 1: 242. ♀.
- xanthogaster** (Ashmead). D. C.
Acolus xanthogaster Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 174. ♀.

Genus MIROTELENOMUS Dodd

Mirotelenomus Dodd, 1913. Roy. Soc. So. Austral., Trans. 37: 158, 173.

Type-species: *Mirotelenomus abnormis* Dodd. Monotypic.

Microtelenomus Kieffer, 1926. Das Tierreich, Lief. 48, pp. 15, 19. Error for *Mirotelenomus* Dodd.

There are no described North American species of this genus but a specimen of an undescribed species, from California, has been referred to *Mirotelenomus* by Masner.

Genus EMBIDOBIA Ashmead

Embidobia Ashmead, 1895. Trinidad Field Naturalists' Club, Jour. 2: 264.

Type-species: *Embidobia urichi* Ashmead. Monotypic.

Efflatounina Priesner, 1951. Inst. Fouad I du Desert, Bul. 1: 126.

Type-species: *Efflatounina gyrontoides* Priesner. Orig. desig.

The species of this genus are parasitic in the eggs of Embioptera. No North American species of *Embidobia* has been described but the U. S. National Museum of Natural History has an undescribed species from Texas which has been referred to this genus by Masner.

Taxonomy: Dodd, 1939. Linn. Soc. N. S. Wales, Proc. 64: 339-344. — Masner, 1964. Acta Soc. Ent. Cechoslov. 61: 142-144. — Masner, 1968. Natal Mus., Ann. 20: 197. — Kozlov, 1970. Ent. Obozr. 49: 213 (English transl.; Ent. Rev. 49: 119-120). — Masner and Dessart, 1972. Canad. Ent. 104: 505-506.

Genus TIPHODYTES Bradley

Limnodytes Marchal, 1900. Soc. Ent. de France, Ann. 69: 171, 174. Preocc. by Dumeril and Bibron, 1841.

Type-species: *Limnodytes gerriphagus* Marchal. Orig. desig.

Tiphodytes Bradley, 1902. Canad. Ent. 34: 179. N. name.

Hungaroscelio Szabo, 1957. Folia Ent. Hungarica (n. s.) 10: 289.

Type-species: *Hungaroscelio kaszabi* Szabo. Orig. desig.

Members of this genus are parasitic in the eggs of certain aquatic insects.

Taxonomy: Masner and Kozlov, 1965. Acta Ent. Bohemoslov. 62: 292.

Biology: Marchal, 1900. Soc. Ent. de France, Ann. 69: 171-173. — Matheson and Crosby, 1912. Ent. Soc. Amer., Ann. 5: 67-68. — Henriksen, 1918. Ent. Meddel. 12: 142-143. — Martin, 1928. Ent. Amer. 8 (n. s.): 131-143.

gerriphagus (Marchal). Ont., Maine, N. Y., Mich., Calif.; Europe. Host: *Gerris* sp., *Trepobates* sp.

Limnodytes gerriphagus Marchal, 1900. Soc. Ent. de France, Ann. 69: 172, 175. ♀, ♂.

Hungaroscelio kaszabi Szabo, 1957. Folia Ent. Hungarica (n. s.) 10: 290. ♂.

Genus THORON Haliday

Thoron Haliday, 1833. Ent. Mag. 1: 271.

Type-species: *Thoron metallicus* Haliday. Monotypic.

metallicus Haliday. Que., Ont., Mass.; Europe. Host: *Nepa cinerea* L.

Thoron metallicus Haliday, 1833. Ent. Mag. 1: 272.

Biology: Jansson, 1939. Entomologbladet 3: 13.

Genus IDRIS Foerster

Idris Foerster, 1856. Hym. Stud., v. 2, pp. 102, 105.

Type-species: *Idris flavicornis* Foerster. Monotypic.

Acoloides Howard, 1890. U. S. Dept. Agr., Insect Life 2: 269.

Type-species: *Acoloides saitidis* Howard. Monotypic.

Megacolus Priesner, 1951. Inst. Fouad I du Desert, Bul. 1: 121. Preocc. by Cameron, 1903.

Type-species: *Megacolus desertorum* Priesner. Monotypic.

Philoplanes Muesebeck and Walkley, 1956. U. S. Natl. Mus., Proc. 105: 384. N. name for *Megacolus* Priesner.

The species of *Idris* are parasitic in the egg sacs of spiders.

Taxonomy: Masner, 1961. Acta Soc. Ent. Cechoslov. 58: 163-166. — Szabo, 1965. Mus. Natl. Hungarici, Ann. Hist.-Nat. 57: 367-373.

bicolor (Ashmead). Ont. (Ottawa).

Acoloides bicolor Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 170, 172. ♀.

emertonii (Howard). Mass., Conn.

Acoloides emertonii Howard, 1891. U. S. Dept. Agr., Insect Life 4: 202. ♀.

floridensis (Fouts). Fla. (Orlando).

Acoloides floridensis Fouts, 1927. Ent. Soc. Wash., Proc. 29: 179. ♀.

howardii (Ashmead). D. C., Ind., Mich.

Acoloides howardii Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 170, 171. ♀.

melleus (Ashmead). Va. (Arlington).

Acoloides melleus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 170, 172. ♀.

saitidis (Howard). Ont., Pa., Ind., Nebr., Ariz. Host: *Habrocestum pulex* (Hentz), *Phidippus opifex* (McCook).

Acoloides suitidis Howard, 1890. U. S. Dept. Agr., Insect Life 2: 270. ♀, ♂.

Taxonomy: Masner, 1964. Acta Soc. Ent. Cechoslov. 61: 142.

seminiger (Ashmead). Ont. (Ottawa).

Acoloides seminiger Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 170, 173. ♀.

subapterus (Ashmead). Ont. (Ottawa).

Acoloides subapterus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 170, 173. ♀.

Genus CERATOBAEUS Ashmead

Ceratobaeus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 167, 175.

Type-species: *Ceratobaeus cornutus* Ashmead. Orig. desig.

The species of this genus are parasitic in spider egg sacs.

binotatus Ashmead. Md., D. C., Ind., Ont.

Ceratobaeus binotatus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 176. ♀.

cornutus Ashmead. D. C.

Ceratobaeus cornutus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 176. ♀.

Genus BAEUS Haliday

Baeus Haliday, 1833. Ent. Mag. 1: 270.

Type-species: *Baeus seminulum* Haliday. Monotypic.

Hyperbaeus Foerster, 1856. Hym. Stud., v. 2, p. 144. Unnecessarily proposed as a n. name for *Baeus* Haliday, which Foerster thought to be preoccupied by *Baea* Commerson in Botany.

Psilobaenus Kieffer, 1926. Das Tierreich, Lief. 48, pp. xvii, 132, 151.

Type-species: *Baeus curvatus* Kieffer. Monotypic.

The species of *Baeus* are spider-egg parasites.

Revision: Kieffer, 1926. Das Tierreich, Lief. 48, pp. 146-151.

Taxonomy: Gahan, 1924. U. S. Natl. Mus., Proc. 65 (4): 20. — Masner, 1965. Brit. Mus. (Nat. Hist.), Bul., Ent. Sup. 1, p. 67.

americanus Howard. Que., N. Y., Ont., Ohio.

Baeus americanus Howard, 1890. U. S. Dept. Agr., Insect Life 2: 270. ♀.

latroducti Dozier. Md., S. C., Mo., La., Kans., Tex., Calif.; West Indies, Hawaii. Host:

Latrodectus mactans (F.).

Baeus latroducti Dozier, 1931. Ent. Soc. Wash., Proc. 33: 27. ♀, ♂.

Baeus californicus Pierce, 1939 (1938). So. Calif. Acad. Sci., Bul. 37: 101, 103. ♀, ♂.

Biology: Pemberton and Rosa, 1940. Hawaii. Planters Rec. 44: 73-80.

minutus Ashmead. Ont. (Ottawa).

Baeus minutus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 178. ♀.

niger Ashmead. Ont., D. C.

Baeus niger Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 178. ♀.

Taxonomy: Harrington, 1901. Canad. Ent. 33: 331.

piceus Ashmead. Ont. (Ottawa).

Baeus piceus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 178, 179. ♀.

rotundiventris Gahan. Ohio (Middle Bass Isl.).

Baesus rotundiventris Gahan, 1924. U. S. Natl. Mus., Proc. 65 (4): 20. ♀, ♂.
zabriskiei (Ashmead). N. Y.

Acolus Zabriskiei Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 175. ♂.

SUBFAMILY TELEASINAE

Revision: Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 180-208 (North American species).

—Kieffer, 1926. Das Tierreich, Lief. 48, pp. 173-264 (World fauna). —Dodd, 1930. Linn. Soc. N. S. Wales, Proc. 55: 41-91 (Australian fauna). —Nixon, 1936. Ann. and Mag. Nat. Hist. (10) 17: 114-141; 161-191 (African fauna). —Szabo, 1966. Folia Ent. Hungarica (n. s.) 19: 9-108 (Palearctic species).

Genus TELEAS Latreille

Teleas Latreille, 1809. Gen. Crust. Ins., v. 4, p. 32.

Type-species: *Scelio clavicornis* Latreille. Desig. by Latreille, 1810.

There are apparently no reliable published host records for any North American species of *Teleas*.

americanus (Ashmead). Fla. (Jacksonville).

Proscacantha americana Ashmead, 1887. Ent. Amer. 3: 100. ♀.

canadensis Harrington. Que. (Hull).

Teleas canadensis Harrington, 1899. Canad. Ent. 31: 78. ♂.

coxalis Ashmead. Va. (Arlington).

Teleas coxalis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 199. ♀.

lineaticeps Ashmead. D. C., Va.

Teleas lineaticeps Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 198, 199. ♂.

mandibularis (Ashmead). Fla. (Jacksonville).

Proscacantha mandibularis Ashmead, 1887. Ent. Amer. 3: 117. ♀.

pallidipes Ashmead. N. J.

Teleas pallidipes Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 199, 200. ♂.

Genus TRIMORUS Foerster

Trimorus Foerster, 1856. Hym. Stud., v. 2, pp. 101, 104.

Type-species: *Gryon nanno* Walker. Desig. by Ashmead, 1903.

Trichasius Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 209.

Type-species: *Trichasius clavatus* Provancher. Monotypic.

Hoplogryon Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 181, 200.

Type-species: *Proscacantha minutissima* Ashmead. Orig. desig.

Paragryon Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 189, 199.

Type-species: *Paragryon pedestris* Kieffer. Desig. by Kieffer, 1926.

Allogryon Kieffer, 1910. In Wytsman, Gen. Ins., fasc. 80B, p. 95.

Type-species: *Proscacantha caraborum* Riley. Desig. by Muesebeck and Walkley, 1951.

Hemimorus Cameron, 1912. Soc. Ent. 27: 77.

Type-species: *Hemimorus clavicornis* Cameron. Monotypic.

The species of this genus are very numerous but most of the described North American forms are known only from single specimens. Practically nothing is known concerning the biology and host relations of the group, but the single apparently reliable rearing record suggests parasitization in eggs of Carabidae.

Revision: Fouts, 1948. U. S. Natl. Mus., Proc. 98: 91-148 (North American species).

Taxonomy: Maneval, 1937. Mus. Roy. d'Hist. Nat. de Belg., Bul. 13 (22): 17-27. —Masner, 1964. Acta Soc. Ent. Cechoslov. 61: 144.

aeneus (Provancher). Ont. (Ottawa).

Spalangia aenea Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 200. ♂.

Taxonomy: Masner, 1969. Nat. Canad. 96: 781.

amabilis Fouts. B. C. (Chilliwack).

Trimorus amabilis Fouts, 1948. U. S. Natl. Mus., Proc. 98: 102, 146. ♀.

annulicornis (Ashmead). D. C., Miss.

Prosacantha annulicornis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 186, 188. ♀.

apterus Fouts. D. C.

Trimorus apterus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 97, 102. ♀.

bethunei (Sanders). Ill., Iowa, La. Ecology: In nest of *Formica subrufa* Roger.

Hoplogryon bethunei Sanders, 1910. Canad. Ent. 42: 15. ♂.

bilineatus (Ashmead). D. C.

Prosacantha bilineata Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 186, 194. ♀.

borealis (Ashmead). Que., Ont.

Acolus borealis Ashmead, 1888. Canad. Ent. 20: 50. ♀.

brevicarinatus Fouts. Md., D. C., Tex.

Trimorus brevicarinatus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 101, 134. ♀.

bruesi (Kieffer). Ont., Conn., N. Y.

Prosacantha brachyptera Ashmead, 1888. Canad. Ent. 20: 50. ♀. Preocc. by Thomson, 1859.

Hoplogryon bruesi Kieffer, 1910. In Wytsman, Gen. Ins., fasc. 80B, p. 96. N. name.

Hoplogryon dolichopterus Kieffer, 1926. Das Tierreich, Lief. 48, pp. 189, 216. N. name.

brunneipes Fouts. N. Y. (McLean Bogs).

Trimorus brunneipes Fouts, 1948. U. S. Natl. Mus., Proc. 98: 100, 125. ♀.

californicus (Ashmead). Calif. (Santa Cruz Mts.).

Prosacantha californica Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 186, 190. ♀.

canadensis (Ashmead). Ont. (Ottawa).

Acolus canadensis Ashmead, 1888. Canad. Ent. 20: 50. ♀.

caraborum (Riley). Que., D. C., Va. Host: *Chlaenius impunctifrons* Say.

Prosacantha caraborum Riley, 1893. In Ashmead, U. S. Natl. Mus., Bul. 45: 186, 191. ♀, ♂.

claripennis (Ashmead). Va.

Hoplogryon claripennis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 201, 203. ♀.

clarus Fouts. B. C. (Hollyburn).

Trimorus clarus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 100, 131. ♀.

clavatus (Provancher). Ont. (Ottawa).

Trichasius clavatus Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 209. ♀.

Taxonomy: Masner, 1969. Nat. Canad. 96: 783.

columbianus (Ashmead). D. C.

Prosacantha columbiana Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 186, 194. ♀.

concinus Fouts. N. Y. (Suffern).

Hoplogryon coralis Fouts, 1925. Ent. Soc. Wash., Proc. 27: 103. ♀. Preocc. by Thomson, 1859.

Trimorus concinns Fouts, 1948. U. S. Natl. Mus., Proc. 98: 101, 134. N. name.

contractus Muesebeck, n. name. Que., Ont.

Gryon flavipes Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 206, 208. ♀. Preocc. in *Trimorus* by Haliday, 1830.

crassellus Fouts. Md., D. C.

Gryon columbianus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 206, 208. ♀. Preocc. by Ashmead, 1893.

Trimorus crassellus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 98, 105. N. name.

crassiceps Fouts. B. C. (Hollyburn).

Trimorus crassiceps Fouts, 1948. U. S. Natl. Mus., Proc. 98: 98, 107. ♀.

crassicornis (Kieffer). Calif., Nev.

Hoplogryon crassicornis Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 262. ♀, ♂.

crosbyi Fouts. N. Y. (Wolcott).

Trimorus crosbyi Fouts, 1948. U. S. Natl. Mus., Proc. 98: 98, 114. ♀.

- distinctus** Fouts. Tex. (Brownwood).
Trimorus distinctus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 99, 115. ♂.
- erythrogaster** Fouts. Va. (Arlington).
Trimorus erythrogaster Fouts, 1948. U. S. Natl. Mus., Proc. 98: 98, 113. ♂.
- erythropus** (Ashmead). D. C.
Prosacantha erythropus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 187, 195. ♀.
- exilis** Fouts. B. C. (Chilliack).
Trimorus exilis Fouts, 1948. U. S. Natl. Mus., Proc. 98: 98, 107. ♀.
- finitimus** Fouts. B. C. (Chilliack).
Trimorus finitimus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 98, 110. ♀.
- flavicoxa** (Ashmead). Va.
Prosacantha flavicoxa Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 187, 196. ♀.
- flavocinctus** Fouts. N. Y. (McLean Bogs).
Trimorus flavocinctus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 100, 131. ♀.
- flavopetiolatus** (Ashmead). D. C., Va.
Prosacantha flavopetiolata Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 187, 196. ♀, ♂.
- formosus** Fouts. B. C. (Chilliack).
Trimorus formosus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 97, 103. ♀.
- fumipennis** (Ashmead). D. C., Fla.
Gryon fumipennis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 206. ♀.
- fuscipennis** (Ashmead). Fla. (Jacksonville).
Prosacantha fuscipennis Ashmead, 1887. Ent. Amer. 3: 117. ♂.
- gracilicornis** (Ashmead). "Carolina".
Prosacantha gracilicornis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 187, 193. ♀.
- grandis** (Brues). N. Y., Md.
Hoplogryon grandis Brues, 1907. Wis. Soc. Nat. Hist., Bul. 5: 102. ♀.
- improcerus** Fouts. B. C. (Chilliack).
Trimorus improcerus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 99, 119. ♀.
- jucundus** Fouts. Md. (Glen Echo).
Trimorus jucundus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 100, 127. ♀.
- kansasensis** (Gahan). Kans. (Manhattan).
Hoplogryon kansasensis Gahan, 1912. Ent. Soc. Wash., Proc. 14: 7. ♀.
- leonardi** Fouts. N. Y. (McLean Bogs).
Trimorus leonardi Fouts, 1948. U. S. Natl. Mus., Proc. 98: 100, 128. ♀.
- lepidus** Fouts. B. C. (Hollyburn).
Trimorus lepidus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 102, 147. ♀.
- linellii** (Ashmead). N. Y. (Long Isl.).
Prosacantha Linellii Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 187, 195. ♀.
- lionotus** Fouts. B. C. (Hollyburn).
Trimorus lionotus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 99, 118. ♂.
- longipennis** (Ashmead). Ont., Md., D. C., Va.
Prosacantha laevifrons Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 186, 190. ♀. Preocc. by Thomson, 1858.
Hoplogryon longipennis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 201, 202. ♀.
Hoplogryon pteridis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 201, 203. ♀.
Prosacantha levis Dalla Torre, 1898. Cat. Hym., v. 5, p. 507. N. name for *P. laevifrons* Ashmead.
- macrocerus** (Ashmead). Fla. (Jacksonville).
Prosacantha macrocera Ashmead, 1887. Ent. Amer. 3: 117. ♀, ♂.
- marylandicus** (Ashmead). Md., D. C.
Prosacantha marylandica Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 186, 193. ♀, ♂.
- melanopus** (Ashmead). Ont., B. C.
Prosacantha melanopus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 186, 189. ♀.

minor Fouts. Va. (Rosslyn).

Trimorus minor Fouts, 1948. U. S. Natl. Mus., Proc. 98: 101, 142. ♀.

minutissimus (Ashmead). Fla. (Jacksonville).

Prosacantha minutissima Ashmead, 1887. Ent. Amer. 3: 117. ♀.

minutus Fouts. Md. (Glen Echo).

Trimorus minutus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 99, 117. ♀.

monticola Fouts. Pa. (Mount Holly Springs).

Trimorus monticola Fouts, 1948. U. S. Natl. Mus., Proc. 98: 101, 140. ♀.

nanus (Ashmead). Utah (Utah Lake).

Prosacantha nana Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 186, 191. ♀.

nigricoxa Fouts. B. C. (Chilliwack).

Trimorus nigricoxa Fouts, 1948. U. S. Natl. Mus., Proc. 98: 101, 137. ♀.

nigripes (Ashmead). Oreg.

Prosacantha nigripes Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 186, 188. ♀, ♂.

nigrobrunneus Fouts. Md. (Sudley).

Trimorus nigrobrunneus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 102, 144. ♀.

nitidus Fouts. B. C.

Trimorus nitidus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 98, 106. ♀.

notabilis Fouts. B. C. (Chilliwack).

Trimorus notabilis Fouts, 1948. U. S. Natl. Mus., Proc. 98: 99, 120. ♀.

obscuripes (Ashmead). Ont., D. C.

Hoplogryon obscuripes Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 202, 204. ♀.

obscurus Fouts. B. C. (Chilliwack).

Trimorus obscurus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 101, 139. ♀.

pallidipes (Ashmead). Va. (Arlington).

Xenomerus pallidipes Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 184. ♀.

pennsylvanicus (Ashmead). "Penna."

Prosacantha pennsylvanica Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 186, 189. ♀.

percurrens Fouts. B. C. (Hollyburn).

Trimorus percurrens Fouts, 1948. U. S. Natl. Mus., Proc. 98: 99, 116. ♂.

perspicuus Fouts. B. C. (Hollyburn).

Trimorus perspicuus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 102, 145. ♀.

petiolatus Fouts. N. Y. (Cinnamon Lake).

Trimorus petiolatus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 100, 130. ♀.

pictus Fouts. B. C. (Hollyburn).

Trimorus pictus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 99, 119. ♀.

pleuralis (Ashmead). Pa., D. C.

Prosacantha pleuralis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 186, 195. ♀.

pulchellus Fouts. B. C. (Chilliwack).

Trimorus pulchellus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 101, 140. ♀.

pulchricornis Fouts. Md. (Glen Echo).

Trimorus pulchricornis Fouts, 1948. U. S. Natl. Mus., Proc. 98: 98, 104. ♀.

punctiger Fouts. Md. (Glen Echo).

Trimorus punctiger Fouts, 1948. U. S. Natl. Mus., Proc. 98: 101, 135. ♀.

punctithorax Fouts. B. C. (Chilliwack).

Trimorus punctithorax Fouts, 1948. U. S. Natl. Mus., Proc. 98: 98, 108. ♀.

punctiventris (Ashmead). D. C., Va.

Prosacantha punctiventris Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 186, 192. ♀.

pusillus (Ashmead). Fla. (Jacksonville).

Prosacantha pusilla Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 186, 192. ♀.

repentinus Fouts. Md. (Cabin John).

Trimorus repentinus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 99, 124. ♀.

reticulatus Fouts. Md. (Glen Echo).

Trimorus reticulatus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 101, 143. ♀.

robustus Fouts. B. C. (Chilliwack).

Trimorus robustus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 98, 110. ♀.

rubripes Fouts. Md. (Glen Echo).

Trimorus rubripes var. *rubripes* Fouts, 1948. U. S. Natl. Mus., Proc. 98: 100, 122. ♂.

rubripes var. **rufocoxalis** Fouts. Md. (Glen Echo).

Trimorus rubripes var. *rufocoxalis* Fouts, 1948. U. S. Natl. Mus., Proc. 98: 99, 123. ♂.

rufocinctus Fouts. Md. (Glen Echo).

Trimorus rufocinctus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 100, 130. ♀.

rufosignatus (Kieffer). N. Y., D. C.

Hoplogryon rufipes Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 202, 205. ♀. Preocc. by Thomson, 1859.

Hoplogryon rufosignatus Kieffer, 1910. In Wytsman, Gen. Ins., fasc. 80B, p. 97. N. name.

Hoplogryon ashmeadianus Kieffer, 1926. Das Tierreich, Lief. 48, p. 215. N. name.

schwarzii (Ashmead). D. C.

Prosacantha Schwarzii Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 186, 192. ♀.

sculpturatus Fouts. Md. (Glen Echo).

Trimorus sculpturatus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 100, 129. ♀.

silvaticus Fouts. B. C. (Hollyburn).

Trimorus silvaticus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 101, 132. ♀.

solitarius (Ashmead). Ont. (Ottawa).

Hoplogryon solitarius Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 202, 205. ♂.

striatifrons (Ashmead). Fla. (Jacksonville).

Prosacantha striatifrons Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 187, 188. ♂.

striativentris (Ashmead). D. C.

Prosacantha striativentris Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 187, 197. ♂.

striopunctatus Fouts. Md., Pa.

Trimorus striopunctatus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 98, 111. ♀.

subapterus Fouts. B. C. (Chilliwack).

Trimorus subapterus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 98, 109. ♀.

sulcatus (Kieffer). Tex.

Hoplogryon sulcatus Kieffer, 1904. Arkiv for Zool. 1: 538. ♂.

tenuicornis (Kieffer). Wash., Calif.

Hoplogryon tenuicornis Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 263. ♂.

texanus Fouts. Tex. (Brownwood).

Trimorus texanus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 101, 141. ♀.

tripartitus (Kieffer). Pa. (Jeannette).

Hoplogryon tripartitum Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 33. ♂.

utahensis (Ashmead). Utah (Park City).

Prosacantha utahensis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 186, 189. ♀.

varius Fouts. Md. (Cabin John).

Trimorus varius Fouts, 1948. U. S. Natl. Mus., Proc. 98: 99, 120. ♂.

vinctus Fouts. Iowa (Ames).

Hoplogryon similis Fouts, 1924. Ent. Soc. Wash., Proc. 26: 160 ♀. Preocc. by Thomson, 1859.

Trimorus vinctus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 101, 140. N. name.

virginiensis (Kieffer). Va.

Hoplogryon tibialis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 201, 203. ♀. Preocc. by Foerster, 1841.

Hoplogryon virginiensis Kieffer, 1910. In Wytsman, Gen. Ins., fasc. 80B, p. 98. N. name.

whittakeri Fouts. B. C. (Chilliwack).

Trimorus whittakeri Fouts, 1948. U. S. Natl. Mus., Proc. 98: 101, 138. ♀.

xanthognathus (Ashmead). Fla. (Jacksonville).

Prosacantha xanthognatha Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 187, 197. ♂.

xanthopus Fouts. Md. (Glen Echo).

Trimorus xanthopus Fouts, 1948. U. S. Natl. Mus., Proc. 98: 100, 126. ♀.

Genus TRISACANTHA Ashmead

Trisacantha Ashmead, 1887. Ent. Amer. 3: 117.

Type-species: *Trisacantha americana* Ashmead. Monotypic.

Pentacantha Ashmead, 1888. Canad. Ent. 20: 51. Preocc. by Stal, 1871.

Type-species: *Pentacantha canadensis* Ashmead. Monotypic.

Trissacantha Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 180, 182. Emend.

Propentacantha Kieffer, 1926. Das Tierreich, Lief. 48, pp. xxi, 173, 241. N. name for

Pentacantha Ashmead.

Host relationships of members of this group are unknown.

americana Ashmead. Fla.

Trissacantha americana Ashmead, 1887. Ent. Amer. 3: 117. ♂.

canadensis (Ashmead). Ont., Kans.

Pentacantha Canadensis Ashmead, 1888. Canad. Ent. 20: 51. ♀.

longicornis (Kieffer). Tex.

Pentacantha longicornis Kieffer, 1904. Arkiv for Zool. 1: 536. ♂.

rufitarsis (Kieffer). Calif. (Santa Clara).

Pentacantha rufitarsis Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 263. ♀.

rugosa Ashmead. Va. (Arlington).

Trissacantha rugosa Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 183. ♂.

striaticeps Kieffer. Tex.

Trissacantha striaticeps Kieffer, 1904. Arkiv for Zool. 1: 535. ♂.

SUBFAMILY TELENOMINAE

Most of the species of this subfamily develop as parasites in the eggs of Lepidoptera or Hemiptera but a few parasitize the eggs of Diptera and Neuroptera.

Revision: Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 138-166 (Nearctic species). —Dodd, 1913. Roy. Soc. So. Austral. Trans. 37: 157-174 (Australian species). —Kieffer, 1926. Das Tierreich, Lief. 48, pp. 15-131 (World fauna). —Nixon, 1935. Roy. Ent. Soc. London, Trans. 83: 73-103 (African species).

Taxonomy: Ashmead, 1903. N. Y. Ent. Soc., Jour. 11: 87-88. —Nixon, 1937. Ann. and Mag. Nat. Hist. (10) 20: 113-116. —Masner, 1961. First Internatl. Conf. Ins. Path. and Biol. Control, Trans. pp. 375-381.

Genus ARADOPHAGUS Ashmead

Aradophagus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 138, 166.

Type-species: *Aradophagus fasciatus* Ashmead. Monotypic.

Taxonomy: Masner and Kozlov, 1965. Acta Ent. Bohemoslov. 62: 287-290.

fasciatus Ashmead. Mass., Fla., Tex.; Europe. Host: *Mezira granulata* (Say)?

Aradophagus fasciatus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 166. ♀, ♂.

Genus EUMICROSOMA Gahan

Eumicrosoma Gahan, 1913. U. S. Natl. Mus., Proc. 46: 442.

Type-species: *Eumicrosoma beneficium* Gahan. Orig. desig.

Baeoneurella Dodd, 1914. Roy. Soc. So. Austral. Trans. 38: 124.

Type-species: *Baeoneura giraulti* Dodd. Orig. desig.

Nardo Nixon, 1938. Ann. and Mag. Nat. Hist. (11) 1: 278.

Type-species: *Nardo cumaeus* Nixon. Orig. desig.

Szelenyiella Szabo, 1957. Opusc. Zool. Inst. Zoosyst. Univ. Budapest, 2: 49.

Type-species: *Szelenyiella platythoracis* Szabo. Orig. desig.

Taxonomy: Masner, 1965. Brit. Mus. (Nat. Hist.), Bul., Ent., Sup. 1, p. 108. — Masner and Kozlov, 1965. Acta Ent. Bohemoslov. 62: 291-292.

beneficum Gahan. Va., Fla., Ill., Iowa, S. Dak., Kans., Okla., Tex.; Brit. W. Indies; USSR. Host: *Blissus leucopterus leucopterus* (Say), *B. leucopterus hirtus* Mont., *B. insularis* Barber. *Eumicrosoma benefica* Gahan, 1913. U. S. Natl. Mus., Proc. 46: 442. ♀, ♂.

Biology: McCulloch, 1915. Jour. Econ. Ent. 8: 248-260. — Dicke, 1937. Jour. Econ. Ent. 30: 376.

bicolor (Ashmead). Va., Mich. Ecology: From unknown eggs on *Poa compressa*.

Baeoneura bicolor Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 235. ♀.

Genus **TELENOMUS** Haliday

Telenomus Haliday, 1833. Ent. Mag. 1: 271.

Type-species: *Telenomus brachialis* Haliday. Desig. by Ashmead, 1893.

Hemisius Westwood, 1833. London, Edinb. and Dublin Phil. Mag. and Jour. (3) 2: 445.

Type-species: *Hemisius minutus* Westwood. Monotypic.

Phanurus Thomson, 1860. Ofvers. Kongl. Vetensk.-Akad., Forh. 17: 169, 172.

Type-species: *Phanurus angustatus* Thomson. Desig. by Ashmead, 1893.

Liophanurus Kieffer, 1912. In Andre, Spec. Hym. Eur. Alg., v. 11, pp. 9, 37.

Type-species: *Telenomus spilosomatis* Ashmead. Orig. desig.

Prophanurus Kieffer, 1912. In Andre, Spec. Hym. Eur. Alg., v. 11, pp. 9, 37.

Type-species: *Teles phalaenarum* Nees. Orig. desig.

Aholeus Kieffer, 1913. In Alluaud and Jeannel, Voy. Afr. Orient., v. 1, p. 4.

Type-species: *Aholeus monticola* Kieffer. Orig. desig.

Neotelenomus Dodd, 1913. Roy. Soc. So. Austral., Trans. 37: 158, 171.

Type-species: *Neotelenomus anthereae* Dodd. Orig. desig.

Paridris Brethes, 1917 (not Kieffer, 1908). Zool. Aplicada, An. 4: 27.

Type-species: *Paridris chilensis* Brethes. Monotypic.

Revision: Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 139-161 (North American species).

— Kieffer, 1926. Das Tierreich, Lief. 48, pp. 24-91 (World fauna). — Nixon, 1935. Roy. Ent. Soc. London, Trans. 83: 74-92 (African species).

Taxonomy: Mayr, 1879. Zool.-Bot. Gesell. Wien, Verhandl. 29: 697-714. — Nixon, 1937. Ann.

and Mag. Nat. Hist. (10) 20: 113-127. — Nixon, 1940. Ann. and Mag. Nat. Hist. (11) 6:

497-512. — Risbec, 1950. Trav. Lab. d'Ent. du Sect. Soudanais de Recherches Agron. 2, pp. 556-566. — Masner, 1961. Acta Soc. Ent. Cechoslov. 58: 166-167. — Masner, 1965. Brit. Mus.

(Nat. Hist.), Bul. Ent., Sup. 1, p. 109.

alsophilae Viereck. N. S., Mass., Conn., N. Y., Pa., N. J., Va., N. C., Wis., Minn., Man., Sask.

Host: *Alsophila pometaria* (Harris).

Telenomus alsophilae Viereck, 1924. Canad. Ent. 56: 111. ♀, ♂.

Biology: Schread, 1945. Conn. Agr. Expt. Sta., Bul. 488: 416-418. — Ciesla, 1965. Jour. Econ.

Ent. 58: 702-704. — Rauschenberger and Talerico, 1967. Jour. Econ. Ent. 60: 881-882.

arzamae Riley. D. C., La. Host: *Arzama densa* (Wlkr.).

Telenomus arzamae Riley, 1893. In Ashmead, U. S. Natl. Mus., Bul. 45: 144, 157. ♀, ♂.

bakeri Kieffer. Calif. (San Mateo).

Telenomus Bakeri Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 261. ♂.

bifidus Riley. D. C., Wis., Mo. Host: *Hyphantria cunea* (Drury).

Telenomus bifidus Riley, 1887. U. S. Dept. Agr., Ann. Rpt. for 1886, p. 531. ♀, ♂.

californicus Ashmead. N. Mex., Idaho, Nev., Oreg., Calif. Host: *Orgyia* sp., *O. pseudotsugata* (McD.).

Telenomus californicus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 143, 150. ♀.

catalpae Muesebeck. Md., Va., Ga., Ark. Host: *Ceratomia catalpae* (Bdvl.).

Telenomus catalpae Muesebeck, 1935. Wash. Acad. Sci., Jour. 25: 279. ♀, ♂.

chrysopae Ashmead. D. C., Va., S. C., Fla., Ark., Minn., Kans. Host: *Chrysopa* spp., *Lomamyia flavicornis* (Wlkr.).

Telenomus chrysopae Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 145, 159. ♂.

- clisiocampae** Riley. Transition and Upper Austral Zones. Host: *Malacosoma fragile* (Stretch), *M. dissitria* (Hbn.), *M. americanum* (F.).
Telenomus clisiocampae Riley, 1893. In Ashmead, U. S. Natl. Mus., Bul. 45: 145, 160. ♀, ♂.
 Biology: Hodson, 1939. Ent. Soc. Amer., Ann. 32: 131-136. — Langston, 1957. Univ. Calif. Pub., Ent. 14: 30-31.
- coelodasidis** Ashmead. Que., N. H., N. Y., D. C. Host: *Schizura leptinoides* (Grote), *Heterocampa gutticratta* (Wlkr.).
Telenomus coelodasidis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 145, 159. ♂.
- coloradensis** Crawford. Colo., Idaho, Wash. Host: *Orygia oslari* Barnes, *O. pseudotsugata* (McD.).
Telenomus coloradensis Crawford, 1910 (1909). Ent. Soc. Wash., Proc. 11: 206. ♀, ♂.
- dalmati** (Ratzeburg). Ont., Maine, Mass., N. Y.; Europe. Host: *Notolophus antiquus* (L.), *Orygia leucostigma* (J. E. Smith).
Teles Dalmanni Ratzeburg, 1844. Ichn. d. Forstins., v. 1, p. 185. ♀, ♂.
Telenomus Dalmati Mayr, 1879. Zool.-Bot. Gesell. Wien, Verhandl. 29: 699, 708. Emend.
Telenomus decorator Mayr, 1879. Zool.-Bot. Gesell. Wien, Verhandl. 29: 709.
Telenomus dalmatii Dalla Torre, 1898. Cat. Hym., v. 5, p. 514. Emend.
Telenomus Orygiae Fitch, 1863 (1862). N. Y. State Agr. Soc., Trans. 22: 679.
Telenomus fiskei Brues, 1910. Psyche 17: 106. ♀, ♂.
- Taxonomy: Wilcox, 1920. Psyche 27: 80-81.
- dimmocki** Ashmead. N. H., N. Y., Ga., Fla., Ohio, Kans., Tex. Host: *Cosmopepla bimaculata* (Thomas), *Podisus maculiventris* (Say), *Thyanta* sp.
Telenomus dimmocki Ashmead, 1898. Ent. Soc. Wash., Proc. 4: 155. ♀, ♂.
- dolichocerus** (Ashmead). Fla., Okla. Host: *Emesaya brevipennis* (Say).
Teles dolichocerus Ashmead, 1887. Ent. Amer. 3: 100. ♂.
- emersoni** (Girault). Ont., La., Ark., Tex., Sask., Nev., Ariz., Calif. Host: *Tabanus lineola* F., *T. punctifer* O. S., *Chrysops aestuans* Wulp, *C. mitis* O. S.
Phanurus emersoni Girault, 1916. Canad. Ent. 48: 150. ♀, ♂.
- Biology: Parman, 1928. U. S. Dept. Agr., Cir. 18: 1-6.
- fimbriatus** Kieffer. Wis.
Telenomus fimbriatus Kieffer, 1904. Arkiv for Zool. 1: 539. ♀.
- flavipes** (Ashmead). Va., Ind.
Phanurus flavipes Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 140, 141. ♀.
- floridanus** (Ashmead). Fla.
Phanurus floridanus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 140. ♀.
- geometrae** Ashmead. N. B., N. H., D. C. Host: Geometrid on wild cherry.
Telenomus geometrae Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 144, 157. ♀, ♂.
- gnophaelae** Ashmead. Wash. (Easton). Host: *Gnophaela latipennis* (Bdvl.).
Telenomus gnophaelae Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 143, 149. ♀, ♂.
- goniopsis** Crawford. Mass., Md., Ark. Host: *Goniops chrysocoma* (O. S.).
Telenomus goniopsis Crawford, 1913. U. S. Natl. Mus., Proc. 45: 243. ♀, ♂.
- gossypiicola** Ashmead. La. (Concordia Parish).
Telenomus gossypiicola Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 144, 156. ♀.
- gracilicornis** Ashmead. Que., Ont.
Telenomus gracilicornis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 143, 149. ♀.
- graptae** Howard. Que., N. H., D. C., Ill., Colo., Ariz. Host: *Polygonia interrogationis* (F.), *P. progne* Cram., *Nymphalis antiopa* (L.), *Lycæna phlaeas hypophlaeas* (Bdvl.), *L. thoea* Guerin, *Plebejus icarioides* Bdvl., *Polites themistocles* (Latr.), *P. taumas* (F.), *Vanessa atalanta* (L.).
Telenomus graptae Howard, 1889. In Scudder, Butterflies East. U. S., p. 1896. ♀, ♂.
- heliothidis** Ashmead. Kans., Tex., La., Fla.; Cuba. Host: *Heliothis zea* (Boddie), *Spodoptera frugiperda* (J. E. Smith).
Telenomus heliothidis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 144, 152. ♀.
- Biology: Winburn and Painter, 1932. Kans. Ent. Soc., Jour. 5: 11-15.

- heracleicola** Brues. Wash. (Pullman). Host: Butterfly eggs.
Telenomus heracleicola Brues, 1906. Wis. Nat. Hist. Soc., Bul. 4: 148. ♀, ♂.
- hubbardi** Ashmead. Fla. (Centerville). Host: *Reduviidae*.
Telenomus hubbardi Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 143, 146. ♀.
- hullensis** Harrington. Que. (Hull).
Telenomus hullensis Harrington, 1899. Roy. Soc. Canada, Trans. (2) 5: 182. ♀.
- ichthyuræ** Ashmead. Maine, D. C., Mich., Miss., Mo., Okla., Tex. Host: *Ichthyura inclusa* Hbn.,
Datana angustii G. and R., *D. integerrima* G. and R.
Telenomus ichthyuræ Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 144, 153. ♀, ♂.
- infuscatipes** (Ashmead). Fla. (Jacksonville).
Teleas infuscatipes Ashmead, 1887. Ent. Amer. 3: 100. ♀, ♂.
- koebelei** Ashmead. Calif. (Alameda).
Telenomus Koebelei Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 143, 147. ♀.
- lavænae** Ashmead. D. C. Host: *Psacaphora luciferella* (Clem.).
Telenomus lavænae Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 144, 158. ♀.
- longicornis** Ashmead. N. Y. (Saranac).
Telenomus longicornis Ashmead, 1901. N. Y. State Mus., Bul. 47: 587. ♂.
- maculipennis** Ashmead. Fla. (Jacksonville).
Telenomus maculipennis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 144, 155. ♀.
- minimus** Ashmead. Va., Ill. Host: *Pseudaletia unipuncta* (Haw.).
Telenomus minimus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 144, 152. ♀.
- nigriscapus** Ashmead. Mich., Ill. Host: *Diacrisia virginica* (F.).
Telenomus nigriscapus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 143, 147. ♀, ♂.
- noctuae** Ashmead. D. C. Host: Unknown noctuid.
Telenomus noctuae Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 143, 148. ♀, ♂.
- opacus** (Howard). Calif. (Los Angeles).
Thoron opacus Howard, 1889. U. S. Dept. Agr., Insect Life 1: 268. ♂.
- ovivorus** (Ashmead). Ont., D. C., Ill., Kans., Idaho, Utah. Host: *Nysius ericae* (Schill.), *N. angustatus* Uhler.
Phanurus ovivorus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 140. ♀.
- Biology: Wadley, 1940. Kans. Ent. Soc., Jour. 13: 6-7.
- pamphilæ** Ashmead. Ont. (Ottawa). Host: *Atrytone ruricola* (Bdvl.).
Telenomus pamphilæ Ashmead, 1899. In Harrington, Roy. Soc. Canada, Trans. (2) 5: 182. ♀.
- pentatomus** Kieffer. Nev. (Ormsby County).
Telenomus pentatomus Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 261. ♀, ♂.
- perplexus** Girault. Ohio. Host: *Euschistus variolarius* (Pal. de Beauv.), *E. tristigmus* (Say).
Telenomus perplexus Girault, 1906. Psyche 13: 65. ♀, ♂.
- persimilis** Ashmead. Conn., Va., Ohio, Mich., Ind., Ill., Tenn., La., Ark., Iowa.
Telenomus persimilis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 143, 150. ♀.
- podisi** Ashmead. Transition and Upper Austral Zones. Host: *Podisus maculiventris* (Say),
Oebalus pugnax (F.), *Chlorochroa sayi* Stal, *Euschistus impictiventris* Stal, *E. servus* (Say), *Cosmopepla bimaculata* (Thos.), *Trichopepla semivittata* (Say), *Holcostethus limbolarius* (Stal), *Thyanta* sp.
Telenomus podisi Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 144, 158. ♀, ♂.
- pusillus** Ashmead. Va. (Arlington).
Telenomus pusillus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 143, 146. ♀.
- quaintancei** Girault. Md., Ga. Host: *Sanninoidea exitiosa* (Say).
Telenomus quaintancei Girault, 1906. Psyche 13: 63. ♀, ♂.
- Biology: Gahan, 1911. Jour. Econ. Ent. 4: 423-424.
- reynoldsi** Gordh and Coker. Calif., Wash. Host: *Geocoris punctipes* Say, *G. pallens* Stal.
Telenomus reynoldsi Gordh and Coker, 1973. Canad. Ent. 105: 1407. ♀, ♂.
- rileyi** Howard. Mo. Host: *Asterocampa clyton* (Say).
Telenomus rileyi Howard, 1889. In Scudder, Butterflies East. U. S., p. 1896. ♂.

- sphingis* (Ashmead). N. C., Fla., Ohio, Tenn., Mo.; West Indies. Host: *Manduca sexta* (L.).
Teleas sphingis Ashmead, 1887. U. S. Dept. Agr., Div. Ent., Bul. 14: 18. ♀, ♂.
Telenomus monilicornis Ashmead, 1894. Linn. Soc. London, Jour., Zool. 25: 203. ♂.
spilosomatis Ashmead. D. C., Va., Ohio, Kans. Host: *Diacrisia virginica* (F.).
Telenomus spilosomatis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 144, 151. ♀, ♂.
szelenyii Muesebeck. Wash. (South. Bellingham). Host: *Stilpnutia salicis* (L.).
Telenomus szelenyii Muesebeck, 1974. Folia Ent. Hungarica 27: 135. ♀.
tabanivorus (Ashmead). Mass., N. Y., Ga., Fla., Ala., Ohio, Ill., La., Ark. Host: *Tabanus atratus* F.
Phanurus tabanivorus Ashmead, 1895. Ill. State. Lab. Nat. Hist., Bul. 4: 274. ♀, ♂.
 Biology: Jones and Anthony, 1964. U. S. Dept. Agr., Tech. Bul. 1295: 34.
tetratomus Kieffer. Nev. (Ormsby County).
Telenomus tetratomus Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 261. ♀.
texanus Brues. Tex. Ecology: In nest of *Eciton coecum* (Latr.).
Telenomus texanus Brues, 1902. Amer. Nat. 36: 372. ♀.

Genus DISSOLCUS Ashmead

- Dissolcus* Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 138, 164.
 Type-species: *Dissolcus nigricornis* Ashmead. Orig. desig.
nigricornis Ashmead. Fla. (Jacksonville).
Dissolcus nigricornis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 165. ♀.

Genus TRISSOLCUS Ashmead

- Trissolcus* Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 138, 161.
 Type-species: *Trissolcus brochymenae* Ashmead. Orig. desig.
Asolcus Nakagawa, 1900. Spec. Rpt. Imp. Agr. Sta. Japan, v. 6, p. 17.
 Type-species: *Asolcus nigripedius* Nakagawa. Monotypic.
Aphannurus Kieffer, 1912. In Andre, Spec. Hym. Eur. Alg., v. 11, pp. 10, 69. Preocc. by Looss, 1907.
 Type-species: *Teleas semistriatus* Nees. Orig. desig.
Immsia Cameron, 1913 (1912). Indian Forest Rec. 4: 104.
 Type-species: *Immsia carinifrons* Cameron. Monotypic.
Microphanurus Kieffer, 1926. Das Tierreich, Lief. 48, pp. xv, 16, 91. N. name for *Aphannurus* Kieffer.

The species of *Trissolcus* seem to be exclusively parasitic in the eggs of Hemiptera. Two African species have been recorded from eggs of Lepidoptera but there appears to be some doubt concerning the accuracy of those records.

Revision: Ashmead 1893. U. S. Natl. Mus., Bul. 45: 161-164 (No. Amer. species). — Kieffer, 1926. Das Tierreich, Lief. 48, pp. 91-116, 126-130 (World species). — Nixon, 1935. Roy. Ent. Soc. London, Trans. 83: 95-103 (African species). — Nixon, 1938. Ann. and Mag. Nat. Hist. (11) 2: 122-139 (Asian species). — Nixon, 1943. Bul. Ent. Res. 34: 135-144 (Ethiopian and Indo-Malayan species).

Taxonomy: Watanabe, 1951. Shikoki Ent. Soc., Trans. 2: 21. — Masner, 1964. Acta Soc. Ent. Cechoslov. 61: 145-146.

basalis (Wollaston). Fla., La.; Africa; Australia; certain Pacific islands; West Indies. Host: *Nezara viridula* (L.).

- Telenomus basalis* Wollaston, 1858. Ann. and Mag. Nat. Hist. (3) 1: 25. ♀, ♂.
Telenomus maderensis Wollaston, 1858. Ann. and Mag. Nat. Hist. (3) 1: 25. ♀.
Telenomus megacephalus Ashmead, 1894. Linn. Soc. London, Jour., Zool. 25: 203, 212. ♀.
Telenomus megalocephalus Schulz, 1906. Spolia Hym., p. 152. Emend.
Telenomus piceipes Dodd, 1919. Ent. Soc. London, Trans. 1919: 354. ♀, ♂.

Taxonomy: Priesner, 1931. Soc. Roy. Ent. d'Egypte, Bul. 15: 137-139. — Nixon, 1935. Roy. Ent. Soc. London, Trans. 83: 100-102. — Nixon, 1943. Bul. Ent. Res. 34: 143.

- Biology: Miller, 1928. Fla. Ent. 12: 17-20. —Kamal, 1937. Soc. Roy. Ent. d'Egypte, Bul. 21: 181-207. —Noble, 1937. Agr. Gaz. N. S. Wales 48: 337-341. —Lever, 1941. Fiji Dept. Agr., Jour. 12: 45-47. —Smith, 1945. Queensland Agr. Jour. 61: 347-348. —Cumber, 1951. New Zeal. Jour. Sci. and Technol., Sect. B, 32: 30-37. —Cumber, 1953. New Zeal. Jour. Sci. and Technol., Sect. B, 34: 267-269. —Cumber, 1964. New Zeal. Jour. Sci. 7: 536-554.
- brochymenae** (Ashmead). Fla., Ind., Ark., Tex. Host: *Brochymena arborea* (Say), *Acrosternum hilare* (Say).
Telenomus Crochymenae (!) Ashmead, 1881. Fla. Agr. 4: 193. ♀.
Telenomus brochymenae Ashmead, 1887. Ent. Amer. 3: 118. Emend.
- cosmopeplae** (Gahan). Ill. (Urbana). Host: *Cosmopepla bimaculata* (Thomas).
Telenomus cosmopeplae Gahan, 1926. Ent. Soc. Wash., Proc. 28: 67. ♀, ♂.
- Biology: Balduf, 1926. Jour. Econ. Ent. 19: 829-841.
- edessae** Fouts. S. C., La., Kans. Host: *Edessa bifida* (Say), *Acrosternum hilare* (Say).
Trissolcus edessae Fouts, 1920. Ent. Soc. Wash., Proc. 22: 65. ♀.
- euschisti** (Ashmead). Transition and Upper Austral Zones. Host: *Euschistus servus* (Say), *Acrosternum hilare* (Say), *Perillus bioculatus* (F.).
Telenomus euschistus (!) Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3: App., p. II, ♀.
Telenomus euschisti Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 161, 162. Emend.
- murgantiae** Ashmead. D. C., N. C., Ga., Fla., La., Calif.; Hawaii. Host: *Murgantia histrionica* (Hahn).
Trissolcus murgantiae Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 162, 163. ♀, ♂.
- Biology: Huffaker, 1941. Jour. Econ. Ent. 34: 117-118. —De Bach, 1942. Jour. Econ. Ent. 35: 787. —Fullaway, 1947. Hawaii. Ent. Soc., Proc. 13: 13.
- podisi** Ashmead. Conn., Pa., W. Va., Ohio, Mich., Ind., Ill., Mo., Calif. Host: *Podisus maculiventris* (Say), *P. serieiventris* Uhler, *Banasa dimidiata* (Say).
Trissolcus podisi Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 161, 162. ♀.
- rufiscapus** Ashmead. D. C.
Trissolcus rufiscapus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 162, 163. ♀.
- rufitarsis** Kieffer. Nev. (Ormsby County).
Trissolcus rufitarsis Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 262. ♀.
- thyantae** Ashmead. N. Y., Md., Ga., Ala., Ohio, Ind., Mo. Host: *Thyanta* sp., *Nezara viridula* (L.).
Trissolcus thyantae Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 162, 163. ♀.
- utahensis** (Ashmead). Colo., N. Mex., Ariz., Utah, Idaho, Alta., Calif.; Mexico. Host: *Chlorochroa sayi* Stal, *C. ligata* (Say), *C. uhleri* Stal, *Thyanta pallidovirens spinosa* Ruckes, *Euschistus impictiventris* (Stal), *E. servus* (Say).
Telenomus utahensis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 143, 148. ♀, ♂.
Hadronotus mesillae Cockerell, 1897. Canad. Ent. 29: 25. ♂.
Telenomus ashmeadi Morrill, 1907. Amer. Nat. 41: 419. ♀, ♂.
- Biology: Morrill, 1907. Amer. Nat. 41: 421-430. —Jubb and Watson, 1971. Ent. Soc. Amer., Ann. 64: 202-205, 452-456.

Family PLATYGASTRIDAE

Members of this family for which host associations are known are mainly parasites of Diptera, and especially of the Cecidomyiidae, but some are important parasites of mealybugs and whiteflies. Occasional species have been reared from wasp larvae of the subfamily Crabroninae, from hymenopterous galls, and from eggs of certain Coleoptera.

Revision: Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 247-330. —Kieffer, 1926. Das Tierreich, Lief. 48, pp. 557-884.

Taxonomy: Foerster, 1856. Hym. Stud., v. 2, pp. 20, 28, 106-116. —Thomson, 1859. Ofvers. Kongl. Vetensk.-Akad., Forh. 16: 69-88. —Marshall, 1873. Cat. Brit. Hym.; Oxyura, pp. 17-22. —Ashmead, 1903. N. Y. Ent. Soc., Jour. 11: 94-99. —Mani, 1941. Cat. Indian Insects, pt. 26, pp. 29-35. —Jansson, 1939. Ent. Tidskr. 60: 173-175. —Szabo, 1959. Mus. Natl.

Hungarici, Ann. Hist.-Nat. 51: 389-390. — Kozlov, 1970. Ent. Obozr. 49: 219-225 (English transl.: Ent. Rev. 49: 123-126). — Kozlov, 1971. Soc. Ent. Unionis Sovet., Horae 54: 54-64.

Biology: Kieffer, 1926. Das Tierreich, Lief. 48, pp. 7-10. — Clausen, 1940. Entomophagous Insects, pp. 239-249.

SUBFAMILY INOSTEMMATINAE

Taxonomy: Ashmead, 1903. N. Y. Ent. Soc., Jour. 11: 95-96. — Szabo, 1959. Mus. Natl. Hungarici, Ann. Hist.-Nat. 51: 390. — Kozlov, 1970. Ent. Obozr. 49: 220-222 (English transl.: Ent. Rev. 49: 123-124).

TRIBE INOSTEMMATINI

Genus METACLISIS Foerster

Metaclisis Foerster, 1856. Hym. Stud., v. 2, pp. 106, 109.

Type-species: *Metaclisis areolatus* Foerster. Monotypic.

Parinostemma Kieffer, 1914. In Andre, Spec. Hym. Eur. Alg., v. 11, p. 355.

Type-species: *Inostemma quinda* Walker. Orig. desig.

Taxonomy: Masner, 1965. Brit. Mus. (Nat. Hist.), Bul., Ent., Sup. 1, p. 131. — Hellen, 1968. Notulae Ent. 48: 45. — Kozlov, 1970. Ent. Obozr. 49: 220 (English transl.: Ent. Rev. 49: 123).

carinata (Ashmead). D. C.

Monocrita carinata Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 253, 254. ♀.

floridana (Ashmead). Fla. (Jacksonville).

Acerota floridana Ashmead, 1887. Canad. Ent. 19: 128. ♀.

Genus INOSTEMMA Haliday

Inostemma Haliday, 1833. Ent. Mag. 1: 270.

Type-species: *Psilus boscii* Jurine. Monotypic.

Acerota Foerster, 1856. Hym. Stud., v. 2, p. 107. No species. — Ashmead, 1887. Canad. Ent. 19: 128. Two species.

Type-species: *Acerota caryae* Ashmead. Desig. by Muesebeck and Walkley, 1951.

Brachinostemma Kieffer, 1916. Zentbl. f. Bakt., Parasitenk. u. Infektionskrankheiten, Abt. 2, 46: 551.

Type-species: *Brachinostemma mediterraneum* Kieffer. Orig. desig.

Inocerota Szelenyi, 1939. Mus. Nat. Hungarici, Ann. 32 (Zool.): 121.

Type-species: *Inocerota discessus* Szelenyi. Orig. desig.

Revision: Kieffer, 1926. Das Tierreich, Lief. 48, pp. 579-595. — Szelenyi, 1938. Mus. Nat. Hungarici, Ann. 31 (Zool.): 108-128 (Palearctic species).

Taxonomy: Masner, 1964. Acta Soc. Ent. Cechoslov. 61: 146-148.

Biology: Marchal, 1906. Arch. de Zool. Expt. et Gen. 34: 537-573. — Adler, 1908. Ztschr. f. Wiss. Insektenbiol. 4: 306-307. — Myers, 1927. Bul. Ent. Res. 18: 129-133.

americanum (Ashmead). Fla. (Jacksonville).

Allotropa americana Ashmead, 1887. Canad. Ent. 19: 125. ♂.

Monocrita melanostrophia Ashmead, 1887. Canad. Ent. 19: 126. ♀.

Acerota caryae Ashmead, 1887. Canad. Ent. 19: 128. ♀, ♂.

belonocnemae (Ashmead). Fla. (Jacksonville). Host: *Belonocnema treatae* Mayr gall.

Metaclisis belonocnemae Ashmead, 1887. Canad. Ent. 19: 125. ♀.

californicum Ashmead. Calif. (Los Angeles County). Host: Cecidomyiid gall-maker on

Thelypodium integrifolium.

Inostemma californica Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 257, 259. ♀, ♂.

cecidomyiae (Ashmead). Calif. (Los Angeles County). Host: Cecidomyiid gall-maker on

Ephedra californica.

Acerota cecidomyiae Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 260, 261. ♂.

horni Ashmead. Fla. (Jacksonville).

Inostemma Horni Ashmead, 1887. Canad. Ent. 19: 126. ♀, ♂.

leguminicolae Fouts. N. Y. (Ithaca). Host: *Dasineura leguminicola* (Lint.).

Inostemma leguminicolae Fouts, 1923. Ent. Soc. Wash., Proc. 25: 64. ♀.

leonardi (Fouts). N. Y. (McLean Bogs).

Acerota leonardi Fouts, 1925. Ent. Soc. Wash., Proc. 27: 147. ♂.

lintneri Ashmead. Ont., N. Y., D. C.

Inostemma Lintneri Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 257, 259. ♀.

packardi Ashmead. Fla. (Jacksonville).

Inostemma Packardi Ashmead, 1887. Canad. Ent. 19: 127. ♀.

rileyi Ashmead. Fla. (Jacksonville).

Inostemma Rileyi Ashmead, 1887. Canad. Ent. 19: 127. ♀.

Genus ISOSTASIUS Foerster

Isostasius Foerster, 1856. Hym. Stud., v. 2, pp. 106, 109.

Type-species: *Platygaster punctiger* Nees. Monotypic.

Monocrita Foerster, 1856. Hym. Stud., v. 2, pp. 106, 109.

Type-species: *Inostemma atinas* Walker. Monotypic.

Trisinostemma Kieffer, 1914. In Andre, Spec. Hym. Eur. Alg., v. 11, p. 357.

Type-species: *Inostemma braesia* Walker. Orig. desig.

Taxonomy: Masner, 1965. Brit. Mus. (Nat. Hist.), Bul., Ent., Sup. 1, p. 130.

fuscipennis Ashmead. D. C.

Isostasius fuscipennis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 255. ♀.

musculus Ashmead. Fla. (Jacksonville).

Isostasius musculus Ashmead, 1887. Canad. Ent. 19: 126. ♀.

Genus TETRABAEUS Kieffer

Tetrabaesus Kieffer, 1912. In Andre, Spec. Hym. Eur. Alg., v. 11, p. 87.

Type-species: *Aphanomerus americanus* Brues. Orig. desig.

Crabroborus Muesebeck, 1963. Beitr. z. Ent. 13: 391.

Type-species: *Crabroborus krombeini* Muesebeck. Orig. desig.

Taxonomy: Masner, 1964. Acta Soc. Ent. Cechoslov. 61: 148-149.

americanus (Brues). Que., Md., Wis. Host: *Ectemnius* (*Hypocraebro*) *paucimaculatus* (Pack.),

Euplilis (*Corynopus*) *rufigaster* (Pack.), *E. (C.) coarctata modesta* (Roh.).

Aphanomerus americanus Brues, 1908. Wis. Nat. Hist. Soc., Bul. 6: 156. ♀.

Crabroborus krombeini Muesebeck, 1963. Beitr. z. Ent. 13: 392. ♀, ♂.

Biology: Krombein, 1964. Biol. Soc. Wash., Proc. 77: 104-108, fig. 11.

Genus ACEROTELLA Masner

Acerotella Masner, 1964. Acta Soc. Ent. Cechoslov. 61: 148.

Type-species: *Acerota evanescens* Kieffer. Orig. desig.

No North American species of *Acerotella* have been described, but the U. S. National Museum of Natural History has isolated specimens of the genus from Maine, New York, Maryland, and Michigan.

Genus ALLOTROPA Foerster

Allotropa Foerster, 1856. Hym. Stud., v. 2, pp. 106, 109.

Type-species: *Inostemma mecrida* Walker. Monotypic.

The species of *Allotropa* are parasites of mealybugs. Some seem to be important in the control of certain pest species.

ashmeadi Muesebeck. Conn., Md., Va., La. Host: *Pseudococcus comstocki* (Kuw.), *Ferrisia virgata* (Ckll.), *Phenacoccus* sp., *Puto cupressi* (Coleman).

Iphitracelus americanus Ashmead, 1891 (1890). Ent. Soc. Wash., Proc. 2: 58. *Nom. nud.*

- Iphitrachelus* (!) *americanus* Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 250. ♂. Preocc. by *Allotropia americana* Ashmead, 1887, which is now in *Inostemma*.
Allotropia ashmeadi Muesebeck, 1939. Canad. Ent. 71: 159. N. name.
burrelli Muesebeck. Estab. in Conn., Del., Pa., Va., W. Va., Ohio. Introd. from Japan. Host: *Pseudococcus comstocki* (Kuw.).
Allotropia burrelli Muesebeck, 1942. Brooklyn Ent. Soc., Bul. 37: 170. ♀, ♂.
 Biology: Clancy, 1944. Jour. Agr. Res. 69: 159-167. — Clausen, 1956. U. S. Dept. Agr., Tech. Bul. 1139: 74-75.
citri Muesebeck. Released and recovered in Calif. but doubtfully estab. Introd. from So. China. Host: *Planococcus citri* (Risso).
Allotropia citri Muesebeck, 1954. Brooklyn Ent. Soc., Bul. 49: 18. ♀, ♂.
convexifrons Muesebeck. Conn., N. Y., N. J., Va.; Japan, USSR. Host: *Pseudococcus comstocki* (Kuw.), *P. longispinus* (Targ.-Tozz.).
Allotropia convexifrons Muesebeck, 1942. Brooklyn Ent. Soc., Bul. 37: 171. ♀, ♂.
 Biology: Garman, Brigham, Schread and Smith, 1943. Conn. State Agr. Expt. Sta., Bul. 472: 232. — Haeussler and Clancy, 1944. Jour. Econ. Ent. 37: 503-509. — Shenderovskaya, 1967. Zashch. Rast. 12: 51. (In Russian).
merrilli Muesebeck. Fla., La. Host: *Trionymus* sp. on bald cypress.
Allotropia merrilli Muesebeck, 1954. Brooklyn Ent. Soc., Bul. 49: 20. ♀, ♂.
utilis Muesebeck. N. S., N. H., Vt., Ont., B. C.; Japan. Host: *Phenacoccus aceris* (Sign.), *P. pergandeii* Ckll.
Allotropia utilis Muesebeck, 1939. Canad. Ent. 71: 158. ♀, ♂.
 Biology: Gilliatt, 1939. Canad. Ent. 71: 160-163. — Marshall and Pickett, 1944. Canad. Ent. 76: 19. — Wishart, 1947 (1946). Ontario Ent. Soc., 77th Ann. Rpt., p. 36. — McLeod, 1954. Ent. Soc. Brit. Columbia, Proc. 50: 19. — Murakami, 1962. Kyushu Univ. Facul. Agr., Sci. Bul. 19: 390-402. — Murakami, 1963. Kyushu Univ. Facul. Agr., Sci. Bul. 20: 229-240.

TRIBE IPHITRACHELINI

The members of this group are set off sharply from the remainder of the Inostemmatinae by their 4-segmented tarsi. Nothing is known concerning their biology or host relations.

- Taxonomy: Masner, 1957. Acta Soc. Ent. Cechoslov. 54: 54-61. — Hellen, 1968. Notulae Ent. 48: 45. — Kozlov, 1970. Ent. Obozr. 49: 222 (English transl.: Ent. Rev. 49: 124).

Genus IPHITRACHELUS Walker

Iphitrachelus Walker, 1835. Ent. Mag. 3: 273.

Type-species: *Iphitrachelus lar* Walker. Monotypic.

Taxonomy: Jackson, 1966. Ent. Soc. Wash., Proc. 68: 265-268.

foutsii Jackson. Md. (Cabin John).

Iphitrachelus foutsii Jackson, 1966. Ent. Soc. Wash., Proc. 68: 265. ♀.

SUBFAMILY SCELIOTRACHELINAE

Two genera of this group occur in North America. One of these, *Fidiobia* Ashmead, has generally been placed in the Inostemmatinae; the other, *Amitus* Haldeman, in the Platygastriinae. In the more recent treatments of these genera, however, the two are considered as being closely allied and as belonging in a distinct section of the family which is currently called the subfamily Sceliotrachelinae.

- Taxonomy: Brues, 1909 (1908). In Wytsman, Gen. Ins., fasc. 80, pp. 12-13. — Szabo, 1959. Mus. Natl. Hungarici, Ann. Hist.-Nat. 51: 389-396 (proposal of tribal name Amitini for this group). — Masner, 1964. Psyche 71: 8-11. — Kozlov, 1970. Ent. Obozr. 49: 222-223 (English transl.: Ent. Rev. 49: 124-125).

Genus FIDIOBIA Ashmead

Fidiobia Ashmead, 1894. Cincinnati Soc. Nat. Hist., Jour. 17: 170.

Type-species: *Fidiobia flavipes* Ashmead. Monotypic.

Rosneta Brues, 1908. Wis. Nat. Hist. Soc., Bul. 6: 157.

Type-species: *Rosneta tritici* Brues. Orig. desig.

Triclavus Brethes, 1916. Buenos Aires Mus. Nac. de Hist. Nat., An. 27: 411.

Type-species: *Triclavus bonariensis* Brethes. Monotypic.

Platyllostropa Szelenyi, 1938. Mus. Natl. Hungarici, Ann. Hist.-Nat. 31 (Zool.): 126.

Type-species: *Platyllostropa gallicola* Szelenyi. Orig. desig.

The species of *Fidiobia*, for which reliable rearing records are available, are parasitic in the eggs of Coleoptera (Curculionidae and Chrysomelidae).

drakei (Ogloblin). Iowa (Ames).

Triclavus drakei Ogloblin, 1944. Ent. Soc. Wash., Proc. 46: 156. ♀.

flavipes Ashmead. N. Y., Pa., Ohio. Host: *Fidia viticida* Walsh.

Fidiobia flavipes Ashmead, 1894. Cincinnati Soc. Nat. Hist., Jour. 17: 171. ♀.

Rosneta tritici Brues, 1908. Wis. Nat. Hist. Soc., Bul. 6: 157. ♀.

rugosifrons Crawford. Pa., Ind. Host: *Hypera punctata* (F.).

Fidiobia rugosifrons Crawford, 1917 (1916). Insector Inscitiae Menstruus 4: 141. ♀, ♂.

Genus AMITUS Haldeman

Amitus Haldeman, 1850. Amer. Jour. Sci. (2)9: 109.

Type-species: *Amitus aleurodinis* Haldeman. Monotypic.

Zacrita Foerster, 1878. Naturh. Ver. Rheinlande, Verh. 35: 46.

Type-species: *Zacrita longicornis* Foerster. Orig. desig.

Passalida Brethes, 1914. Nunquam otiosus, Buenos Aires, p. 2.

Type-species: *Passalida spinifera* Brethes. Orig. desig.

The species of this genus, of which the host relations are known, are parasites of Aleyrodidae.

Taxonomy: Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 8-10. — De Santis, 1941. Soc. Brasil.

Agron., Bol. 4: 5. — Debauche, 1947. Soc. Ent. de Belg., Bul. et Ann. 83: 282. — Szabo, 1959.

Mus. Natl. Hungarici, Ann. Hist.-Nat. 51: 389-390. — Masner, 1964. Psyche 71: 9. — Hellen, 1968. Notulae Ent. 48: 46.

aleurodinis Haldeman. Mass., Conn., Pa., N. J., D. C., Fla., Ill., Calif. Host: *Tetraleurodes mori* (Quaint.), *Trialeurodes fernaldi* (Morrill), *Aleuroplatus plumosus* (Quaint.), *Aleurochiton forbesii* (Ashm.).

Amitus aleurodinis Haldeman, 1850. Amer. Jour. Sci. (2)9: 110. ♀, ♂.

Elaptus (!) *aleurodis* Forbes, 1885. Ill. State Entomologist, Rept. 14: 110. ♀.

Anaphes mellicornis Ashmead, 1887. Canad. Ent. 19: 194. ♀.

Taxonomy: Gahan, 1927. U. S. Natl. Mus., Proc. 71 (4): 39.

arcturus Whittaker. B. C. (Hollyburn).

Amitus arcturus Whittaker, 1930. Ent. Soc. Wash., Proc. 32: 69. ♀, ♂.

spiniferus (Brethes). Tex.; Mex., Brazil, Argentina. Host: *Aleurothrixus floccosus* (Maskell).

Passalida spiniferus Brethes, 1914. Nunquam otiosus, Buenos Aires, 1914, p. 3.

SUBFAMILY PLATYGASTRINAE

The species of this subfamily are essentially parasites of Cecidomyiidae; apparently very rare-cynipid or tenthredinid gall-makers are the hosts. Some species are polyembryonic.

Revision: Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 1-145 (North American species).

Taxonomy: Kozlov, 1970. Ent. Obozr. 49: 223-224 (English transl.: Ent. Rev. 49: 125-126).

Biology: Marchal, 1906. Arch. de Zool. Expt. et Gen. 34: 573-627.

Genus METANOPEDIAS Brues

Metanopedias Brues, 1910. Amer. Mus. Nat. Hist., Bul. 28: 79.

Type-species: *Metanopedias sicarius* Brues. Monotypic.

Taxonomy: Jackson, 1966. Ent. Soc. Amer., Ann. 59: 734-736. —Jackson and Masner, 1966. Canad. Ent. 98: 1214-1219.

brunneipes (Ashmead). Throughout the U. S. and southeastern Canada; Mexico, Costa Rica, and the Caribbean. Host: Apparently various cecidomyiid gall-makers.

Trichacis brunneipes Ashmead, 1887. Canad. Ent. 19: 131. ♀.

Trichasis (!) *rubicola* Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 295, 296. ♀, ♂.

Trichasis (!) *arizonensis* Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 295, 296. ♀, ♂. Preocc.

by *Isorhombus arizonensis* Ashmead, 1893, when the latter was placed in *Trichacis*.

Metanopiedias sicarius Brues, 1910. Amer. Mus. Nat. Hist., Bul. 28: 79. ♀.

Genus TRICHACIS Foerster

Trichacis Foerster, 1856. Hym. Stud., v. 2, pp. 108, 115.

Type-species: *Platygaster pisis* Walker. Desig. by Ashmead, 1893.

Trichasis Thomson, 1859. Ofvers. Kongl. Vetensk.-Akad.. Forh. 16: 70, 78. Emend.

Taxonomy: Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 13-18.

Biology: Marchal, 1906. Arch. de Zool. Expt. et Gen. 34: 548-557 (Development of the European *T. remulus* (Walker) as a parasite of the Hessian fly, *Mayetiola destructor* (Say)).

arizonensis (Ashmead). Ariz. (Ft. Huachuca).

Isorhombus arizonensis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 277. ♀.

cornicola (Ashmead). Mo. (Kirkwood). Host: Cecidomyiid gall-maker on *Cornus paniculata*.

Synopeas cornicola Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 286, 288. ♀, ♂.

cornuta Fouts. Tex. (Brownwood).

Trichacis cornuta Fouts, 1925. Ent. Soc. Wash., Proc. 27: 93. ♀.

rufipes Ashmead. D. C., Va., Fla., Mo.

Trichasis (!) *rufipes* Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 295. ♀, ♂.

texana Fouts. Tex. (Brownwood).

Trichacis texana Fouts, 1925. Ent. Soc. Wash., Proc. 27: 94. ♀.

virginiensis Ashmead. Va. (Arlington).

Trichasis (!) *virginiensis* Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 295, 297. ♀.

Genus ISOCYBUS Foerster

Isocybus Foerster, 1856. Hym. Stud., v. 2, pp. 108, 114.

Type-species: *Platygaster grandis* Nees. Desig. by Ashmead, 1893.

Revision: Kieffer, 1926. Das Tierreich, Lief. 48, pp. 718-732.

Taxonomy: Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 327-330. —Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 10-12.

auripes (Provancher). Que. (Cap Rouge).

Trichacis auripes Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 403. "♀" = ♂.

Taxonomy: Masner, 1969. Nat. Canad. 96: 783 (Lectotype selected).

canadensis (Provancher). Que., Ont., Mich., Iowa, Tex., Colo. The distribution and synonymy shown here are from the literature and seem open to some doubt.

Platygaster Canadensis Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 181. ♂.

Monocrita Canadensis Ashmead, 1887. Canad. Ent. 19: 126. "♀" = ♂.

Isocybus nigriclavus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 328. ♀.

Taxonomy: Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 329. —Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 11-12. —Masner, 1969. Nat. Canad. 96: 780.

Genus PLATYGASTER Latreille

Platygaster Latreille, 1809. Gen. Crust. Ins., v. 4, p. 31.

Type-species: *Scelio ruficornis* Latreille. Monotypic.

Epimeces Westwood, 1833. Mag. Nat. Hist. 6: 421. Preocc. by Billberg, 1820.

Type-species: *Epimeces ensifer* Westwood. By elimination, Foerster, 1856.

Isorhombus Foerster, 1856. Hym. Stud., v. 2, pp. 107, 112, 113. No species. —Ashmead, 1887. Canad. Ent. 19:129. One species.

Type-species: *Isorhombus hyalinipennis* Ashmead. First included species.

Hypocampus Foerster, 1856. Hym. Stud., v. 2, pp. 108, 115. No species. —Thomson, 1859. Ofvers. Kongl. Vetensk.-Akad., Forh. 16: 70, 82. Three species.

Type-species: *Hypocampus hyalinata* Thomson. Desig. by Ashmead, 1903.

Polygnotus Foerster, 1856. Hym. Stud., v. 2, pp. 108, 115.

Type-species: *Platygaster striolatus* Nees. Orig. desig.

Aneuron Brues, 1910. Wis. Nat. Hist. Soc., Bul. 8: 49.

Type-species: *Aneuron anormis* Brues. Orig. desig.

Miscocyclus Kieffer, 1914. In Andre, Spec. Hym. Eur. Alg., v. 11, pp. 353, 362.

Type-species: *Platygaster ornatus* Kieffer. Monotypic.

Parapimeces Kieffer, 1926. Das Tierreich, Lief. 48, pp. xxxiv, 563, 760. N. name for *Epimeces* Westwood.

Revision: Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 23-108. —Kieffer, 1926. Das Tierreich, Lief. 48, pp. 732-843.

abicolis MacGown and Osgood. Maine. Host: *Dasineura balsamicola* (Lint.).

Platygaster abicolis MacGown and Osgood, 1971. Canad. Ent. 103: 1143. ♀, ♂.

aciculata Ashmead. Pa.

Platygaster aciculatus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 323, 326. ♂.

actinomeridis (Ashmead). D. C. Host: Cecidomyiid gall-maker on *Verbesina alternifolia*.

Polygnotus actinomeridis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 302, 317. ♀.

affinis Fouts. Tex. (Brownwood).

Platygaster affinis Fouts, 1925. Ent. Soc. Wash., Proc. 27: 94. ♀.

alnicola (Ashmead). D. C. Host: *Dasineura serrulatae* (O. S.).

Polyneues alnicola Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 278, 283. ♀, ♂.

americana (Ashmead). Fla.

Epimeces americana Ashmead, 1887. Canad. Ent. 19: 129. ♀, (♂ misdet.).

aneura (Provancher). Que.

Aneurynchus (!) *aneurus* Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 176.

"♀" = ♂.

Taxonomy: Masner, 1969. Nat. Canad. 96: 777.

anormis (Brues). N. Y., Mass.

Aneuron anormis Brues, 1910. Wis. Nat. Hist. Soc., Bul. 8: 49. ♀, ♂.

Taxonomy: Masner, 1965. Psyche 72: 301 (Lectotype designated).

antennariae (Ashmead). Wis. (Milwaukee). Host: *Rhopalomyia antennariae* (Whlr.).

Synopeas antennariae Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 286, 288. ♀, ♂.

anura Fouts. Tex. (Brownwood).

Platygaster anura Fouts, 1925. Ent. Soc. Wash., Proc. 27: 94. ♀, ♂.

aphidis Ashmead. N. Y. (Richfield Springs).

Platygaster aphidis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 323, 325. ♂.

artemisiae (Ashmead). Calif. (Lancaster). Host: Cecidomyiid on *Artemisia californica*.

Polygnotus artemisiae Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 301, 309. ♀, ♂.

astericola (Ashmead). N. H. (Holderness). Host: Cecidomyiid gall-maker on *Aster*.

Polygnotus astericola Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 302, 320. ♀, ♂.

asynaptae (Ashmead). Ill. (Maywood). Host: *Asynapta* sp. on willow.

Polygnotus asynaptae Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 302, 315. ♀, ♂.

atrae Fouts. Ariz. (Fort Grand). Host: *Procecidochares atra* (Loew).

Platygaster atrae Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 28, 87. ♀, ♂.

atriplicis (Ashmead). Calif., Idaho. Host: Cecidomyiid gall-maker on *Atriplex canescens*.

Polygnotus atriplicis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 304, 308. ♀, ♂.

- attenuata* Walker, Ont.; Europe. Host: *Dasineura alopecuri* (Reuter).
Platygaster attenuatus Walker, 1835. Ent. Mag. 3: 245. ♀, ♂.
- Biology: Gilbert, 1935. Canad. Ins. Pest Rev. 13: 88. —Graham, 1965. Canada Dept. Agr., Inform. Bul. 4: 54.
- baccharicola* (Ashmead). Fla., Miss., La. Host: Originally cited as *Cecidomyia baccharicola* Ashm. MS.
Polygnotus baccharicola Ashmead, 1887. Canad. Ent. 19: 132. ♀, ♂.
- burkei* (Rohwer). Calif. (Placerville). Host: Cecidomyiid on *Pinus ponderosa*.
Polygnotus burkei Rohwer, 1917. U. S. Natl. Mus., Proc. 53: 170. ♀, ♂.
- californica* (Ashmead). Calif., Idaho. Host: *Rhopalomyia californica* Felt.
Polygnotus californicus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 302, 321. ♀, ♂.
- caryae* Ashmead. N. Y. (Nyack). Host: *Caryomyia holotricha* (O. S.).
Platygaster caryae Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 323. ♀, ♂.
- coloradensis* (Ashmead). Colo., Utah, Idaho. Host: *Rhopalomyia betheliana* Ckll.
Polygnotus coloradensis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 302, 320. ♀, ♂.
- columbiana* Fouts. Mo. (Cadet). Host: Cecidomyiid in elder flower bud.
Polygnotus alnicola Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 301, 310. ♀. Preocc. by
Polymecus alnicola Ashmead, 1893, p. 283, when this was placed in *Platygaster*.
Platygaster columbiana Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 29, 95. N. name.
- compressiventris* (Ashmead). D. C.
Polymecus compressiventris Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 278, 282. ♀.
- confusa* Fouts. Colo.
Ectadius pallipes Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 9. ♀, ♂. Preocc. by Say, 1829.
Ectadius pallidipes Dalla Torre, 1898. Cat. Hym., v. 5, p. 486. Emend. Preocc. by Dalla Torre, 1898.
Platygaster confusa Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 26, 44. N. name.
- cynipicola* (Ashmead). Va. (Arlington). Host: *Neuroterus quercusbatatus* (Fitch).
Polygnotus cynipicola Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 302, 314. ♀, "♂" = ♀.
- diplosidis* (Ashmead). Mass. to N. C. and w. to Calif. Host: *Cecidomyia piniinopsis* O. S.
Polygnotus diplosidis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 300, 306. ♀.
Polygnotus pinicola Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 301, 307. ♀, ♂.
- Taxonomy: Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 58-60.
- distincta* Fouts. Calif. Host: *Thecodiplosis piniradiatae* (Snow and Mills), *Cecidomyia resinicoloides* Williams.
Platygaster distincta Fouts, 1926. Ent. Soc. Wash., Proc. 28: 176. ♂.
- errans* Fouts. Fla., Ga., La.
Platygaster errans Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 29, 93. ♀.
- erythropus* (Ashmead). Ont. (Ottawa).
Metacalis erythropus Ashmead, 1888. Canad. Ent. 20: 51. "♀" = ♂.
- eurotiae* (Ashmead). Calif. Host: Cecidomyiid gall-maker on *Eurotia*.
Polygnotus eurotiae Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 302, 315. ♀.
- euurae* (Ashmead). Mo. (St. Louis). Host: *Enura s-nodus* Walsh.
Polygnotus euurae Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 304, 318. ♂.
- exigua* Fouts. Colo. Host: *Rhabdophaga coloradensis* Felt on *Salix exigua*.
Platygaster exiguae Fouts, 1926. Ent. Soc. Wash., Proc. 28: 175. ♀.
- feltii* Fouts. Tex. Host: *Walshomyia texana* Felt.
Platygaster feltii Fouts, 1920. Ent. Soc. Wash., Proc. 22: 70. ♀, ♂.
- filicaudis* Fouts. Fla. (Paradise Key).
Platygaster filicaudis Fouts, 1925. Ent. Soc. Wash., Proc. 27: 95. ♀, ♂.
- filicornis* (Ashmead). Ont., N. H., D. C., Wis. Host: *Thecodiplosis piniresinosae* Kearby and Benjamin.
Polygnotus filicornis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 302, 321. ♀, ♂.
- flavitsarsis* Fouts. Md. (Glen Echo).
Platygaster flavitsarsis Fouts, 1926. Ent. Soc. Wash., Proc. 28: 176. ♀.

floridensis Ashmead. Fla. (Jacksonville).

Platygaster floridensis Ashmead, 1887. Canad. Ent. 19: 132. ♀.

fumipennis Fouts. Calif. (San Francisco). Host: Cecidomyiid gall-maker on *Baccharis pilularis*.

Platygaster fumipennis Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 29, 87. ♀, ♂.

fuscipennis Fouts. Md. (Glen Echo).

Platygaster fuscipennis Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 26, 39. ♀.

gahani Fouts. Calif., Oreg.

Platygaster gahani Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 26, 55. ♀.

herrickii Packard. Ont. to N. C. and w. at least to Nebr. Host: *Mayetiola destructor* (Say).

Platygaster herrickii Packard, 1880. U. S. Ent. Comn., Bul. 4: 20, 21.

Taxonomy: Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 47-48. —Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 14-18.

Biology: Hill and Emery, 1937. Jour. Agr. Res. 55: 199-213. —Hill, Pinckney and Udine, 1939. U. S. Dept. Agr., Tech. Bul. 689: 1-15. —Hill and Pinckney, 1940. U. S. Dept. Agr., Tech. Bul. 715: 4, 11. —Hill, 1953. U. S. Dept. Agr., Circ. 923: 3.

hiemalis Forbes. Occurs throughout the wheat-growing areas of the United States from N. Y. and Pa. to Oreg. and in southern Canada; also Europe and No. Africa. Host: *Mayetiola destructor* (Say).

Platygaster herrickii Fitch, 1866. Cultiv. and Country Gent. 28: 354. *Nom. nud.*

Platygaster minutus Lindeman, 1887. Soc. Imp. Nat. Moscou, Bul. (2) 1: 188. Preocc. by Zetterstedt, 1838.

Platygaster hiemalis Forbes, 1888. Psyche 5: 39. ♀, ♂.

Platygaster minutula Dalla Torre, 1898. Cat. Hym., v. 5, p. 474. N. name for *P. minutus* Lindeman.

Taxonomy: Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 4-10. (See this paper for detailed references to the early literature on *P. hiemalis*).

Biology: Leiby and Hill, 1923. Jour. Agr. Res. 25: 337-349. —Hill, 1926. Jour. Agr. Res. 32: 261-275. —Hill, Pinckney and Udine, 1939. U. S. Dept. Agr., Tech. Bul. 689: 1-15. —Hill and Pinckney, 1940. U. S. Dept. Agr., Tech. Bul. 715: 3-4, 11. —Johannsen and Butt, 1941. Embryology of insects and myriapods....., pp. 311-316. —Hill, 1953. U. S. Dept. Agr., Circ. 923: 3.

huachucae (Ashmead). Ariz. (Ft. Huachuca). Ecology: From gall on sunflower.

Polygnotus huachucae Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 302, 316. ♀, ♂.

hyalinipennis (Ashmead). N. Y., Fla. Host: *Caryomyia tubicola* (O. S.).

Isorhombus hyalinipennis Ashmead, 1887. Canad. Ent. 19: 129. ♀.

kalmiae Fouts. Md. (Glen Echo).

Platygaster kalmiae Fouts, 1925. Ent. Soc. Wash., Proc. 27: 95. ♂.

laevicollis (Ashmead). D. C., La.

Polygnotus laevicollis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 304, 320. ♂.

lampronota Fouts. Idaho, Calif. Host: *Rhopalomyia californica* Felt.

Platygaster lampronota Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 26, 48. ♀, ♂.

Biology: Douth, 1961. Ent. Soc. Amer., Ann. 54: 51.

laticeps (Ashmead). Fla. (Jacksonville).

Polygnotus laticeps Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 311. ♂, (♀ misdet.).

leguminicolae Fouts. Oreg. (Forest Grove). Host: *Dasineura leguminicola* (Lint.).

Platygaster leguminicolae Fouts, 1920. Ent. Soc. Wash., Proc. 22: 69. ♀, ♂.

linearis Fouts. S. Dak., Iowa. Host: *Lasioptera echinochloa* Felt.

Polymecus lasiopterae Gahan, 1917. U. S. Natl. Mus., Proc. 53: 217. ♀, ♂. Preocc. by Kieffer and Jorgensen, 1910.

Platygaster linearis Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 29, 93. N. name.

longiventris (Ashmead). Fla. Host: *Chilophaga gyrantis* Gagne.

Isocybus longiventris Ashmead, 1887. Canad. Ent. 19: 130. ♀.

- lucida** Fouts. Colo., Calif., Alaska. Host: Cecidomyiids in cones of *Picea engelmannii*, *P. sitchensis* and *P. glauca*.
Platygaster lucida Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 26, 54. ♀.
- lupinicola** (Ashmead). Calif. (San Francisco). Host: Cecidomyiid gall-maker on *Lupinus*.
Polymecus lupinicola Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 278, 281. ♀, (♂ misdet.).
- mainensis** MacGown and Osgood. Maine, N. H. Host: *Dasineura balsamicola* (Lint.).
Platygaster mainensis MacGown and Osgood, 1971. Canad. Ent. 103: 1144. ♀, ♂.
- marylandica** Fouts. Md. (Glen Echo).
Platygaster marylandica Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 28, 85. ♀, ♂.
- melanocera** (Ashmead). Fla.
Synopeas melanocera Ashmead, 1887. Canad. Ent. 19: 130. ♀.
Platygaster gracilis Ashmead, 1887. Canad. Ent. 19: 132. ♂.
- melliscapus** (Ashmead). D. C.
Polymecus melliscapus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 278, 282. ♀.
- minutissima** Fouts. Tex. (Brownwood).
Platygaster minutissima Fouts, 1925. Ent. Soc. Wash., Proc. 27: 96. ♂.
- nigricoxa** Fouts. Calif. (San Francisco). Host: *Dasineura lupini* Felt.
Platygaster nigricoxa Fouts, 1925. Ent. Soc. Wash., Proc. 27: 147. ♀, ♂.
- nigrifemur** (Ashmead). Colo.
Ectadius nigrifemur Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 10. ♀, ♂.
- nigripes** (Ashmead). Colo. (Greeley).
Monocrita nigripes Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 9. ♂.
- noveboracensis** (Brues). N. Y. (Albany). Ecology: From a cecidomyiid gall.
Ertitrissomerus noveboracensis Brues, 1910. Wis. Nat. Hist. Soc., Bul. 8: 48. ♂.
- obscuripennis** Ashmead. Ont., N. Y., N. H., Pa. Host: *Mayetiola rigidae* (O. S.).
Platygaster obscuripennis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 323, 325. ♂, (♀ misdet.).
- oenone** Fouts. B. C. (Revelstoke).
Platygaster oenone Fouts, 1925. Ent. Soc. Wash., Proc. 27: 149. ♀.
- opaca** Ruthe. Greenland; Iceland, Europe.
Platygaster opacus Ruthe, 1859. Stettin. Ent. Ztg. 20: 313.
- pallida** Fouts. N. Y. (McLean Bogs).
Platygaster pallida Fouts, 1925. Ent. Soc. Wash., Proc. 27: 148. ♂.
- pallipes** Say. U. S.
Platygaster pallipes Say, 1828. Contrib. Maclur. Lyc. Phila. 1: 80.
Isocybus pallidipes Dalla Torre, 1898. Cat. Hym., v. 5, p. 470. Emend.
- pentatoma** (Ashmead). Va. (Arlington).
Anopediast pentatomus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 292. ♀.
- perplexa** Fouts. Colo. (Grant).
Platygaster perplexa Fouts, 1925. Ent. Soc. Wash., Proc. 27: 96. ♂.
- picipes** (Ashmead). D. C.
Polymecus picipes Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 278, 282. ♀.
- pini** Fouts. Wis., Mo., Colo. Host: Cecidomyiid on *Pinus edulis*, *Lestodiplosis juniperina* (Felt).
Platygaster pini Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 30, 99. ♀, ♂.
- Biology: Haseman and McLane, 1940. Ent. Soc. Amer., Ann. 33: 614.
- pluto** (Ashmead). Fla. (Jacksonville).
Hypocampsis Pluto Ashmead, 1887. Canad. Ent. 19: 131. ♀.
- prolata** MacGown. Ga. (Clark County).
Platygaster prolata MacGown, 1971. Canad. Ent. 103: 1637. ♀.
- relativa** Fouts. N. H. (Holderness).
Platygaster relativa Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 30, 104. ♀.
- rohweri** Fouts. Oreg., Calif. Ecology: From cones of *Abies concolor* and *Pinus lambertiana*.
Platygaster rohweri Fouts, 1924. U. S. Natl. Mus., Proc. 63: 30, 100. ♀, ♂.

- rubi** (Ashmead). N. J., Va. Host: *Lasioptera farinosa* (O. S.).
Polygnotus rubi Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 302, 315. ♀.
- rufidens** Fouts. Md. (Glen Echo).
Platygaster rufidens Fouts, 1925. Ent. Soc. Wash., Proc. 27: 97. ♂.
- rufipes** (Ashmead). Va. (Arlington).
Synopeas rufipes Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 286, 287. ♀.
- salicicola** (Ashmead). Calif. (Los Angeles). Host: Cecidomyiid gall-maker on willow.
Polygnotus salicicola Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 300, 305. ♀, ♂.
- scorpioides** Muesebeck and Walkley. Ont.
Ectadinus canadensis Ashmead, 1888. Canad. Ent. 20: 51. ♀. Preocc. by Provancher, 1887.
Platygaster scorpioides Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 714. N. name.
- scutellator** Fouts. Md. (Glen Echo).
Platygaster scutellator Fouts, 1925. Ent. Soc. Wash., Proc. 27: 96. ♂.
- semiglabra** (Girault). N. Y. Host: *Rhopalomyia hirtipes* (O. S.).
Polynectus semiglaber Girault, 1920. U. S. Natl. Mus., Proc. 58: 177. ♀, ♂.
- shastensis** Fouts. Oreg., Calif. Ecology: From cones of *Abies shastensis*.
Platygaster shastensis Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 26, 53. ♀.
- signata** Fouts. Tex. (Brownwood).
Platygaster signata Fouts, 1925. Ent. Soc. Wash., Proc. 27: 97. ♀.
- solidaginis** (Ashmead). Pa. to Fla. Host: *Asteromyia carbonifera* (O. S.), cecidomyiid gall-maker on *Solidago*.
Polygnotus solidaginis Ashmead, 1887. Canad. Ent. 19: 131. ♀, ♂.
Polygnotus angulatus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 304, 319. ♂.
- Taxonomy: Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 65-67. —Masner and Muesebeck, 1968. U. S. Natl. Mus. Bul. 270: 95.
- striaticeps** (Ashmead). Calif., Idaho. Host: Cecidomyiid gall-maker on *Bigelovia* or *Artemisia*.
Polygnotus striaticeps Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 301, 308. ♀, ♂.
- striaticollis** (Ashmead). Fla. (Jacksonville).
Polygnotus striaticollis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 304, 319. ♂.
- striatifrons** Fouts. Md. (Glen Echo).
Platygaster striatifrons Fouts, 1925. Ent. Soc. Wash., Proc. 27: 98. ♂.
- tacita** Fouts. Tex. (Brownwood).
Platygaster tacita Fouts, 1925. Ent. Soc. Wash., Proc. 27: 98. ♀.
- taylori** MacGown. Pa., Va. Host: *Lasioptera nodulosa* (Beutn.).
Platygaster taylori MacGown, 1974. Canad. Ent. 106: 437. ♀, ♂.
- texana** Fouts. Tex. (Uvalde).
Platygaster texana Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 28, 82. ♀, ♂.
- tumida** (Ashmead). D. C. Host: *Cincticornia symmetrica* (O. S.).
Polygnotus tumidus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 301, 310. ♀.
- utahensis** (Ashmead). Utah, Idaho. Host: Cecidomyiid gall-maker on *Artemisia tridentata*.
Polygnotus utahensis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 301, 314. ♂.
- Taxonomy: Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 68-69. —Masner and Muesebeck, 1968. U. S. Natl. Mus. Bul. 270: 96.
- vancouverensis** (Ashmead). B. C. (Vancouver Isl.).
Polynectus vancouverensis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 278, 281. ♀.
- variabilis** Fouts. N. C., Mo. Host: *Rhopalomyia carolina* Felt or *R. solidaginis* (Loew) on goldenrod.
Platygaster variabilis Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 30, 106. ♀, ♂.
- vernoniae** (Ashmead). Va. (Arlington). Ecology: From gall on *Vernonia noveboracensis*.
Polygnotus vernoniae Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 302, 317. ♀, ♂.
- virginiensis** (Ashmead). Mass., N. H., Pa., Md., D. C., Va. Host: *Thecodiplosis cupressiananassa* (O. S.).
Polygnotus virginiensis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 301, 309. ♀, ♂.

Polygnotus proximus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 301, 312. ♀, ♂.

Taxonomy: Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 77-79.

viticola (Ashmead). D. C. Host: *Lasioptera vitis* O. S.

Polygnotus viticola Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 301, 313. ♀, ♂.

websteri Fouts. Ohio.

Platygaster websteri Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 26, 50. ♀.

zossine Walker. N. Y., s. to Va. and w. to Iowa and Mo. Host: *Mayetiola destructor* (Say).

Platygaster zossine Walker, 1836. Ent. Mag. 3: 266. ♂.

Polygnotus zozini Marchal, 1897. Soc. Ent. de France, Ann. 66: 93. Emend.

Platygaster longicaudatus Kieffer, 1906. Soc. Sci. de Bruxelles, Ann. 30: 131. ♀, ♂.

Platygaster brevicandatus Kieffer, 1906. Soc. Sci. de Bruxelles, Ann. 30: 133. ♀, ♂.

Polygnotus vernalis Myers, 1917. U. S. Natl. Mus., Proc. 53: 256. ♀, ♂.

Taxonomy: Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 10-14.

Biology: Hill, 1922. Ent. Soc. Wash., Proc. 34: 111-113. — Hill, 1923. Jour. Agr. Res. 25: 31-42.

— Leiby and Hill, 1924. Jour. Agr. Res. 28: 829-839. — Hill, Pinckney and Udine, 1939. U. S.

Dept. Agr., Tech. Bul. 689: 8-9. — Hill and Pinckney, 1940. U. S. Dept. Agr., Tech. Bul. 715:

3-4, 11. — Hill, 1953. U. S. Dept. Agr., Circ. 923: 1-15.

Genus EUXESTONOTUS Fouts

Euxestonotus Fouts, 1925. Ent. Soc. Wash., Proc. 27: 98.

Type-species: *Platygaster error* Fitch. Orig. desig.

Eoxestonotus Debauche, 1947. Soc. Ent. de Belg., Bul. et Ann. 83: 267.

Type-species: *Eoxestonotus pini* Debauche. Orig. desig.

Taxonomy: Fouts, 1925. Ent. Soc. Wash., Proc. 27: 98-100 (Key to No. Amer. species).

— Ghesquiere, 1948. Soc. Ent. de Belg., Bul. et Ann. 84: 42-43. — Masner, 1964. Acta Soc.

Ent. Cechoslov. 61: 151-152.

brevicornis Fouts. Md., Ohio, Host: Cecidomyiid on phlox.

Euxestonotus brevicornis Fouts, 1925. Ent. Soc. Wash., Proc. 27: 99. ♀.

error (Fitch). Conn., N. Y., Pa., Md., D. C., Va., Ind. and possibly throughout the range of its host, the wheat midge. Host: *Sitodiplosis mosellana* Gehin.

Platygaster error Fitch 1861 (1860). N. Y. State Agr. Soc., Trans. 20: 838.

Taxonomy: Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 18-22.

Biology: Gahan, 1934 (1933). U. S. Dept. Agr., Misc. Pub. 174: 21-22.

flavipes Fouts. Md. (Glen Echo).

Euxestonotus flavipes Fouts, 1925. Ent. Soc. Wash., Proc. 27: 99. ♀.

rufidens Fouts. Pa. (Carlisle).

Euxestonotus rufidens Fouts, 1925. Ent. Soc. Wash., Proc. 27: 99. ♂.

Genus ERITRISSOMERUS Ashmead

Eritrissomerus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 363, 364, 398.

Type-species: *Eritrissomerus cecidomyiae* Ashmead. Orig. desig.

Revision: Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 19-23.

Taxonomy: Masner, 1964. Acta Soc. Ent. Cechoslov. 61: 150.

cecidomyiae Ashmead. Fla. (Jacksonville). Host: Cecidomyiid gall-maker on hickory.

Eritrissomerus cecidomyiae Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 299. ♀, ♂.

floridanus (Ashmead). Fla. (Jacksonville).

Polygnotus floridanus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 304, 318. "♂" = ♀.

pallipes Harrington. Que. (Hull).

Eritrissomerus pallipes Harrington, 1899. Roy. Soc. Canada, Trans. (2) 5: 191. ♀, ♂.

parvus Fouts. Md. (Cabin John).

Eritrissomerus parvus Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 19, 22. ♀.

Genus PIESTOPLEURA Foerster

Catillus Foerster, 1856. Hym. Stud., v. 2, pp. 111, 144. Preocc. by Brongniart, 1822.

Type-species: *Platygaster catillus* Walker. Monotypic.

Piestopleura Foerster, 1856. Hym. Stud., v. 2, p. 144. N. name.

Revision: Kieffer, 1926. Das Tierreich, Lief. 48, pp. 627-631.

Taxonomy: Debauche, 1947. Soc. Ent. de Belg., Bul. et Ann. 83: 272.

platygaster (Fouts). D. C.

Leptacis platygaster Fouts, 1925. Ent. Soc. Wash., Proc. 27: 100. ♀.

Taxonomy: Masner and Muesebeck, 1968. U. S. Natl. Mus. Bul. 270: 83.

Genus SYNOPEAS Foerster

Synopeas Foerster, 1856. Hym. Stud., v. 2, pp. 108, 114. No species. —Thomson, 1859.

Ofvers. Kongl. Vetensk-Akad., Forh. 16: 71. Thirteen species.

Type-species: *Synopeas inermis* Thomson. Desig. by Muesebeck and Walkley, 1951.

Ectadius Foerster, 1856. Hym. Stud., v. 2, pp. 108, 113, 114, 144.

Type-species: *Platygaster craterus* Walker. Monotypic.

Polymecus Foerster, 1856. Hym. Stud., v. 2, p. 144. N. name, unnecessarily proposed for

Ectadius Foerster, which Foerster thought to be preocc. by *Ectadium* E. Meyer in Botany.

Sactogaster Foerster, 1856. Hym. Stud., v. 2, pp. 108, 113.

Type-species: *Epimeces ventralis* Westwood. Desig. by Ashmead, 1893.

Synopius Ashmead, 1896. Zool. Soc. London, Proc. for 1895, p. 802. Error.

Dolichotrypes Crawford and Bradley, 1911. Ent. Soc. Wash., Proc. 13: 124.

Type-species: *Dolichotrypes hopkinsi* Crawford and Bradley. Orig. desig.

Taxonomy: Ghesquiere, 1948. Soc. Ent. de Belg., Bul. et Ann. 84: 44. —Masner, 1960. Rev. de

Zool. et de Bot. Africaines 62: 3-5. —Masner, 1964. Acta Soc. Ent. Cechoslov. 61: 149-150.

—Muesebeck and Masner, 1967. U. S. Dept. Agr., Agr. Monogr. 2, Sup. 2, pp. 302-304.

abdominator (Fouts). Tex. (Brownwood).

Leptacis abdominator Fouts, 1925. Ent. Soc. Wash., Proc. 27: 101. ♀.

aciculatum (Fouts). Md. (Glen Echo).

Leptacis aciculata Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 115, 134. ♀, ♂.

angustulum (Fouts). Md. (Glen Echo).

Leptacis angustula Fouts, 1925. Ent. Soc. Wash., Proc. 27: 100. ♀.

anomaliventris (Ashmead). N. H., Pa., Md., Fla., La.

Sactogaster anomaliventris Ashmead, 1887. Canad. Ent. 19: 130. ♀.

ashmeadii Dalla Torre. Colo. (Westcliffe).

Synopeas inermis Ashmead, 1890. Colo. Biol. Assoc., Bul. 1: 10. ♀. Preocc. by Thomson, 1859.

Synopeas ashmeadii Dalla Torre, 1898. Cat. Hym., v. 5, p. 483. N. name.

auripes (Ashmead). Va.

Polymecus auripes Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 278, 283. ♀.

bradleyi (Fouts). N. Y. (Ithaca).

Leptacis bradleyi Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 118, 132. ♀.

breviventris (Ashmead). D. C.

Leptacis breviventrtris Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 271, 273. ♀, (♂ misdet.).

carinator (Fouts). Tex. (Brownwood).

Leptacis carinator Fouts, 1925. Ent. Soc. Wash., Proc. 27: 101. ♀.

cynipsiphilum (Ashmead). Fla. (Jacksonville). Ecology: Reared from an oak gall.

Leptacis cynipsiphila Ashmead, 1887. Canad. Ent. 19: 129. ♀, (♂ misdet.).

dubiosum (Fouts). Tex. (Brownwood).

Leptacis dubiosa Fouts, 1925. Ent. Soc. Wash., Proc. 27: 101. ♂.

flavicornis (Ashmead). D. C.

Leptacis flavicornis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 271, 275. ♀, (♂ misdet.).

floridanum (Ashmead). Fla. (Jacksonville).

Leptacis floridanus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 271, 272. ♂, (♀ misdet.).

foutsi Masner. Md. (Cabin John).

Sactogaster longiventris Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 110, 111. ♀. Preocc. by Ashmead, 1893.

Synopeas foutsi Masner, 1967. In Krombein and Burks, U. S. Dept. Agr., Agr. Monog. 2, Sup. 2, p. 303. N. name.

globatum (Fouts). D. C.

Leptacis globata Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 11, 139. ♀, ♂.

hopkinsi (Crawford and Bradley). Mass., N. Y., W. Va., N. C., Fla.

Dolichotrypes hopkinsi Crawford and Bradley, 1911. Ent. Soc. Wash., Proc. 13: 124. ♀, ("♂" = ♀ of another species).

howardii (Ashmead). D. C.

Sactogaster Howardii Ashmead, 1888. Canad. Ent. 20: 52. ♀.

incertum (Ashmead). Fla. (Jacksonville).

Anopedias incertus Ashmead, 1887. Canad. Ent. 19: 130. ♀.

longiventre (Ashmead). D. C., Va.

Leptacis longiventris Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 271, 273. ♀, ♂.

maculipes (Ashmead). Fla. (Jacksonville).

Catillus maculipes Ashmead, 1887. Canad. Ent. 19: 128. ♀.

mucronatum (Fouts). Pa. (Carlisle).

Sactogaster mucronata Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 110, 114. ♀.

nigripes Ashmead. D. C.

Synopeas nigripes Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 286. ♂.

pennsylvanicum (Fouts). Pa., Ohio. Host: Cecidomyiid on phlox.

Leptacis pennsylvanica Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 117, 120. ♀.

pubescens (Ashmead). D. C., Ill.

Leptacis pubescens Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 271, 275. ♂.

punctatum (Ashmead). D. C., Va., Fla.

Leptacis punctatus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 271, 272. ♀, ♂.

rufiscapus Ashmead. Fla.

Synopeas rufiscapus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 286, 288. ♀, ♂.

rugosiceps (Kieffer). Va., Mich.

Leptacis rugiceps Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 271, 272. ♀, (♂ misdet.).

Preocc. by *Amblyaspis rugiceps* Ashmead, 1893, when both were placed in *Leptacis*.

Leptacis ashmeadi Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 117, 124. N. name. Preocc. by Dalla Torre, 1898.

Leptacis rugosiceps Kieffer, 1926. Das Tierreich, Lief. 48, pp. 637, 644. N. name.

striatifrons (Ashmead). Fla. (Jacksonville).

Leptacis striatifrons Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 271, 273. ♀.

texanum (Fouts). Tex. (Brownwood).

Leptacis texana Fouts, 1925. Ent. Soc. Wash., Proc. 27: 102. ♂.

varipes (Harrington). Que. (Hull).

Sactogaster varipes Harrington, 1899. Roy. Soc. Canada, Trans. (2) 5: 190. ♀, ♂.

Genus GASTROTRYPES Brues

Gastrotrypes Brues, 1922. Amer. Acad. Arts and Sci., Proc. 57: 270.

Type-species: *Gastrotrypes spatulatus* Brues. Orig. desig.

caudatus Brues. Mass. (Boston).

Gastrotrypes caudatus Brues, 1922. Amer. Acad. Arts and Sci., Proc. 57: 272. ♀.

Genus LEPTACIS Foerster

Leptacis Foerster, 1856. Hym. Stud., v. 2, pp. 107, 112.

Type-species: *Ichneumon tipulae* Kirby. Desig. by Ashmead, 1893.

Xestonotus Foerster, 1856. Hym. Stud., v. 2, pp. 107, 112. No species. — Ashmead, 1887.

Canad. Ent. 19: 128. One species. Preocc. by Leconte, 1853.

Type-species: *Xestonotus andriciphilus* Ashmead. First included species.

Ceratacis Thomson, 1859. Ofvers. Kongl. Vetensk-Akad., Forh. 16: 69, 78.

Type-species: *Ceratacis flavipes* Thomson. Monotypic.

Tricholeptacis Kieffer, 1914. In Andre, Spec. Hym. Eur. Alg., v. 11, p. 357.

Type-species: *Amblyaspis verticillatus* Ashmead. Orig. desig.

Xestonotidea Gahan, 1919. U. S. Natl. Mus., Proc. 56: 524. N. name for *Xestonotus* Foerster.

Proamblyaspis Kieffer, 1926. Das Tierreich, Lief. 48, pp. 561, 610.

Type-species: *Amblyaspis flavosignatus* Kieffer. Monotypic.

Axestonotus Kieffer, 1926. Das Tierreich, Lief. 48, pp. 561, 625. N. name for *Xestonotus* Foerster.

Proleptacis Kieffer, 1926. Das Tierreich, Lief. 48, pp. 562, 632.

Type-species: *Leptacis foersteri* Kieffer. Orig. desig.

Anacoryphe Debauche, 1947. Soc. Ent. de Belg., Bul. et Ann. 83: 247.

Type-species: *Anacoryphe orchymonti* Debauche. Orig. desig.

Mandraka Risbec, 1953. Inst. Sci. de Madagascar, Mem. 3: 343.

Type-species: *Mandraka pauliani* Risbec. Monotypic.

Revision: Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 115-126 (No. Amer. species). — Kieffer, 1926. Das Tierreich, Lief. 48, pp. 635-651 (World fauna). — Masner, 1960. Rev. de Zool. et de Bot. Africaines 62: 1-34 (African species).

aliena Fouts. Md. (Glen Echo).

Leptacis aliena Fouts, 1927. Ent. Soc. Wash., Proc. 29: 176. ♀, ♂.

americana (Ashmead). Que. to Fla.

Amblyaspis Americana Ashmead, 1887. Canad. Ent. 19: 129. ♀.

andriciphila (Ashmead). Fla. (Jacksonville).

Xestonotus andriciphilus Ashmead, 1887. Canad. Ent. 19: 128. ♀.

gahani Fouts. Md. (Glen Echo).

Leptacis gahani Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 117, 123. ♀, ♂.

longipes (Ashmead). Fla. (Jacksonville).

Amblyaspis longipes Ashmead, 1887. Canad. Ent. 19: 128. ♂.

longispina Fouts. Md.

Leptacis longispina Fouts, 1927. Ent. Soc. Wash., Proc. 29: 175. ♀, ♂.

minuta (Ashmead). Mo. (St. Louis). Host: Cecidomyiid on squash.

Amblyaspis minutus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 267, 269. ♀, ♂.

obscuricornis Fouts. Iowa (Ames).

Leptacis obscuricornis Fouts, 1924. Ent. Soc. Wash., Proc. 26: 161. ♀.

pallipes Fouts. D. C.

Leptacis pallipes Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 117, 121. ♀.

puncticeps Ashmead. Pa., N. C., Fla.

Leptacis puncticeps Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 271, 275. ♂.

rugiceps (Ashmead). D. C.

Amblyaspis rugiceps Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 267, 269. ♀, ♂.

Taxonomy: Fouts, 1924. U. S. Natl. Mus., Proc. 63 (15): 122. — Masner and Muesebeck, 1968. U. S. Natl. Mus. Bul. 270: 82.

Genus AMBLYASPIS Foerster

Amblyaspis Foerster, 1856. Hym. Stud., v. 2, pp. 107, 112.

Type-species: *Platygaster tritici* Curtis. Desig. by Kieffer, 1926.

Revision: Kieffer, 1926. Das Tierreich, Lief. 48, pp. 610-625.

californica Ashmead. Oreg., Calif.

Amblyaspis californicus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 267, 268. ♀, ♂.

occidentalis Ashmead. Ill., Kans.

Amblyaspis occidentalis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 267. ♀.

petiolata Ashmead. Fla.

Amblyaspis petiolatus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 267, 268. ♀, ♂.

Superfamily CERAPHRONOIDEA

By CARL F. W. MUESEBECK

Superfamily rank for this group was first proposed by Masner in 1956 (Acta Faun. Ent. Mus. Nat. Pragae 1: 101), although without indication of basic differences from the Proctotrupeoidea. In 1967, however, Masner and Dessart (Inst. Roy. Sci. Nat. de Belg., Bul. 43: 1-33) defined the superfamily in detail and recognized it as comprising two families, Ceraphronidae and Megaspilidae, the latter being divided into the subfamilies Megaspilinae and Lagynodinae. This classification appears to be sound. The members of this superfamily are remarkable for the possession of two apical spurs on the anterior tibiae.

In his 1914 revision of this group Kieffer used the name Calliceratidae, based on *Calliceras* Nees, 1834, since *Ceraphron* Jurine, 1807, which had been considered the type-genus of the family, was a junior homonym of *Ceraphron* Panzer, 1805. Kieffer was generally followed in the literature of the succeeding thirty years. However, in its Opinion 174, issued in 1946, the International Commission on Zoological Nomenclature suppressed *Ceraphron* Panzer, under suspension of the Rules, and validated *Ceraphron* Jurine with *C. sulcatus* Jurine, 1807, as type-species; since then the names *Ceraphron* and Ceraphronidae have again come into general use.

Apparently species of this superfamily are largely hyperparasites, developing especially on larvae of Aphidiidae, Braconidae, Ichneumonidae, Bethyridae, Dryinidae and Tachinidae. Some, however, are evidently primary parasites of Aleyrodidae, various small Diptera (i. e., Cecidomyiidae, Phoridae), certain neuropteroids and some cynipoid gall-makers; others occur in ant nests where they presumably develop as parasites of certain myrmecophilous Diptera.

Revision: Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 102-136 (North American species).

—Kieffer, 1907. In Andre, Spec. Hym. Eur. Alg., v. 10, pp. 5-261, 10 pls. (Old World species). —Kieffer, 1909. In Wytsman, Gen. Ins., fasc. 94, 24 pp., 2 pls. (generic key and assignment of species). —Kieffer, 1914. Das Tierreich, Lief. 42, pp. 63-238 (World fauna). —Dodd, 1914. Roy. Soc. So. Austral., Trans. 38: 85-118 (Australian fauna). —Hellen, 1966. Fauna Fennica 20: 3-45 (Finnish forms).

Taxonomy: Haliday, 1834. Ent. Mag. 1: 272. —Haliday, 1839. Hymenoptera Britannica, Hym.

Synopsis, p. ii. —Foerster, 1856. Hym. Stud., v. 2, pp. 27, 97-99. —Ashmead, 1903. N. Y.

Ent. Soc., Jour. 11: 33-35. —Masner, 1956. Acta Faun. Ent. Mus. Nat. Pragae 1: 101.

—Dessart, 1962. Soc. Roy. d'Ent. de Belg., Bul. et Ann. 98: 305-309 (key to genera).

—Masner and Dessart, 1967. Inst. Roy. Sci. Nat. de Belg., Bul. 43: 1-33.

Morphology: Reid, 1941. Roy. Ent. Soc. London, Trans. 91: 429-430. —Masner and Dessart, 1967. Inst. Roy. Sci. Nat. de Belg., Bul. 43: 6-25.

Family CERAPHRONIDAE

This family is treated here as restricted by Masner and Dessart in 1967.

Taxonomy: Masner and Dessart, 1967. Inst. Roy. Sci. Nat. de Belg., Bul. 43: 25-29.

Genus CERAPHRON Jurine

Ceraphron Jurine, 1807. Nouv. Meth. Class. Hym. Dipt., p. 303. Preoccupied by *Ceraphron* Panzer, 1805, but validated by the International Commission on Zoological Nomenclature in its Opinion 174, published in 1946, and placed on the Official List of generic names in zoology as name no. 615.

Type-species: *Ceraphron sulcatus* Jurine. Desig. by Internatl. Comn. Zool. Nomencl., Op. 174, 1946.

Calliceras Nees, 1834. Hym. Ichn. Aff. Monog., v. 2, p. 278.

Type-species: *Calliceras fuscicornis* Nees. Desig. by Blanchard, 1843.

Hadrocera Foerster, 1840. Beitr. Monog. Pteromalinen, p. xlv. Unnecessarily proposed as a new name for *Calliceras* Nees.

Megaspilidea Ashmead, 1888. Canad. Ent. 20: 48, 49.

Type-species: *Megaspilidea minuta* Ashmead. Monotypic.

Pristomicrops Kieffer, 1906. Soc. Sci. de Bruxelles, Ann. 30: 146.

Type-species: *Pristomicrops clavatus* Kieffer. Monotypic.

Cerataphron Schulz, 1906. Spolia Hym., p. 152. Emend.

Allomicrops Kieffer, 1914. Das Tierreich, Lief. 42, pp. xv, 69, 138.

Type-species: *Ceraphron abnormis* Perkins. Monotypic.

Eulagynodes Girault, 1917. New Javanese Hymenoptera, p. 9 (private pub.).

Type-species: *Eulagynodes bicolor* Girault. Orig. desig.

Ceranogmus Risbec, 1953. Inst. Francais d'Afrique Noire, Bul. 15: 560.

Type-species: *Ceranogmus testaceus* Risbec. Monotypic.

Some species of *Ceraphron* develop as primary parasites and others as hyperparasites. There are few published rearing records for described North American species but in other parts of the world species of *Ceraphron* have been found to parasitize Diptera (Cecidomyiidae, Drosophilidae, Phoridae, Sciaridae and Syrphidae), Hymenoptera (Braconidae, Ichneumonidae, Dryinidae and Bethyidae), Homoptera (Aleyrodidae, Aphididae and Coccoidea, the last two possibly as hyperparasites) and certain small neuropteroids. Specimens of *Ceraphron* have also been taken in the nests of ants.

Revision: Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 123-132. — Kieffer, 1914. Das Tierreich, Lief. 42, pp. 70-114.

Taxonomy: Dessart, 1965. Soc. Roy. d'Ent. de Belg., Bul. et Ann. 101: 110-158 (micropterous and brachypterous forms).

Biology: Haeussler, 1940. U. S. Dept. Agr., Tech. Bul. 728: 31. — LePelley, 1943. Roy. Ent. Soc. London, Trans. 93: 81.

abnormis Perkins. Calif.; Hawaiian Isls., Indonesia. Host: *Haplogonatopus vitiensis* Perkins and *Echthrodelphe fairchildi* Perkins.

Ceraphron abnormis Perkins, 1910. Fauna Hawaiiensis, v. 2, p. 617. ♀, ♂.

Eulagynodes bicolor Girault, 1917. New Javanese Hymenoptera, p. 9 (private pub.) ♀.

Taxonomy: Masner, 1964. Acta Soc. Ent. Cechoslov. 61: 126.

Biology: Swezey, 1908. Hawaii. Ent. Soc., Proc. 2: 18-21.

amesicola (Ogloblin). Iowa (Ames).

Calliceras amescicola Ogloblin, 1944. Ent. Soc. Wash., Proc. 46: 155. ♀.

amplus Ashmead. Pa., D. C. Host: *Megaselia* sp.

Ceraphron amplus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 124, 129. ♀.

auripes Ashmead. Ont. (Ottawa).

Ceraphron auripes Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 124, 125. ♀.

borealis (Whittaker). B. C. (Hollyburn).

Calliceras boreale Whittaker, 1930. Ent. Soc. Wash., Proc. 32: 71. ♀.

brevicornis Brues. Wis. (Milwaukee).

Ceraphron brevicornis Brues, 1906. Wis. Nat. Hist. Soc., Bul. 4: 145, 146. ♂.

californicus Ashmead. Calif. (Folsom).

Ceraphron californicus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 124, 127. ♀.

carinatus Ashmead. Md., D. C., Va.

Ceraphron carinatus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 125, 131. ♀. The male described by Ashmead belongs in *Lagynodes*.

carlylei Girault. Ill., Iowa, La.

Ceraphron carlylei Girault, 1920. U. S. Natl. Mus., Proc. 58: 179. ♀.

concinus (Whittaker). B. C. (Hollyburn).

Calliceras concinna Whittaker, 1930. Ent. Soc. Wash., Proc. 32: 70. ♂.

crassicornis Harrington. Ont. (Ottawa).

Ceraphron crassicornis Harrington, 1899. Canad. Ent. 31: 77. ♀.

croceipes Brues. Tex. Ecology: In nest of *Labidus coecus* (Latr.).

Ceraphron croceipes Brues, 1902. Amer. Nat. 36: 369. ♀.

fasciatus (Fouts). Md.

Calliceras fasciata Fouts, 1924. Ent. Soc. Wash., Proc. 26: 162. ♀.

flaviscapus Ashmead. D. C., Va.

Ceraphron flaviscapus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 124, 130. ♀.

fusciceps Ashmead. Md., D. C.

Ceraphron fusciceps Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 124, 125. ♀.

Ceraphron secundus Dalla Torre, 1898. Cat. Hym., v. 5, p. 527. Unnecessarily proposed as n. name.

glabricornis Kieffer. Nev. (Ormsby County).

Ceraphron glabricornis Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 260. ♂.

melanocerus Ashmead. Ont. (Ottawa).

Ceraphron melanocerus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 124, 129. ♀.

melantatocephalus Dessart. Fla. (Jacksonville). Host: *Belonocnema treatae* Mayr.

Copidosoma melanocephalum Ashmead, 1886. Amer. Ent. Soc., Trans. 13: 131. "♂" = ♀.

Preocc. in *Ceraphron* by Boheman, 1832.

Ceraphron melantatocephalus Dessart, 1967. Rec. So. Austral. Mus. 15: 551. N. name.

mellipes Ashmead. Fla. (Jacksonville).

Ceraphron mellipes Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 125, 131. ♂, ♀.

minutus (Ashmead). Ont. (Ottawa).

Megaspilidea minuta Ashmead, 1888. Canad. Ent. 20: 49. ♀.

nevadensis Kieffer. Nev. (Ormsby County).

Ceraphron nevadensis Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 260. ♀.

pacificus (Whittaker). B. C. (Chilliwack).

Calliceras pacifica Whittaker, 1930. Ent. Soc. Wash., Proc. 32: 129. ♀.

pallidipes (Fouts). Md. (Glen Echo).

Calliceras pallidipes Fouts, 1924. Ent. Soc. Wash., Proc. 26: 161. ♀.

pallidiventris Ashmead. "Md. (Fort Pendleton)."

Ceraphron pallidiventris Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 124, 126. ♀.

pedalis Ashmead. Va. (Arlington).

Ceraphron pedalis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 124, 130. ♀.

punctatus Ashmead. Md., D. C., Va.

Ceraphron punctatus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 124, 127. ♂, ♀.

quissetensis Brues. Mass. (Woods Hole).

Ceraphron quissetensis Brues, 1906. Wis. Nat. Hist. Soc., Bul. 4: 145, 147. ♀.

schwarzi Muesebeck and Walkley. Md., D. C.

Ceraphron glaber Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 125, 130. ♂, ♀. Preocc. by Boheman, 1832.

Ceraphron schwarzi Muesebeck and Walkley, 1951. U. S. Dept. Agr., Agr. Monog. 2, p. 668. N. name.

tertius Dalla Torre. D. C., Va.

Ceraphron basalis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 124, 127. ♀, ♂. Preocc. by Thomson, 1858.

Ceraphron tertius Dalla Torre, 1898. Cat. Hym., v. 5, p. 528. N. name.

unicolor Ashmead. Wyo., Utah, Calif.

Ceraphron unicolor Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 124, 128. ♀.

whittakeri (Fouts). B. C., Oreg.

Calliceras whittakeri Fouts, 1927. Ent. Soc. Wash., Proc. 29: 173. ♀, ♂.

Genus NEOCERAPHRON Ashmead

Neoceraphron Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 136.

Type-species: *Ceraphron macroneurus* Ashmead. Monotypic.

Neocerataphron Schulz, 1906. Spolia Hym., p. 152. Emend.

Taxonomy: Szelenyi, 1938. Folia Ent. Hungarica 3: 109-112. —Hellen, 1966. Fauna Fennica

20: 41. —Masner and Dessart, 1967. Inst. Roy. Sci. Nat. de Belg., Bul. 43: 18-19.

macroneurus (Ashmead). Fla.

Ceraphron macroneurus Ashmead, 1887. Ent. Amer. 3: 97. ♂.

Genus APHANOGMUS Thomson

Aphanogmus Thomson, 1858. Ofvers. Kongl. Vetensk.-Akad., Forh. 15: 287, 305.

Type-species: *Aphanogmus fumipennis* Thomson. Desig. by Ashmead, 1893.

From the little available information on the biology of members of this genus it appears that some species are primary parasites of certain Diptera, particularly Cecidomyiidae, and other species develop as hyperparasites.

Taxonomy: Szelenyi, 1940. Mus. Natl. Hungarici, Ann. (Zool.) 33: 122-136. —Dessart, 1962.

Soc. Roy. d'Ent. de Belg., Bul. et Ann. 98: 294-300. —Dessart, 1963. Soc. Roy. d'Ent. de

Belg., Bul. et Ann. 99: 387-416. —Dessart, 1964. Soc. Roy. d'Ent. de Belg., Bul. et Ann. 100:

259-278. —Dessart, 1965. Soc. Roy. d'Ent. de Belg., Bul. et Ann. 101: 158-178.

bicolor Ashmead. Ont. (Ottawa).

Aphanogmus bicolor Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 133, 134. ♀.

canadensis Whittaker. B. C. (Hollyburn).

Aphanogmus canadensis Whittaker, 1930. Ent. Soc. Wash., Proc. 32: 131. ♂.

dorsalis Whittaker. B. C. (Hollyburn).

Aphanogmus dorsalis Whittaker, 1930. Ent. Soc. Wash., Proc. 32: 132. ♀.

floridanus Ashmead. S. C., Fla., Ohio. Host: *Arthrocnodax carolina* Felt; *Mycodiplosis acarivora* (Felt).

Aphanogmus floridanus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 133, 134. ♀, ♂.

harringtoni Muesebeck, n. name. Ont. (Ottawa). Host: Cecidomyiid gall-maker.

Aphanogmus salicicola Harrington, 1899. Canad. Ent. 31: 78. ♀, ♂. Preocc. by Ashmead, 1893.

marylandicus Ashmead. Md. (Oakland).

Aphanogmus marylandicus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 133, 135. ♀.

niger Ashmead. D. C.

Aphanogmus niger Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 133. ♂.

obsoletus Whittaker. B. C. (Hollyburn).

Aphanogmus obsoletus Whittaker, 1930. Ent. Soc. Wash., Proc. 32: 131. ♀.

pallidipes Ashmead. Va. (Arlington).

Aphanogmus pallidipes Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 133, 135. ♀.

salicicola (Ashmead). Calif. (Los Angeles).

Ceraphron salicicola Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 124, 128. ♀.

subapterus Whittaker. B. C. (Chilliwack).

Aphanogmus subapterus Whittaker, 1930. Ent. Soc. Wash., Proc. 30: 130. ♀.

varipes Ashmead. Kans.

Aphanogmus varipes Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 133, 135. ♀.

virginiensis Ashmead. Va. (Arlington).

Aphanogmus virginiensis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 133, 135. ♀.

Genus ECITONETES Brues

Ecitonetes Brues, 1902. Amer. Nat. 36: 370.

Type-species: *Ecitonetes subapterus* Brues. Monotypic.

subapterus Brues. Tex. (Austin). Ecology: In colony of *Labidus coecus* (Latr.).

Ecitonetes subapterus Brues, 1902. Amer. Nat. 36: 370. ♀.

Genus SYNARSIS Foerster

Synarsis Foerster, 1878. Naturh. Ver. Rheinlande, Verh. 35: 57.

Type-species: *Synarsis pulla* Foerster. Orig. desig.

An undescribed species occurs in Virginia.

Taxonomy: Szelenyi, 1936. Mus. Natl. Hungarici, Ann. (Zool.) 30: 50-57.

Genus HOMALOCERAPHRON Dessart and Masner

Homaloceraphron Dessart and Masner, 1969. Acta Ent. Bohemoslov. 66: 222.

Type-species: *Homaloceraphron macrophthalmus* Dessart and Masner. Orig. desig.

Host relationships are unknown.

macrophthalmus Dessart and Masner. Tex. (El Paso County).

Homaloceraphron macrophthalmus Dessart and Masner, 1969. Acta Ent. Bohemoslov. 66: 222. ♀.

microphthalmus Dessart and Masner. N. C. (Moore County).

Homaloceraphron microphthalmus Dessart and Masner, 1969. Acta Ent. Bohemoslov. 66: 225. ♀.

Family MEGASPILIDAE

The treatment of this group is in line with that proposed by Masner and Dessart in 1967.

Taxonomy: Masner and Dessart, 1967. Inst. Roy. Soc. Nat. de Belg., Bul. 43: 25-29.

SUBFAMILY MEGASPILINAE**Genus TRICHOSTERESIS Foerster**

Trichosteresis Foerster, 1856. Hym. Stud., v. 2, pp. 97, 99.

Type-species: *Ceraphron glaber* Boheman. Desig. by Ashmead, 1893.

Thliboneura Thomson, 1858. Ofvers. Kongl. Vetensk.-Akad., Forh. 15: 287, 288.

Type-species: *Ceraphron glaber* Boheman. Desig. by Muesebeck and Walkley, 1951.

Neither of the two known North American species has been reared, but exotic forms have been recorded as parasitic in the puparia of Syrphidae.

floridana Ashmead. Fla. (Jacksonville).

Trichosteresis floridana Ashmead, 1887. Ent. Amer. 3: 98. ♀.

vitripennis Whittaker. B. C. (Chilliwack).

Trichosteresis vitripennis Whittaker, 1930. Ent. Soc. Wash., Proc. 32: 72. ♀.

Genus MEGASPILUS Westwood

Megaspilus Westwood, 1829. In Stephens, Nomencl. Brit. Ins., column 37.

Type-species: *Ceraphron dux* Curtis. Desig. by Westwood, 1839.

Habropelte Thomson, 1858. Ofvers. Kongl. Vetensk.-Akad., Forh. 15: 288.

Type-species: *Ceraphron tibialis* Boheman. Desig. by Ashmead, 1893.

Megaspilodes Ashmead, 1888. Canad. Ent. 20: 48.

Type-species: *Ceraphron armatus* Say. Monotypic.

Megalospilus Schulz, 1906. Spolia Hym., p. 152. Emend.

Habropelte Schulz, 1906. Spolia Hym., p. 152. Emend.

Presumably species of *Megaspilus* are parasitic on Diptera, but reliable host records seem to be lacking.

armatus (Say). Ont., Va., Ind.

Ceraphron armatus Say, 1836. Boston Jour. Nat. Hist. 1: 276.

Telenomus stygicus Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 189. ♀.

fuscipennis (Ashmead). Que., Maine, D. C., Va., N. C., Iowa, La., Kans., Wyo., Wash.

Megaspilodes fuscipennis Ashmead, 1888. Kans. Agr. Expt. Sta., Bul. 3, App., p. III. ♀.

leviceps (Kieffer). Nev. (Ormsby county).

Habropelte leviceps Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 256, 257. ♀.

nigerrimus (Kieffer). Calif. (Santa Clara).

Habropelte nigerrimus Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 256, 257. ♂, ♀.

nigerrimus var. *sublevis* (Kieffer). Calif. (Santa Clara).

Habropelte nigerrimus var. *sublevis* Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 257. ♂.

Genus CONOSTIGMUS Dahlbom

Conostigmus Dahlbom, 1858 (1857). Ofvers. Kongl. Vetensk.-Akad., Forh. 14: 291. No

species. — Kieffer, 1907. In Andre, Spec. Hym. Eur. Alg., v. 10, pp. 80-173. Many species.

Type-species: *Megaspilus alutaceus* Thomson. Desig. by Muesebeck and Walkley, 1951.

Eumegaspilus Ashmead, 1888. Canad. Ent. 20: 48, 49.

Type-species: *Eumegaspilus canadensis* Ashmead. Desig. by Muesebeck and Walkley, 1951.

Eumegaspilus Schulz, 1906. Spolia Hym., p. 152. Emend.

Conostigmoides Dodd, 1914. Roy. Soc. So. Austral., Trans. 38: 88, 94.

Type-species: *Eumegaspilus erythrothorax* Ashmead. Orig. desig.

Hosts have been recorded for relatively few of the known species. However, several species, in North America and elsewhere, have been reared from the puparia of Syrphidae, others from the puparia of Tachinidae; and an African species has been recorded repeatedly from the puparia of the tsetse fly, *Glossina palpalis* Rob.-Desv. A number of other species have been found in the nests of ants where they presumably developed as parasites of myrmecophilous Diptera.

Revision: Kieffer, 1907. In Andre, Spec. Hym. Eur. Alg., v. 10, pp. 80-173. — Kieffer, 1914.

Das Tierreich, Lief. 42, pp. 166-221.

Taxonomy: Masner, 1964. Acta Soc. Ent. Cechoslov. 61: 124-125. — Hellen, 1966. Fauna Fennica 20: 15-23.

ambiguus (Ashmead). D. C., Va.

Megaspilus ambiguus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 113, 115. ♀, ♂.

arietinus (Provancher). Que. (Cap Rouge).

Isostasis (!) *arietinus* Provancher, 1887. Addit. Corr. Faune Ent. Canada Hym., p. 183. ♀.

Taxonomy: Masner, 1969. Nat. Canad. 96: 779.

ater Fouts. Calif. Host: Syrphid puparium.

Conostigmus ater Fouts, 1926. Ent. Soc. Wash., Proc. 28: 168. ♀.

bacilliger (Kieffer). Calif. (San Mateo).

Megaspilus bacilliger Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 258. ♂.

bakeri Kieffer. Calif.

Conostigmus bakeri Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. 32: 36. ♂.

californicus (Ashmead). Calif. (Folsom).

Megaspilus californicus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 114, 118. ♂.

canadensis (Ashmead). Ont. (Ottawa).

Eumegaspilus Canadensis Ashmead, 1888. Canad. Ent. 20: 49. ♀.

crawfordi (Mann). Md. (Great Falls). Ecology: In nest of *Formica exsectoides* Forel.

Megaspilus crawfordi Mann, 1920. Ent. Soc. Wash., Proc. 22: 60. ♀.

erythrothorax (Ashmead). Fla. (Jacksonville).

Eumegaspilus erythrothorax Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 120. ♀, ♂.

harringtoni (Ashmead). Ont. (Ottawa).

Megaspilus Harringtoni Ashmead, 1888. Canad. Ent. 20: 48. ♂, ♀.

- hyalinipennis** (Ashmead). Fla. (Jacksonville).
Megaspilus hyalinipennis Ashmead, 1887. Ent. Amer. 3: 98. ♀.
- inermis** (Kieffer). Calif. (San Mateo).
Megaspilus inermis Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 258, 259. ♂.
- integriceps** (Kieffer). Calif. (San Mateo).
Megaspilus integriceps Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 258, 259. ♀.
- laeviceps** (Ashmead). Md., D. C., Va.
Megaspilus laeviceps Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 114, 118. ♂.
- marylandicus** (Ashmead). Md. (Oakland).
Megaspilus marylandicus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 113, 116. ♀.
- nevadensis** (Kieffer). Nev. (Ormsby County).
Megaspilus nevadensis Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 258, 259. ♀.
- nigripes** (Kieffer). Calif. (Santa Clara).
Megaspilus nigripes Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 258. ♂.
- orcasensis** (Brues). Wash. (Puget Sound).
Megaspilus orcasensis Brues, 1910. Wis. Nat. Hist. Soc., Bul. 7: 118. ♂.
- ottawensis** (Ashmead). Ont. (Ottawa).
Eumegaspilus Ottawensis Ashmead, 1888. Canad. Ent. 20: 49. ♀.
- penmaricus** (Ashmead). Pa. (Pen Mar).
Megaspilus penmaricus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 113. ♀.
- pergandei** (Ashmead). D. C.
Megaspilus Pergandei Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 114, 118. ♂.
- popenoei** (Ashmead). Kans., Ill.
Megaspilus Popenoei Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 113, 114. ♀.
- pulchellus** Whittaker. B. C. (Hollyburn).
Conostigmus pulchellus Whittaker, 1930. Ent. Soc. Wash., Proc. 32: 133. ♂.
- rufoniger** (Provancher). Que. (Cap Rouge).
Telenomus rufoniger Provancher, 1888. Addit. Corr. Faune Ent. Canada Hym., p. 403. ♂.
- Taxonomy: Masner, 1969. Nat. Canad. 96: 782.
- schwarzi** (Ashmead). D. C.
Megaspilus Schwarzi Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 113, 115. ♀.
- striatipes** (Ashmead). Ont. (Ottawa).
Megaspilus striatipes Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 113, 115. ♀.
- timberlakei** Kamal. Calif. (San Diego). Host: *Allograpta obliqua* (Say) (puparia),
Sphaerophoria cylindrica (Say).
Conostigmus timberlakei Kamal, 1926. Canad. Ent. 58: 285. ♀.
- Biology: Kamal, [1939]. Egypt. Min. Agr. Tech. and Sci. Serv., Ent. Sect., Bul. 207: 42-44.
- trapezoidus** Kieffer. Pa. (Jeannette).
Conostigmus trapezoidus Kieffer, 1908. Soc. Sci. de Bruxelles, Ann. (2) 32: 35. ♂.
- virginicus** (Ashmead). Mass., Va., Mich., Ind. Host: *Blepharipa scutellata* (R.-D.).
Megaspilus virginicus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 113, 117. ♀.
- zaglouli** Kamal. Calif. Host: *Scaeva pyrastris* (L.), *Syrphus opinator* O. S.
Conostigmus zaglouli Kamal, 1926. Canad. Ent. 58: 285. ♀, ♂.
- Biology: Kamal, [1939]. Egypt. Min. Agr. Tech. and Sci. Serv., Ent. Sect., Bul. 207: 40-42.

Genus DENDROCERUS Ratzeburg

Dendrocerus Ratzeburg, 1852. Ichn. d. Forstins., v. 3, p. 180.

Type-species: *Dendrocerus lichtensteinii* Ratzeburg. Monotypic.

Lygocerus Foerster, 1856. Hym. Stud., v. 2, pp. 97, 99. No species. —Marshall, 1868. Ent. Monthly Mag. 5: 158. Five species.

Type-species: *Ceraphron ramicornis* Boheman. Desig. by Ashmead, 1893.

Macrostigma Rondani, 1877. Soc. Ent. Ital., Bol. 9: 184.

Type-species: *Macrostigma aphidum* Rondani. Monotypic.

Atritonus Foerster, 1878. Naturh. Ver. Rheinlande, Verh. 35: 56. Preocc. by Reitter, 1877.

Type-species: *Atritonus coccophagus* Foerster. Orig. desig.

Prodendrocerus Kieffer, 1907. In Andre, Spec. Hym. Eur. Alg., v. 10, p. 11. No species.

—Kieffer, 1909. in Wytsman, Gen. Ins., fasc. 94, p. 6. One species.

Type-species: *Dendrocerus ratzeburgi* Ashmead. First included species.

Atritomellus Kieffer, 1914. Das Tierreich, Lief. 42, pp. xv, 139, 141. N. name for *Atritonus* Foerster.

Neolygocerus Ishii, 1951. Oyo-Dobuts.-Zasshi 16: 93.

Type-species: *Neolygocerus koyamae* Ishii. Monotypic.

Species of this genus are most commonly associated with sternorrhynchous Homoptera, especially aphids and mealybugs, and to a lesser extent chermids and psyllids. They usually develop either as hyperparasites through other Hymenoptera that are primary parasites, or as parasites of predatory larvae such as those of Syrphidae (various genera) and Chamaemyiidae (especially *Leucopis* and *Crematogaster*). Other recorded hosts include species of Coniopterygidae, Hemerobiidae and the phytophagous dipterous genera *Mayetiola* and *Meromyza*.

Taxonomy: Brues, 1910 (1909). Wis. Nat. Hist. Soc., Bul. 7: 120-121. —Jansson, 1944. Ent.

Tidskr. 65: 190-194. —Ghesquiere, 1960. Soc. Roy. d'Ent. de Belg., Bul. et Ann. 96: 208-215.

—Dessart, 1965. Soc. Roy. d'Ent. de Belg., Bul. et Ann. 101: 178-185. —Dessart, 1965.

Redia 49: 157-163. —Dessart, 1966. Inst. Roy. Sci. Nat. de Belg., Bul. 42(32): 1-16. —Hellen, 1966. Fauna Fennica 20: 4, 9-15.

Biology: Haviland, 1920. Quart. Jour. Micros. Sci. 65: 101-127. —Clausen, 1940.

Entomophagous Insects, pp. 257-261. —Muesebeck, 1959. Ent. News 70: 91. —Ghesquiere,

1960. Soc. Roy. d'Ent. de Belg., Bul. et Ann. 96: 205-208.

alaskensis (Ashmead). Alaska (St. Paul Isl.).

Lygocerus alaskensis Ashmead, 1902. Wash. Acad. Sci., Proc. 4: 140. ♀.

americanus (Ashmead). Md. (Odenton).

Atritonus americanus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 122. ♂.

anomaliiventris (Ashmead). Mich. (Marquette).

Megaspilus anomaliiventris Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 113, 114. ♀.

attentus (Muesebeck). Maine, N. Y., N. J., Ohio. Host: Aphidiidae in *Macrosiphum euphorbiae* (Thomas).

Lygocerus attentus Muesebeck, 1959. Ent. News 57: 94. ♀, ♂.

californicus (Ashmead). Calif.

Lygocerus californicus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 109, 111. ♂.

constrictus (Brues). Wash.

Lygocerus constrictus Brues, 1910 (1909). Wis. Nat. Hist. Soc., Bul. 7: 119. ♂.

conwentziae Gahan. Mass. Host: *Conwentzia hageni* Banks.

Dendrocerus conwentziae Gahan, 1919. Ent. Soc. Wash., Proc. 21: 122. ♀, ♂.

conwentziae var. *rufus* Gahan. Wash., Calif. Host: *Conwentzia* sp.

Dendrocerus conwentziae var. *rufus* Gahan, 1919. Ent. Soc. Wash., Proc. 21: 123. ♀, ♂.

floridanus (Ashmead). Fla. (Jacksonville). Host: *Cinara* sp. (probably secondary).

Chirocerus floridanus Ashmead, 1881. Amer. Ent. Soc., Trans. 9: Proc., p. xxxiv. ♀, ♂.

incompletus (Muesebeck). Maine. Host: Aphidiidae in *Macrosiphum euphorbiae* (Thomas).

Lygocerus incompletus Muesebeck, 1959. Ent. News 57: 96. ♀, ♂.

latifrons (Muesebeck). Calif. Host: Species of Hemerobiidae.

Lygocerus latifrons Muesebeck, 1959. Ent. News 57: 93. ♀, ♂.

leucopidis (Muesebeck). Calif. Host: *Leucopis* sp.

Lygocerus leucopidis Muesebeck, 1959. Ent. News 57: 91. ♀, ♂.

niger (Howard). Transition and Upper Austral Zones. Host: Aphidiidae parasitic in various aphids.

Megaspilus niger Howard, 1890. U. S. Dept. Agr., Insect Life 2: 247. ♀.

obscurus Muesebeck, n. name. Calif. (San Mateo).

Atritonus californicus Kieffer, 1906 (1905). Berlin. Ent. Ztschr. 50: 256. ♂. Preocc. by Ashmead, 1893.

pacificus (Ashmead). Calif. (Placer County).

Lygocerus pacificus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 109, 112. ♀.

pallipes (Harrington). Que. (Hull).

Lygocerus pallipes Harrington, 1899. Canad. Ent. 31: 77. ♀, ♂.

picipes (Ashmead). Ont., Ohio, S. C., Minn.

Lygocerus picipes Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 108, 109. ♀.

pinicola (Muesebeck). Calif. Host: *Leucopis atrifacies* Aldrich.

Lygocerus pinicola Muesebeck, 1959. Ent. News 57: 92. ♀, ♂.

rufiventris (Ashmead). Fla.

Atritomus rufiventris Ashmead, 1887. Ent. Amer. 3: 98. ♀.

sexdentatus (Ashmead). D. C., W. Va.

Lygocerus 6-dentatus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 109, 111. ♀, ♂.

stigmatus (Say). Ont., Mich., Ind. Host: Species of Aphidiidae in aphid.

Ceraphron stigmatus Say, 1836. Boston Jour. Nat. Hist. 1: 277.

triticum (Taylor). U. S. Host: *Mayetiola destructor* (Say).

Ceraphron triticum Taylor, 1860. Amer. Agr., p. 300. ♂.

Genus ECNOMOTHORAX Dessart and Masner

Ecnomothorax Dessart and Masner, 1965. Soc. Roy. d'Ent. de Belg., Bul. et Ann. 101: 276.

Type-species: *Ecnomothorax muesebecki* Dessart and Masner. Orig. desig.

muesebecki Dessart and Masner. Mo., Ark.

Ecnomothorax muesebecki Dessart and Masner, 1965. Soc. Roy. d'Ent. de Belg., Bul. et Ann. 101: 277. ♀, ♂.

SUBFAMILY LAGYNODINAE

Taxonomy: Masner and Dessart, 1967. Inst. Roy. Sci. Nat. de Belg., Bul. 43 (22): 1-33.

Genus LAGYNODES Foerster

Microps Haliday, 1833. Ent. Mag. 1: 272. Preocc. by Dahl, 1823; Wagler, 1830.

Type-species: *Microps rubi* Haliday. Monotypic.

Lagnodes Foerster, 1840. Beitr. Monog. Pteromalinen, p. xliv.

Type-species: *Lagnodes rufus* Foerster. Monotypic.

Triogmus Marshall, 1874. Ent. Annual, 1874, p. 134.

Type-species: *Triogmus furcifer* Marshall. Monotypic.

Plastomicrops Kieffer, 1906. Soc. Sci. de Bruxelles, Ann. 30: 145.

Type-species: *Plastomicrops acuticornis* Kieffer. Desig. by Muesebeck and Walkley, 1956.

Lagnodes Sharp, 1908. In Zool. Rec., 1906, p. 308. Error.

Lagnodes Risbec, 1953. Inst. Francais d'Afrique Noire, Bul. 15: 560. Error.

There seem to be no reliable records of host association for species of *Lagnodes*. However, specimens of some species have been taken in ant nests.

Revision: Kieffer, 1914. Das Tierreich, Lief. 42, pp. 130-138. —Dessart, 1966. Inst. Roy. Sci. Nat. de Belg., Bul. 42 (18): 1-85.

Taxonomy: Szelenyi, 1936. Mus. Natl. Hungarici, Ann. (Zool.) 30: 56-64. —Jansson, 1945. Opusc. Ent. 10: 141-142.

longicornis (Ashmead). Fla. (Ft. George Isl.).

Ceraphron longicornis Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 125, 132. ♂.

minutus Ashmead. D. C., Va.

Lagnodes minutus Ashmead, 1893. U. S. Natl. Mus., Bul. 45: 121. ♀.

xanthus Whittaker. B. C. (Hollyburn).

Lagnodes xanthus Whittaker, 1930. Ent. Soc. Wash., Proc. 32: 72. ♀.

Superfamily TRIGONALOIDEA

By ROBERT W. CARLSON

Family TRIGONALIDAE

According to Malyshev (1968) this small family includes about 70 species which are scattered throughout the world. The species are all parasitic. The hymenopterous or dipterous primary hosts are usually parasites or predators of larval Lepidoptera. It is thought that at least some species can be primary larval parasites of sawflies, and Cooper (1954) hypothesized that sawflies were the hosts of ancestral Trigonalidae. That seems quite possible in view of the isolated and undeterminable phyletic position of the family, but I know of no rearings of Nearctic trigonalids as primary or secondary parasites of sawflies.

Trigonalid eggs are deposited singly on the leaves of angiosperms, apparently always near the edges of leaves. They are tiny and tough-shelled, enabling them to be ingested without destruction by leaf feeding caterpillars. It appears that if the tough shell is not cracked when an egg is ingested hatching does not occur. Eclosion from the egg occurs in the intestine of the caterpillar, and the first instar trigonalid bores through the intestinal wall and apparently remains in the body cavity of the caterpillar without developing further pending parasitization of the caterpillar by an ichneumonid or tachinid or predation upon it by a social or solitary vespid. When the primary host is a social vespid, a first instar trigonalid would apparently be fed to a larval vespid by a foraging worker.

Revision: Townes, 1956. U. S. Natl. Mus., Proc. 106: 295-304.

Taxonomy: Schulz, 1907. In Wytsman, Gen. Ins., fasc. 61, 24 p. (Genera of world). — Bischoff, 1938. In Hedicke, Hym. Cat., pt. 5, 18 p. (world catalog).

Biology: Clausen, 1929; 1931. Ent. Soc. Wash., Proc. 31: 67-79; 33: 70-81. — Clausen, 1940.

Entomophagous Insects, p. 56-61. — Cooper, 1954. Ent. Soc. Wash., Proc. 56: 280-288.

— Malyshev, 1968. Genesis of Hym. and ... their Evolution, p. 88-95.

Genus ORTHOGONALYS Schulz

Orthogonalys Schulz, 1905. Hym. Stud., p. 76.

Type-species: *Orthogonalys boliviana* Schulz. Monotypic.

Orthogonalys Schulz, 1907. In Wytsman, Gen. Ins., fasc. 61, p. 8. Emend.

Tapinogonalys Schulz, 1907. In Wytsman, Gen. Ins., fasc. 61, p. 14.

Type-species: *Trigonalys pulchellus* Cresson. Desig. by Viereck, 1914.

pulchella (Cresson). Southern Maine s. to n. Va., w. to w. N. Y. and W. Va. Host: *Archytas atrirrimus* (R.-D.), *Nilea lobeliae* (Coq.).

Trigonalys pulchellus Cresson, 1867. Ent. Soc. Phila., Proc. 6: 351. ♂.

Biology: Townes, 1956. U. S. Natl. Mus., Proc. 106: 298 (oviposition behavior).

Genus *LYCOGASTER* Shuckard

Lycogaster Shuckard, 1841. Entomologist 1: 123.

Type-species: *Lycogaster pullata* Shuckard. Monotypic.

pullata nevadensis (Cresson). Southwestern S. Dak., Colo., n. N. Mex., Nev., w. Oreg. Ecology: A number of specimens were reared from unknown pupal or larval-pupal parasites of *Hyphantria cunea* (Drury) at Boulder, Colo. Host: *Eudomynerus foraminatus scutellaris* (Sauss.).

Trigonalys nevadensis Cresson, 1879. Amer. Ent. Soc., Trans. 7: vii in Proc. ♂, ♀.

pullata pullata Shuckard. Vt., Mass., R. I., N. Y., Md., D. C., n. Va., w. N. C., n. Ga., n. N. Dak.

Host: *Eudomynerus foraminatus foraminatus* (Sauss.), *Enicospilus americanus* (Christ).

Lycogaster pullata Shuckard, 1841. Entomologist 1: 124. ♀.

Lycogaster pullata var. *hollensis* Melander and Brues, 1902. Biol. Bul. 3: 36. ♂, ♀.

Biology: Cooper, 1954. Ent. Soc. Wash., Proc. 56: 280-288. — Townes, 1956. U. S. Natl. Mus., Proc. 106: 299-300.

Genus *POECILOGONALOS* Schulz

Poecilogonalos Schulz, 1907. In Wytzman, Gen. Ins., fasc. 61, p. 9.

Type-species: *Trigonalys pulchella* Westwood. Monotypic. The type-species is an objective synonym of *P. thwaitesii* (Westwood).

This genus includes only one Nearctic species, but according to Townes (1956, trigonalid revision, p. 300) *Poecilogonalos* is rather large and widely distributed.

costalis (Cresson). Southeastern Mass. s. to mid Fla., w. to s. Ohio and s.w. La. Ecology: Has been reared as a secondary parasite of *Phosphila turbulenta* Hbn. and *Automeris io* (F.). Host: *Lespesia* sp. ex *Phosphila turbulenta* Hbn.

Trigonalys (Lycogaster) costalis Cresson, 1867. Ent. Soc. Phila., Proc. 6: 352. ♂.

Trigonalys sulcatus Davis, 1898 (1897). Amer. Ent. Soc., Trans. 24: 349. ♂.

Biology: Townes, 1956. U. S. Natl. Mus., Proc. 106: 301-302 (oviposition behavior).

Genus *BAREOGONALOS* Schulz

Bareogonalos Schulz, 1907. In Wytzman, Gen. Ins., fasc. 61, p. 18.

Type-species: *Trigonalys canadensis* Harrington. Monotypic.

Nippogonalos Uchida, 1929. Insecta Matsumurana 3: 79.

Type-species: *Nippogonalos jezoensis* Uchida. Monotypic and orig. desig.

canadensis (Harrington). Southwestern B. C., n.w. Calif. Host: *Vespula arenaria* (F.), *V. pensylvanica* (Sauss.).

Trigonalys Canadensis Harrington, 1896. Canad. Ent. 28: 108. "♂" = ♀.

Taxonomy: Harrington, 1898. In Taylor, Canad. Ent. 30: 15-16 (male described).

Biology: Taylor, 1898. Canad. Ent. 30: 14-15.