

VIII.—*Catalogue of Canadian Proctotrypidae.*

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(Read 25th May, 1899.)

The insect fauna of Canada is rich in species, and worthy of investigation both from its scientific and economic importance. In the past, that consideration has not been given to it that it abundantly deserves, but in recent years the ever-swelling tide of interest in insect life, rising in the United States, has in some measure overflowed the national boundaries and stimulated research in Canada. It must not, however, be inferred that Canadians have altogether overlooked this branch of natural history, for the Entomological Society of Ontario, the second oldest entomological society in America, has for thirty-five years earnestly endeavoured to quicken an interest in our insects, and to develop a knowledge of their forms and habits. The workers, however, have always been few in number in proportion to the enormous territory to be exploited, and extensive districts exist in which no collector has ever resided or even visited.

The attention and time of some of our most enthusiastic and skilful entomologists have also, necessarily, been in part devoted to the economic phases of insect manifestations, as the connection of the Entomological Society with the Agricultural Department of Ontario requires the preparation of annual reports adapted to the needs of the farmer and fruit-grower.

Naturally, under these restrictions, there has been a tendency to collect only in the orders of which the species might be most readily exchanged and determined, or which were markedly injurious to plant-life. Hence the lepidoptera, on account of their greater beauty, and the coleoptera, because they can be so easily collected and preserved, have largely monopolized attention, and their members are most fully known in cabinets and in literature. Yet even in these orders there are still many rare and new forms to reward the assiduous and skilful collector, even in the districts longest settled and most carefully investigated.

Of the other orders our knowledge is relatively meagre, and many fertile fields await those who may seek to garner their treasures. This is very markedly the case as regards the hymenoptera, an order extremely prolific in species and wonderfully interesting from the diversified structure and remarkable habits of the multitude of forms that compose it.

The great number of species of hymenoptera which inhabit our wide Dominion is indicated by the annexed catalogue of a comparatively small section of the order. Not fully indicated, however, as, although nomin-

ally covering the whole country, it is in reality a list, by no means exhaustive, of a single district, to which are added a few records from outside points. Of the two hundred species enumerated all but fifteen occur in the neighbourhood of Ottawa, while only about thirty-five are recorded from all the rest of Canada. It cannot be supposed, however, that the family is so centralized around the capital, and it is evident that our knowledge of the forms is yet fragmentary, and that this catalogue is only a preliminary one, a stepping-stone for future workers.

The late Abbé Provancher, an enthusiastic and indefatigable naturalist, devoted much of his labours to the insects of the Province of Quebec, publishing the results as supplements to the *Naturaliste Canadien*, commenced in 1869, and bringing them together in his *Petite Faune Entomologique du Canada*. The second volume of this work, completed in 1883, is in large part devoted to the Hymenoptera, and contains the descriptions of many new species. The Proctotrypidæ, pages 557-563, number only eight species, as follows :

- Galesus quebecensis*, sp. nov.  
*Basalys ruficornis*, sp. nov.  
*Aneurhynchus spinosus*, sp. nov. = *Ocyrtabes spinosus*, Prov.  
*Spilomicrus longicornis*, sp. nov.  
*Proctotrupes rufigaster*, sp. nov.  
*Proctotrupes abruptus*, Say.  
*Proctotrupes flavipes*, sp. nov.  
*Bethylus prolongatus*, sp. nov. = *Perisemus prolongatus*, Prov.

On page 540, as representing a new genus in the Braconidæ, was described another species :

- Copelus paradoxus*, sp. nov. = *Helorus paradoxus*, Prov.

On page 808 a further addition is made of *Megaspilus lucens*, sp. nov. = *Proctotrypes flavipes*, Prov.

In 1889 the author endeavoured to bring his work up to date by publishing *Additions et Corrections au Volume II de la Faune Entomologique du Canada, traitant des Hyménoptères*, which includes several additions to the Proctotrypidæ, pages 173-184, based largely upon specimens contributed by Mr. J. A. Guignard and myself from Ottawa collections. These species are as follows :

- Diapria apicalis*, Say.  
*Aneurhynchus inermis*, sp. nov. = *Aneurhynchus mellipes*, Ashm. ?  
*Aneurhynchus aneurus*, sp. nov. = *Platygaster Herrickii*, Pack.  
*Spilomicrus foreatus*, sp. nov. = *Paramesius clavipes*, Ashm. ?  
*Cinetus mellipes*, Say.  
*Cinetus nasutus*, sp. nov.  
*Gonatopus diciptiens*, sp. nov.  
*Bethylus formicoides*, sp. nov. = *Perisemus formicoides*, Prov.  
*Telemonus stygius*, sp. nov. = *Habropelte armatus*, Say.

<i>Platygaster canadensis</i> , sp. nov.	= <i>Isocybus canadensis</i> , Prov.
<i>Coptera polita</i> , Say.	= <i>Galesus politus</i> , Say.
<i>Platymischus torquatus</i> , sp. nov.	= <i>Tropidopria torquata</i> , Prov.
<i>Isotasius arietinus</i> , sp. nov.	= <i>Megaspilus Harringtoni</i> , Ashm. ?
<i>Acerota opaca</i> , sp. nov.	= <i>Scelio opacus</i> , Prov.

On page 209 was described as the type of a new genus in the family Chalcididæ :

<i>Trichasius claratus</i> , sp. nov.	= <i>Gryon claratus</i> , Prov.
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Two additional species are described in the *Supplement aux Additions*, same volume, pages 399-406 :

<i>Telemonus rufoniger</i> , sp. nov.
<i>Trichacis auripes</i> , sp. nov.

Among the additions to the Braconidæ was described, page 154, *Ropronia pediculata*, sp. nov., which the author, in the supplement, page 406, referred to the Proctotrypidæ, but which Mr. Ashmead considers, from the description and the figure of the wing, to be really a Braconid.

Several of the species enumerated have not been identified by the descriptions, and the types are not accessible to me, but accepting them all as distinct species, it is seen that only twenty-six species were then recognized in our fauna. This number has within the past decade been greatly increased through the labours of Mr. W. H. Ashmead, who has done so much to advance the knowledge of the Hymenoptera of America. In the *Canadian Entomologist*, volume xx., pages 48-55, he published "Descriptions of some new Genera and Species of Canadian Proctotrypidæ," based on material from Ottawa. His admirable monograph of the North American Proctotrypidæ (*Bulletin 45 U. S. Nat. Museum*), published in 1893, contains descriptions of many additional species. These forms were chiefly from Ottawa, and identifications of already described species raised the number of Canadian species to about ninety. More recently he has been kind enough to publish for me further "Descriptions of some new Genera and Species of Canadian Proctotrypidæ" (*Canadian Entomologist*, volume xxix., pages 53-56, March, 1897), and to identify other material for me. The aid and encouragement received during my long correspondence with this learned entomologist are now most gratefully and warmly acknowledged.

Notwithstanding the numerous species which have been described from our fauna, the limited extent of our knowledge is evidenced by the fact that forms apparently new to science are still abundant, and additions can be made to the list of species by almost any day's collections. Hence I ventured to describe, in the *Canadian Entomologist*, volume xxxi., pages 77-80, April, 1899, "Six new Ottawa Proctotrypidæ," and have with regret felt it necessary now to describe several additional species, in order to incorporate them in this catalogue.

It is hoped that the publication of even this imperfect list may be an incentive to some Canadian entomologists to devote a portion of their time to the collection and preservation of material in orders other than the two hitherto fashionable. The Hymenoptera are neither difficult to collect nor to preserve, and this holds good even of the much neglected Proctotrypidæ. It is true that they are small and inconspicuous, often indeed microscopic, but once some slight knowledge of their appearance and habits is gained, they can be readily recognized and collected, and new or rare forms will certainly reward and stimulate the collector. It may not be amiss, therefore, in this hope of arousing an interest in their collection, and so obtaining a more adequate idea of their number and distribution, to make a few observations upon their habits, imperfectly as these are known in regard to the majority of the species.

Having arranged my collection in accordance with the scheme adopted by Mr. Ashmead in his monograph, the title Proctotrypidæ is retained for all our species. Recently, however, this eminent author, in a suggested revision of the classification of the Hymenoptera (*Journal New York Entomological Society*, volume vii., pages 45-60, March, 1899), separates the forms having one-jointed trochanters and lobed posterior wings to form the family Bethylinæ of the superfamily Vespoidea—a position in accordance with the views of those earlier authors who considered them to be aculeates. This family would include the subfamilies Bethylinæ and Dryininæ of my list, as well as the Emboleminæ, of which no Canadian species is recorded, and of which indeed only one American species has been described. The remaining forms, having two jointed trochanters and unlobed posterior wings, are placed in the superfamily Proctotrypoidea, which also includes Pelicinus, an insect remarkable for its long, slender abdomen, and which is not rare in Canada.

As previously stated, our Proctotrypids are all small, seldom reaching the length of one-fourth of an inch, and sometimes, as in the case of *Baus*, being scarcely visible or recognizable as insects, except to the trained and watchful eye. They have, however, considerable and interesting diversities of structure, and even very remarkable characters, which require the use of the microscope for their proper inspection. They are all sombre in colour, usually black or brownish, but often with the legs, and sometimes more or less of the body, yellow, or, as with some of the genus *Proctotrypes*, they may be more or less red. They have none of the bright metallic and iridescent hues of the Chalcididæ, which they resemble only in size. Even in the field the trained eye at once distinguishes them by their more ant-like or wasp-like forms, and by the manner in which the wings are held when dead they can be distinguished from the minute Braconids, which often occur with them. These have the wings erect, with the upper surfaces more or less closely applied, whereas in the Proctotrypids they are laid flat and cover the abdomen.

Proctotrypids are also much less active in their movements, and, when taken with a sweeping-net, usually walk lazily about and are slow to take flight; often, also, they remain motionless, "shamming dead," with the antennæ folded beneath the body. Chalcids, on the contrary, are quick in taking wing, as a rule, and thus a smaller proportion of the specimens taken in a net will be secured.

Sweeping among the luxuriant herbage of damp localities is the most expeditious method of making a collection, but some species occur only in drier situations. A more valuable mode of obtaining specimens is to breed them, thus obtaining, what is infinitely more valuable than the specimens themselves, records and observations of their life-histories. In the great complex of insect life these minute creatures hold a very important place, as they are all true parasites, attaining their development at the expense of other insects or of arachnids, and thus forming a great check upon the undue multiplication of many forms. All the members of one of the largest subfamilies are exclusively egg-parasites, infesting especially the eggs of lepidoptera, hemiptera, orthoptera and spiders. Usually one specimen only develops in an egg, but some species are so small that several may find sufficient nourishment therein. The remaining forms live in the bodies of insects in their larval and pupal stages. The entomologist who rears insects in any order has thus opportunities of breeding these parasites and of recording his observations as to their hosts.

The following are the habits attributed to the several subfamilies. The Bethylinæ are believed to be largely parasitic on coleopterous larvæ, as they have been reared from galls and fungi inhabited by such larvæ; other genera inhabit ant-nests, and some prey upon microlepidopterous larvæ. The Dryininæ confine their attacks to certain groups of homopterous insects, and the peculiar pincer-like claws of the females of most genera are supposed to enable them to grasp the larval forms of such homoptera. The Ceraphroninæ are chiefly parasitic on aphids and cecidomyids. The Scelioninæ are true egg-parasites, and may be readily reared from the eggs of lepidoptera, hemiptera, orthoptera and spiders. The Platygasterinæ infest the larvæ of the families Cecidomyidæ and Tipulidæ of the Diptera. The Helorinæ, limited to the single genus *Helorus*, are parasitic in the cocoons of *Chrysopa*, a neuropterous genus. The Proctotrypinæ are considered to prey upon the larvæ of flies and beetles living in fungi, and the Belytinæ are supposed to have similar habits. The Diapriinæ are thought to be confined to dipterous larvæ, but the habits of only a small proportion are fully known.

Our knowledge regarding the habits of the Canadian species is, as may be easily understood, of the most meagre character, and it is most desirable that information should be acquired as to the life-histories of as many forms as possible. By collecting eggs and larvæ which appear to

be parasitized, as well as galls and fungi, it may be possible to any person to add largely to our scanty knowledge.

As regards the best time to capture the mature insects in the field, although a few forms occur in spring, it is not until midsummer that they become numerous. My records show that the most specimens are obtained in August and the first week of September, but probably both before and after this period they may be much more abundant than my dates indicate. During July my official duties prevent me annually from collecting, and frequently I have been absent during a portion of September, thus making the record for that month incomplete. Even in the early part of October, if fine weather prevails, a considerable number of forms are still abroad, and later still specimens can be obtained by collecting moss and *débris* and sifting them out. I have obtained representatives of at least thirty species from moss collected in swamps, usually late in November and even after the ground was covered with snow. These are chiefly apterous forms, especially of the ceraphronids and scelionids, and always females, many of which doubtless thus pass the winter, for, though I have never obtained moss in the early spring, the insects remained alive so long as the moss was kept in a suitable condition, not being allowed to become dry or to be exposed to too low a temperature. It is probable that the summer forms of many of these apterous individuals will be winged in both sexes.

When our species shall have been more fully studied, it is inevitable that numerous synonyms will be found, arising from such differences in the development of the wings and other structural variations, as well as from the difficulty of correlating the sexes of many species until they shall have been reared together. Certain species have been created on differences, apparently distinctive, between a few individuals, but which in a larger series of specimens will be found to be merely individual variations, merging imperceptibly to a common central type. On the other hand, some individuals now grouped together, especially when of opposite sexes, will prove to be distinct species, so that the total number at present recognized will not probably be much changed, and it will always be increasing by the addition of new species from our vast and as yet almost unexploited territories.

### **PROCTOTRYPIDÆ.**

#### Subfamily I.—BETHYLINÆ.

##### ISOBRACHIUM MYRMECOPHILUM.

*Isobrachium myrmecophilum*, Ashmead, Monog. N. A. Proctotrypidæ, p. 37.

One ♂ taken with the sweeping-net in a small swamp on the old racecourse, Ottawa, 24th August.

## ISOBRACHIUM MANDIBULARE.

*Isobrachium mandibulare*, Ashmead, Monog. N. A. Proc., p. 38.

One ♀, labelled Toronto, 24th April, from Mr. W. Metcalfe.

## MESITIUS VANCOUVERENSIS.

*Mesitius vancouverensis*, Ashmead, Monog. N. A. Proc., p. 64.

The type ♀ in Coll. Ashmead was received by me from Rev. G. W. Taylor, Victoria, V. I.

## MESITIUS BIHOVEOLATUS.

*Mesitius bifoveolatus*, Ashmead, Monog. N. A. Proc., p. 66.

Two ♀♀. Ottawa, 11th May; Hull, Que., 27th August, 1898.

## ANOXUS CHITTENDENII.

*Anoxus Chittendenii*, Ashmead, Monog. N. A. Proc., p. 68.

One ♂ taken at Hull on 28th July, 1894.

## PERISEMUS FORMICOIDES.

*Bethylus formicoides*, Provancher, Add. Faune Hyménoptérolgique, p. 179, ♀.

*Epyris formicoides*, Provancher, *ibid.*, p. 402.

*Perisemus formicoides* (Prov.), Ashmead, Monog. N. A. Proc., p. 70.

The type ♀ was taken at Ottawa. In my collection is a specimen determined by Provancher, and also taken at Ottawa. It seems to differ from *P. prolongatus*, Prov., chiefly in having the antennæ somewhat more slender, and the mandibles yellow. It may be only a form of that species.

## PERISEMUS PROLONGATUS.

*Bethylus prolongatus*, Provancher, Nat. Can., vol. xii, p. 265, ♀; Faune Ent. Can., p. 563.

*Bethylus prolongatus* (Prov.), Ashmead, Ent. Am., iii, p. 97.

*Epyris prolongatus*, Provancher, Add. Faune Hym., p. 402.

*Perisemus prolongus* (Prov.), Ashmead, Monog. N. A. Proc., p. 72.

Ashmead states that his description is made from the type specimen given to him by the author, but this is evidently an error, as Provancher described the species previous to my correspondence with him, and the type has never been seen by me. The specimen sent to Ashmead may have been one determined by Provancher, or possibly it was the type of *P. formicoides*. Provancher, in his description of the species, says: "Wings slightly smoky, the stigma with a pale point at base, the radial cell large, open at the tip, the lobes of the lower wings profoundly divided." He adds, in a note to the description: "Very recognizable by the lobes of the inferior wings." The specimen described by Ashmead has "wings aborted, not extending to tip of metathorax." In all my

specimens (one of which was determined by Provancher) the wings are thus abbreviated, only in one specimen reaching to tip of metathorax. The legs vary considerably in colour. Seven ♀♀ and one ♂ taken at Hull and Ottawa; dates ranging from 2nd June to 23rd August. Type of species was from some point in the Province of Quebec.

GONIOZUS CELLULARIS.

*Belyglus cellularis*, Say, Bost. Jour. Nat. Hist., i, p. 279; Lec. Ed. Say, ii, p. 726.

*Belyglus cellularis* (Say), Ashmead, Ent. Am., iii, p. 97.

*Goniozus cellularis* (Say), Ashmead, Monog. N. A. Proc., p. 74.

One ♀ labelled Ridgeway, Ont., 30th May, 1891, received from Mr. E. P. Van Duzec.

GONIOZUS FOVEOLATUS.

*Goniozus foveolatus*, Ashmead, Ent. Am., iii, p. 76, ♀; Monog. N. A. Proc., p. 74, ♂.

One ♀, Hull, 19th August, 1894; one ♂, Hull, 29th July, 1894; one ♂, Ottawa, 19th June, 1895; one ♂, Sudbury, Ont., 16th June, 1892.

Subfamily III.—DRYININÆ.

GONATOPUS CONTORTULUS.

*Gonatopus contortulus*, Patton, Can. Ent., xi, p. 65, ♀; Ashmead, Ent. Am., iii, p. 74; Monog. N. A. Proc., 83.

One ♀ apparently of this species, taken with sweeping-net in swampy undergrowth near Hull, Que., 29th July, 1894.

GONATOPUS DICIPENS.

*Gonatopus dicipiens*, Provancher, Add. Faune Hym., p. 179.

*Gonatopus dicipiens* (Prov.), Ashmead, Monog. N. A. Proc., p. 85.

Type ♀ in Coll. Provancher, taken at Cap Rouge. In the description it is said to have "one large ocellus upon the vertex;" it is also said to be "rare," which might indicate that the Abbé had more than one specimen.

GONATOPUS FLAVIFRONS.

*Gonatopus flavifrons*, Ashmead, Monog. N. A. Proc., p. 84, pl. v., fig. 4, ♀.

One ♀ from swampy meadow, Hull, 15th July, 1894. The specimen is apparently immature, and is neither so large nor so brightly coloured as the type ♀ which was collected by Mr. Van Duzec at Albany, N. Y.

## CHELOGYNUS CANADENSIS.

*Chelogynus canadensis*, Ashmead, Monog. N. A. Proc., p. 93, pl. vi, fig. 1, ♀.

Type ♀ in Coll. Ashmead, from Ottawa. One ♀ taken at Hull, 4th June.

## ANTEON POLITUS.

*Anteon politus*, Ashmead, Monog. N. A. Proc., p. 96, pl. vi, fig. 2, ♀.

Type ♀ in Coll. Ashmead, from Toronto. Three ♀♀ from Hull July and August. This species was incorrectly given as *Phorbas laticeps*, Ashmead, in Can. Ent., xxvii, p. 156.

## ANTEON PUNCTICEPS.

*Anteon puncticeps*, Ashmead, Monog. N. A. Proc., p. 97, ♂.

One of the types in Coll. Ashmead was taken by Mr. H. F. Wickham in Vancouver Island.

## APHELOPUS MELALEUCUS.

*Goniatopus melaleucus*, Dalman, Sv. Ak. Handl., 1818, p. 82, ♀.

*Aphelopus melaleucus* (Dalm.), Ashmead, Monog. N. A. Proc., p. 101.

One ♂ in Coll. Ashmead, from Ottawa. One ♂, Grimsby, 13th May, 1894; one ♂, Port Hope, 21st May, 1895; these two specimens collected by Mr. W. Metcalfe. The species in Europe is a parasite of *Typhlocyba*.

## APHELOPUS AFFINIS.

*Aphelopus affinis*, Ashmead, Monog. N. A. Proc., p. 102.

Type ♀ in Coll. Ashmead, from Canada, exact locality not mentioned.

## Subfamily IV.—CERAPHRONINÆ.

## Tribe I.—MEGASPILINI.

## HABROPELTE FUSCIPENNIS.

*Megaspilodes fuscipennis*, Ashmead, Bull. 3, Kans. Exp. Sta. App., p. 11, 1888.

*Habropeelte fuscipennis*, Ashmead, Monog. N. A. Proc., p. 105.

Two ♀♀ and one ♂ from Ottawa. This is the largest of our species belonging to the subfamily, and also one of the largest of all our proctotrypids.

## HABROPELTE ARMATUS.

*Ceraphron armatus*, Say, Bost. Jour. Nat. Hist., i, p. 276; Lec. Ed. Say, ii, p. 724.

*Lygocerus armatus* (Say), Ashmead, Ent. Am., iii, p. 98.

*Megaspilodes armatus* (Say), Ashmead, Bull. 3, Kans. Exp. Sta. App., p. 11, 1888.

*Telenomus stygius*, Provancher, Add. et Corr., p. 180.

The type ♀ of Provancher's species was collected at Ottawa.

## LYGOCERUS PALLIPES.

*Lygocerus pallipes*, Harrington, Can. Ent., xxxi, p. 77.

Two ♀♀ and one ♂ from Hull, Que., August, 1897.

## LYGOCERUS PICIPES.

*Lygocerus picipes*, Ashmead, Monog. N. A. Proc., p. 109.

Type ♀ in Coll. Ashmead, from Ottawa. One ♀ taken at Kettle Island, below Ottawa, in July, and two ♂♂ from Hull in August.

## LYGOCERUS STIGMATUS.

*Ceraphron stigmatus*, Say, Bost. Jour. Nat. Hist., i, p. 277; Lec. Ed. Say, ii, p. 724.

*Lygocerus stigmatus* (Say), Ashmead, Ent. Am., iii, p. 98; Monog. N. A. Proc., p. 110.

Two ♀♀ and three ♂♂ of this useful parasite were received from Dr. Fletcher, who bred a number of specimens from an aphid infesting the raspberry, *Rubus strigosus*.

## MEGASPILUS STRIATIPES.

*Megaspilus striatipes*, Ashmead, Monog. N. A. Proc., p. 115, pl. vi, fig. 7, ♀.

Type ♀ in Coll. Ashmead, from Ottawa.

## MEGASPILUS HARRINGTONI.

*Megaspilus Harringtoni*, Ashmead, Can. Ent., xx, p. 48; Monog. N. A. Proc., p. 116.

Types ♀ ♂ in Coll. Ashmead, from Ottawa. Six ♀♀ in my collection, from same district. One of these was bred from the puparium of a willow Diplosis in April; the remainder were taken in July and August. This species is larger than the following, and appears quite distinct.

## MEGASPILUS OTTAWAENSIS.

*Eumegaspilus ottawaensis*, Ashmead, Can. Ent., xx, p. 49.

*Megaspilus ottawaensis*, Ashmead, Monog. N. A., Proc., p. 117.

Type ♀ in Coll. Ashmead, from Ottawa. This is one of our commonest proctotrypids. The typical form has abbreviated wings, but individuals of both sexes occur with fully developed wings. The males are rare, especially those of the short-winged form. The insects can be easily obtained by sweeping the herbage of swampy localities during August and September. They can also be obtained by sifting moss collected at the beginning of winter, but the specimens so found are all of the short-winged race.

## MEGASPILUS CANADENSIS.

*Eumegaspilus canadensis*, Ashmead, Can. Ent., xx, p. 49.

*Megaspilus canadensis*, Ashmead, Monog. N. A. Proc., p. 117.

Type ♀ in Coll. Ashmead, from Ottawa. Four ♀♀ taken in August with the preceding species, of which it is probably a variety.

One ♀, collected by the Rev. J. H. Keen at Massett, Queen Charlotte Islands, B. C., received through Dr. Fletcher, seems identical with this species.

## Tribe II.—CERAPHRONINI.

## CERAPHRON MINUTUS.

*Megaspilidea minuta*, Ashmead, Can. Ent., xx, p. 49.

*Ceraphron minutus*, Ashmead, Monog. N. A. Proc., p. 125.

Type ♀ in Coll. Ashmead, from Ottawa. Five ♀♀ from same locality, of which three were sifted from swamp mosses.

## CERAPHRON CRASSICORNIS.

*Ceraphron crassicornis*, Harrington, Can. Ent., xxxi, p. 77.

Type ♀ in Coll. Harrington, from Ottawa.

## CERAPHRON AURIPES.

*Ceraphron auripes*, Ashmead, Monog. N. A. Proc., p. 125.

Type ♀ in Coll. Ashmead, from Ottawa. The wings of this specimen are described as extending only to base of abdomen, but a second ♀ in my collection (determined by Ashmead) has fully developed wings.

## CERAPHRON MELANOCEPHALUS.

*Copidosoma melanocephalum*, Ashmead, Trans. Am. Ent. Soc., xiii, p. 131.

*Ceraphron melanocephalus*, Ashmead, Monog. N. A. Proc., p. 126.

One ♀ apparently of this species, from Hull, 19th August.

## CERAPHRON PALLIDIVENTRIS.

*Ceraphron pallidiventris*, Ashmead, Monog. N. A. Proc., p. 126.

Two ♀♀ captured in August near Ottawa.

## CERAPHRON BASALIS.

*Ceraphron basalis*, Ashmead, Monog. N. A. Proc., p. 127.

Four ♀♀ and three ♂♂, taken near Hull in August.

## CERAPHRON PUNCTATUS.

*Ceraphron punctatus*, Ashmead, Monog. N. A. Proc., p. 127, pl. vii, fig. 2, ♀.

Two ♀♀ and two ♂♂, taken on 27th August, 1898, near Hull.

## CERAPHIRON AMPLUS.

*Ceraphron amplus*, Ashmead, Monog. N. A. Proc., p. 129.

Fourteen ♀♀, from Ottawa, in August.

## CERAPHIRON MELANOCERUS.

*Ceraphron melanocerus*, Ashmead, Monog. N. A. Proc., p. 129.

Two type ♀♀ in Coll. Ashmead, from Ottawa. Eleven ♀♀ and eight ♂♂ obtained by sweeping herbage and sifting moss. The species was especially abundant in August, 1897.

## CERAPHIRON PEDALIS.

*Ceraphron pedalis*, Ashmead, Monog. N. A. Proc., p. 130.

The ♀ of this species appears to be common about Ottawa in August, but the ♂ is rare. One ♀ taken also on 13th May and one sifted from moss in November.

## CERAPHIRON FLAVISCAPUS.

*Ceraphron flaviscapus*, Ashmead, Monog. N. A. Proc., p. 130.

Three ♀♀, one of which was from moss collected in November at Dow's Swamp, Ottawa; the others taken near Hull in August.

## APHANOGMUS BICOLOR.

*Aphanogmus bicolor*, Ashmead, Monog. N. A. Proc., p. 134.

Type ♀ in Coll. Ashmead, from Ottawa. The type, as well as two ♀♀ in my collection, were obtained by sifting moss, and are apterous. A ♀ taken near Hull, 2nd August, 1897, has, however, fully developed wings, and is slightly smaller.

## APHANOGMUS MARYLANDICUS.

*Aphanogmus marylandicus*, Ashmead, Monog. N. A. Proc., p. 135.

Seven ♀♀ and two ♂♂ taken at Ottawa and Hull in August appear to belong to this species, although the legs, including coxæ, are entirely pale, the body is microscopically punctate, and the mesopleura faintly aciculate.

A ♀ which I found upon a fungus at Parrsboro', N. S., in September, 1897, may belong to this species, but the scape is pale and the abdomen piceous.

## APHANOGMUS SALICICOLA.

*Aphanogmus salicicola*, Harrington, Can. Ent., xxxi, p. 78.

One ♀ and two ♂♂ bred from cecidomyid galls on willow; Ottawa.

## APHANOGMUS PALLIDIPES.

*Aphanogmus pallidipes*, Ashmead, Monog. N. A. Proc., p. 135.

One ♀ apparently referable to this species, from moss; Ottawa.

## APHANOGMUS VIRGINIENSIS.

*Aphanogmus virginicus*, Ashmead, Monog. N. A. Proc., p. 135.

One ♀ and one ♂, 27th August, 1898, Hull. The band on wing is scarcely perceptible in the female.

## Subfamily V.—SCELIONINÆ.

## Tribe I.—TELENOMINI.

## TRIMORUS AMERICANUS.

*Trimorus americanus*, Ashmead, Monog. N. A. Proc., p. 139.

One ♀ taken 15th August, 1897, Hull, Que.

## PHANURUS OVIVORUS.

*Phanurus ovivorus*, Ashmead, Monog. N. A. Proc., p. 140.

One ♀ taken 16th October, 1897, in my library, upon a window-pane, Ottawa.

This specimen agrees fully with description, and has also been carefully compared with a specimen received from Ashmead. The mandibles, however, which are open and thus easily examined, are trifid instead of bifid, as given in generic description.

## TELENOMUS GRACILICORNIS.

*Telenomus gracilicornis*, Ashmead, Monog. N. A. Proc., p. 149.

Type ♀ in Coll. Ashmead, from Ottawa. Four ♀♀ and one ♂, also from same district. The ♂ was taken on 2nd August, near Hull; one ♀ at Chelsea on 3rd October; two from moss collected on Experimental Farm in November, and one from moss from Dow's Swamp, same month.

## TELENOMUS GRAPTÆ.

*Telenomus graptæ*, Howard, Scud. But. New Eng., p. 1896, pl. 89, fig. 9.

*Telenomus graptæ* (How.), Ashmead, Monog. N. A. Proc., p. 151.

Twenty-five ♀♀ and six ♂♂, bred from two eggs of *T. polyphemus* found upon a hickory-leaf, Hull (Can. Ent., xxviii, p. 79), seem to belong to this species. Mr. Howard states (*loc. cit.*) that he received from Prof. Scudder a female which he could not separate from this species, and which was bred from the egg of *Limnochares taumas*, collected at Nipigon in 1888.

## TELENOMUS ORGYLE.

*Telenomus orgyle*, Fitch, Eighth N. Y. Rept., p. 197.

*Telenomus orgyle* (Fitch), Ashmead, Ent. Am., iii, p. 100.

*Telenomus orgyle* (Fitch), Ashmead, Monog. N. A. Proc., p. 152.

Twenty-three ♀♀ and three ♂♂, reared from eggs of *Orgyle*; Ottawa.

## TELENOMUS PODISI.

*Telenomus podisi*, Ashmead, Monog. N. A. Proc., p. 158.

Five ♀♀ and three ♂♂ collected in August, Hull and Ottawa. Two ♀♀ and three ♂♂ reared by Dr. Fletcher from eggs of *Podisus* sp., obtained at Dog Lake, Okanagan Valley, B. C., in July, 1895.

## TELENOMUS PAMPHILE.

The following hitherto unpublished description of this species was drawn up by Mr. Ashmead and sent by him to Dr. Fletcher in September, 1894, under the title, "An egg-parasite of *Pamphila metacomet*."

*Telenomus pamphile*, sp. nov.

♀.—Length 1 mm. Black, polished, except the mesonotum, which is subopaque, sparsely microscopically punctate, and clothed with a pubescence. Head a little more than thrice as wide as long antero-posteriorly, smooth and shining, except a faint microscopic punctuation on vertex posteriorly, only visible under a strong lens; eyes oval, very faintly and sparsely pubescent; mandibles rufotestaceous; palpi whitish; antennæ eleven-jointed, black or brown-black, the flagellum, including the pedicel, not quite twice as long as the scape, the first funicular joint about one-third longer than the pedicel, the second about half the length of the first, the third a little smaller than the second, the fourth moniliform; the first joint of the club is the same length as the fourth funicular joint, but nearly twice its width, the club joints 2, 3 and 4 are larger, quadrate, and about of an equal size, the last, or joint 5, being conical. Legs brown-black, the trochanters, all knees and tarsi, except their last joint, and the anterior tibiæ and extreme apex of middle and hind tibiæ, honey-yellow. Wings hyaline, the venation fuscous or brownish, the marginal vein being scarcely half the length of the stigmal, while the postmarginal is fully one and a half times as long as the stigmal. Abdomen broadly oval, smooth and highly polished, except the short petiole and the second segment at extreme base (in the suture), which are striated; the second segment is very little longer than wide, and occupies most of the surface, the terminal segments being extremely short and retracted within the second.

Habitat.—Ottawa, Canada.

Described from two ♀ specimens bred in September, 1894, by Mr. James Fletcher, from the eggs of *Pamphila metacomet*.

The species approaches nearest to *T. utahensis* Ashm., taken by Mr. Schwarz in Utah, but differs in the relative length of the antennal joints and in having a longer second abdominal segment. (W. H. Ashmead, September 30th, 1894.)

## TELENOMUS CÆLODASIDIS. (?)

*Telenomus cæloidasidis*, Ashmead, Monog. N. A. Proc., p. 159.

Three ♀♀ and two ♂♂ reared from a cluster of hemipterous eggs upon a hickory-leaf; Hull.

## TELENOMUS HULLENSIS, sp. nov.

♀.—Length 1 mm. Black, subopaque. Head transverse, closely punctate or shagreened, with a carina between antennæ and a fovea beneath middle ocellus;

eyes large, oval, almost naked; antennæ eleven-jointed, black, pedicel shorter and stouter than first flagellar joint, second and third together as long as first, fourth transverse, nearly as wide as club, club-joints wider than long, the last conical; mouth parts entirely black. Thorax convex, closely punctate with linear rugosities posteriorly, scutellum convex, finely punctate. Marginal vein one-third shorter than stigmal, nervures brownish. Legs black, the knees and tarsi and anterior tibiae in part rufous. Abdomen highly polished, first segment striate, and second segment with punctures or short striæ at base.

Described from one specimen collected near Hull on 27th August, 1898. This insect is easily distinguished from our other species by the sculpture of mesothorax.

? *TELENOMUS RUFONIGER*.

*Telenomus rufoniger*, Provancher, *Add. et Corr.*, p. 403, ♂.

*Telenomus rufoniger* (Prov.), Ashmead, *Monog. N. A. Proc.*, p. 161.

The insect was taken at Cap Rouge, Que., but, as Mr. Ashmead says, it does not belong to *Telenomus*, and is probably a *Ceraphronid*.

*TRISSOLCUS EUCHISTI*.

*Telenomus euchistus*, Ashmead, *Bull. No. 3, Kans. Ex. Stn., App.*, p. 11, 1888.

*Trissolcus euchisti*, Ashmead, *Monog. N. A. Proc.*, p. 162.

One ♂ from Ottawa. Thirteen ♀♀ and one ♂ reared by Dr. Fletcher from eggs of *Euchistus* sp., obtained at Dog Lake, Okanagan Valley, B. C., July, 1895. One ♀ taken on Gabriola Island, V. I., on 11th May, 1897, by Rev. G. W. Taylor.

The specimens from Dog Lake, though apparently belonging to this species, are slightly larger than types received from Mr. Ashmead, and the legs, except coxæ and middle and posterior femora in part, are honey-yellow or rufous.

Tribe II.—*BÆINI*.

*ACOLOIDES SAITIDIS*.

*Acoloides saitidis*, Howard, *Insect Life*, ii., p. 270, fig. 58; *loc. cit.*, p. 359.

*Acoloides saitidis* (How.), Ashmead, *Monog. N. A. Proc.*, p. 171.

Numerous ♀ and ♂ specimens reared in 1896 from eggs of spiders, Ottawa: *Can. Ent.*, xxviii, p. 79. Two ♀♀ collected by Rev. J. H. Keen, at Massett, Q. C. I., and received through Dr. Fletcher, differ from description in having the coxæ paler.

*ACOLOIDES BICOLOR*.

*Acoloides bicolor*, Ashmead, *Monog. N. A. Proc.*, p. 172.

Two type ♀♀ in Coll. Ashmead, from Ottawa.

*ACOLOIDES SUBAPTERUS*.

*Acoloides subapterus*, Ashmead, *Monog. N. A. Proc.*, p. 173.

Type ♀ in Coll. Ashmead, from Ottawa. Also in my collection one ♀, obtained from moss, Ottawa; this specimen has well-developed wings.

## ACOLOIDES SEMINIGER.

*Acoloides seminiger*, Ashmead, Monog. N. A. Proc., p. 173.

Two type ♀ ♀ in Coll. Ashmead, from Ottawa. In my collection fourteen ♀ ♀; of these two were taken near Hull on 22nd August, and the remainder obtained from moss collected at the end of November at Experimental Farm and Dow's Swamp, Ottawa.

## CERATOLEUS BINOTATUS.

*Ceratoleus binotatus*, Ashmead, Monog. N. A. Proc., p. 176.

Six ♀ ♀ from moss in November, Ottawa, of which two have wings. This species is superficially very similar to the preceding, but is easily separated microscopically.

## BEUS MINUTUS.

*Beus minutus*, Ashmead, Monog. N. A. Proc., p. 178.

Two type ♀ ♀ in Coll. Ashmead, from Ottawa. The ♀ of this diminutive insect is quite common in moss collected in Dow's Swamp in November, and occurs also in moss from the Experimental Farm. One ♀ was taken with sweeping-net near Hull on 21st August.

## BEUS NIGER.

*Beus niger*, Ashmead, Monog. N. A. Proc., p. 178.

Two ♀ ♀ from moss, Ottawa, and one at Hull, 24th September. The species is more robust and blacker than the next species.

## BEUS PICEUS.

*Beus piceus*, Ashmead, Monog. N. A. Proc., p. 179.

Type ♀ in Coll. Ashmead, from Ottawa, and one ♀ in my collection. I find it difficult to separate this species from the larger specimens of *B. minutus*.

## BEUS AMERICANUS.

*Beus americanus*, Howard, Insect Life, ii, p. 270, fig. 59, ♀.

*Beus americanus* (How.), Ashmead, Monog. N. A. Proc., p. 179, pl. viii, fig. 9, ♂ ♀.

One ♀ captured on the under surface of a stone on 15th May, 1890, near Hull.

## Tribe III.—TELEASINI.

## PENTACANTHA CANADENSIS.

*Pentacantha canadensis*, Ashmead, Can. Ent., xx, p. 51, 1888; Monog. N. A. Proc., p. 182, pl. viii, fig. 1, ♀.

Type ♀ in Coll. Ashmead, from Ottawa. Two more ♀ ♀ taken in June.

## PROSACANTHA MELANOPUS.

*Prosacantha melanopus*, Ashmead, Monog. N. A. Proc., p. 189.

Type ♀ in Coll. Ashmead and one ♀ in mine, from Ottawa.

## PROSACANTHA PENNSYLVANICA.

*Prosacantha pennsylvanica*, Ashmead, Monog. N. A. Proc., p. 189.

One ♀ from moss from Dow's Swamp, Ottawa, seems to belong to this species.

## PROSACANTHA CARABORUM.

*Prosacantha caraborum*, Riley, Ashm. Monog. N. A. Proc., p. 191, pl. vii, fig. 4, ♀.

One ♀ captured near Hull, Que., on 14th August, 1897.

## PROSACANTHA LANELLII.

*Prosacantha Lanellii*, Ashmead, Monog. N. A. Proc., p. 195.

One ♀ captured on Kettle Island, near Ottawa, 18th August, 1897.

## TELEAS CANADENSIS.

*Teleas canadensis*, Harrington, Can. Ent., xxxi, p. 78.

Type ♀ in my collection, taken 26th August, 1894, Hull, Que.

## HOPOGRYON LONGIPENNIS.

*Hoplogryon longipennis*, Ashmead, Monog. N. A. Proc., p. 202, pl. viii, fig. 6, ♀.

Two type ♀♀ in Coll. Ashmead, from Ottawa. Also two ♀♀, one ♂ in May, June and August, Hull and Ottawa. The antennæ of the ♂ are long and black; pedicel small, rounded; first flagellar joint slightly shorter than second, third subequal with second, slightly thickened and angulated, remaining joints subequal, slightly longer towards apex, terminal joint as long as the second. The generic description of *Hoplogryon* says of the ♂ antennæ, "flagellar joints all cylindrical, the third not angulated," but in *H. brachypterus* ♂ the third joint is also angulated.

## HOPOGRYON CLARIPENNIS.

*Hoplogryon claripennis*, Ashmead, Monog. N. A. Proc., p. 203.

One ♀ taken at Hull, 22nd August, 1897.

## HOPOGRYON OBSCURIPES.

*Hoplogryon obscuripes*, Ashmead, Monog. N. A. Proc., p. 204.

Two type ♀♀ in Coll. Ashmead, from Ottawa. Five others from moss in November, Ottawa, and by sweeping herbage, August, Hull.

## HOPOGRYON MINUTISSIMUS.

*Prosacantha minutissima*, Ashmead, Ent. Am., iii, p. 117, ♀.

*Hoplogryon minutissimus*, Ashmead, Monog. N. A. Proc., p. 202.

Twelve ♀♀ collected in August, Hull and Ottawa, agree with description, but may be only a winged form of the preceding species.

## HOPLOGRYON BRACHYPTERUS.

*Prosacantha brachyptera*, Ashmead, Can. Ent., xx, p. 50.

*Hoplogryon brachypterus*, Ashmead, Monog. N. A. Proc., p. 204.

Several type ♀♀ in Coll. Ashmead, from Ottawa. This is our commonest species; numerous ♀♀ have been obtained from moss in the early winter, and also by the sweeping-net in August and September, Hull and Ottawa. Two ♂♂ were taken at Hull in July and August.

The antennæ of the ♂ are very long and slender, with long hairs; scape pale; the pedicel is rounded and slightly swollen; first flagellar joint one-half longer than scape, remaining joints each subequal with scape, very slender and attenuated at extremity. The wings are long and slightly ciliated.

## HOPLOGRYON SOLITARIUS.

*Hoplogryon solitarius*, Ashmead, Monog. N. A. Proc., p. 205.

Type ♂ in Coll. Ashmead, from Ottawa. One ♂ taken near Hull, 5th August, 1894, answers to description, but third joint of flagellum is angulated.

## GRYON FLAVIPES.

*Gryon flavipes*, Ashmead, Monog. N. A. Proc., p. 208.

Type ♀ in Coll. Ashmead. Thirteen ♀♀ from moss in November, and by sweeping in August, Hull and Ottawa.

## GRYON CLAVATUS.

*Trichasius clavatus*, Provancher, Add. et Corr., p. 209.

*Bæus clavatus* (Prov.), Harrington, Insect Life, ii, p. 359.

*Bæus clavatus* (Prov.), Ashmead, Monog. N. A. Proc., p. 179.

Type ♀ in my collection, from Ottawa; also two ♀♀ sifted from moss.

In referring this insect to *Bæus* (*loc. cit.*), I used only a hand lens in examining it, but having remounted it and examined it microscopically, it proves to belong to the genus *Gryon*. Except in colour the species seems almost identical with the preceding one, and may be only a pale form of it.

## GRYON BOREALIS.

*Acolus borealis*, Ashmead, Can. Ent., xx, p. 50.

*Gryon borealis*, Ashmead, Monog. N. A. Proc., p. 207, pl. viii, fig. 7, ♀.

Type ♀♀ in Coll. Ashmead, from Ottawa. The ♀ occurs abundantly with the next species, Hull and Ottawa. One ♂ on 1st August, Ottawa.

The ♂ antennæ are hardly longer than the body, the joints relatively shorter and stouter than in *G. canadensis*. Abdomen more polished, legs paler, size larger.

## GRYON CANADENSIS.

*Acolus canadensis*, Ashmead, Can. Ent., xx, p. 50.

*Gryon canadensis*, Ashmead, Monog. N. A. Proc., p. 207.

Type ♀♀ in Coll. Ashmead, from Ottawa. Females very abundant in moss and in sweepings, Hull and Ottawa. One ♂ at Hull, 7th August, 1897.

The ♂ antennæ are pubescent and very slender, much longer than the body.

## GRYON COLUMBIANUS.

*Gryon columbianus*, Ashmead, Monog. N. A. Proc., p. 208, ♀.

Three ♀♀ from moss from Experimental Farm, Ottawa; one ♂, 15th August, 1897, Hull.

## Tribe IV.—SCELIONINI.

## CALOTELEIA MARLATTII.

*Caloteleia Marlattii*, Ashmead, Monog. N. A. Proc., p. 214.

Fourteen ♀♀ and three ♂♂ obtained by sweeping herbage in hickory grove, Hull. Except one ♂ taken on 9th June, 1895, all the specimens occurred toward the end of August. Individuals vary somewhat in colour; the front centrally is polished, with scattered coarse punctures, which are more numerous around mouth and eyes; central tooth of mandible very small, and almost undistinguishable in one specimen; terminal segment of ♀ narrowed and pubescent.

## BARYCONUS CINCTUS.

*Baryconus cinctus*, Harrington, Can. Ent., xxxi, p. 79.

Three type ♀♀ taken with sweeping-net in sandy pasture, August, Ottawa.

## BARYCONUS BICOLOR.

*Baryconus bicolor*, Harrington, Can. Ent., xxxi, p. 79.

Ten type ♀♀ and four type ♂♂ with above, August, Ottawa.

## MACROTELEIA VIRGINIENSIS.

*Macroteleia virginensis*, Ashmead, Monog. N. A. Proc., p. 218.

One ♀ and five ♂♂ from hickory grove, Hull, August. The specimens vary somewhat in colour of legs and of scape of antennæ; the coxæ are black, except of one ♂.

## OPISTHACANTHA MELLIPES.

*Opisthacantha mellipes*, Ashmead, Monog. N. A. Proc., p. 221, pl. ix, fig. 4, ♀.

One ♀ from Ottawa.

## HOPILOTELEIA FLORIDANA.

*Baryconus floridanus*, Ashmead, Ent. Am., iii, p. 118.

*Hoploateleia floridana*, Ashmead, Monog. N. A. Proc., p. 228, pl. x., fig. 1, ♂.

One ♀ taken at Hull, 26th August, 1894. The fifth and sixth segments of abdomen are coarsely punctured, the sixth truncate or semi-circularly emarginate, with short lateral teeth; tarsi dark, the hinder ones black.

## HADRONOTUS BREVIENNIS, sp. nov.

♀.—Length 1.12 mm. Head and thorax black, coarsely punctate, subopaque. Head transverse, wider than thorax; lateral ocelli near eyes, which are large and not visibly pubescent; face closely punctured, but more shining than vertex; above the antennae there is a polished depression, with an acute central carina; the cheeks very closely punctulate, with delicate striae near mouth; mandibles rufous. Antennae with scape pale, funicle variable and club black; pedicel as long as joints one and two of funicle; first funicular slightly longer than thick, second and third subequal, rounded, fourth minute and transverse; club compact, six-jointed, the first small, remainder transverse, broad, the terminal joint conical, as long as two preceding. Thorax without indications of mesonotal furrows, finely pubescent; scutellum semi-circular, metathorax short, angles not prominent; legs, including coxae, uniformly yellowish. Wings usually abbreviated; only one ♀ has wings reaching tip of abdomen, in two or three they reach almost to tip of second segment, but in all the other specimens they extend only to, or but little beyond, the tip of first segment. Abdomen ovoid, polished, with sparse, rather long pubescence; first and second segments faintly striate; the second segment is longer than first and as long as all the following; first two yellow, remainder more or less brown or black.

♂.—Resembles ♀ in coloration, but is somewhat more shining, and the wings are fully developed, extending well beyond abdomen, hyaline and subpubescent, marginal vein thickened, half as long as the oblique stigmal, postmarginal long. The antennae are filiform, rather short and pubescent; scape pale, pedicel slightly longer than thick, first flagellar joint as large as pedicel, second nearly as long and slightly compressed, third larger, somewhat swollen and angulated, four to nine subequal, one-third longer than thick, last joint elongate, acuminate, as long as the first.

Described from fifteen ♀♀ and two ♂♂ taken in the neighbourhood of Hull in August and September.

## SPARASION PACIFICUM.

*Sparasion pacificum*, Ashmead, Monog. N. A. Proc., p. 239.

One ♀ and five ♂♂ of this interesting form were collected for me by Mr. C. DeBlois Green, of Osoyoos, Okanagan Valley, B. C.

## SCELIO OVIVORUS.

*Catoptenobia ovivora*, Riley, First Rep. U. S. Ent. Comm., p. 356.

*Scelio famelicus*, Riley, nec. Say, Second Rep. U. S. Ent. Comm., p. 270.

*Scelio ovivorus* (Riley), Ashmead, Ent. Am., iii, p. 119; Monog. N. A. Proc., p. 243.

One ♂ taken on 15th August, 1897, at Hull, Que.

## SCELIO OPACUS.

*Acerota opaca*, Provancher, Add. et. Corr., p. 184, ♀.

*Scelio opacus* (Prov.), Ashmead, Monog. N. A. Proc., p. 245.

Type ♀ in Coll. Provancher, from Cap Rouge, Que. Three ♂♂ taken in August, Hull and Ottawa.

## Subfamily VI.—PLATYGASTERINÆ.

## Tribe I.—INOSTEMMINI.

## METACLISIS ERYTHROPUS.

*Metacclisis erythropus*, Ashmead, Can. Ent., xx, p. 51; Monog. N. A. Proc., p. 252.

Type ♀ in Coll. Ashmead, from Ottawa.

## ISOSTASIUS MUSCULUS.

*Isostasius musculus*, Ashmead, Can. Ent., xix, p. 126; Monog. N. A. Proc., p. 255, pl. xi, fig. 5, ♀.

One ♀, 27th August, 1898, Ottawa.

## ? ISOSTASIUS ARHETINUS.

*Isostasius arhetinus*, Provancher, Add. et Corr., p. 183, ♀.

*Baconera arhetina*, Provancher, *ibid.*, p. 403.

*Isostasius arhetinus* (Prov.), Ashmead, Monog. N. A. Proc., p. 255.

Type ♀ in Coll. Provancher, from Cape Rouge, Que. Evidently this insect is a *Ceraphronid*, and the description answers very well to *Mejaspilus Harringtoni*, Ashm.

## Tribe II.—PLATYGASTERINI.

## AMBLYASPIS PETIOLATUS.

*Amblyaspis petiolatus*, Ashmead, Monog. N. A. Proc., p. 268.

Numerous ♀ and ♂ specimens apparently belonging to this species, from Hull and Ottawa, August and September. There is considerable variation in specimens, and possibly they represent more than one species.

## LEPTACIS STRIATIFRONS. ?

*Leptacis striatifrons*, Ashmead, Monog. N. A. Proc., p. 273.

One ♂, taken on old racecourse, Ottawa, 1st August, is doubtfully referred to this species.

## LEPTACIS BREVIVENTRIS.

*Leptacis brevicentris*, Ashmead, Monog. N. A. Proc., p. 273.

Four ♀♀, three ♂♂ from Ottawa, August.

## LEPTACIS FLAVICORNIS.

*Leptacis flavicornis*, Ashmead, Monog. N. A. Proc., p. 275.

Three ♀♀, four ♂♂ from Hull and Ottawa in August.

## POLYMECUS CANADENSIS.

*Ectadius canadensis*, Ashmead, Can. Ent., xx, p. 51.

*Polymecus canadensis*, Ashmead, Monog. N. A. Proc., p. 278.

Type ♀ in Coll. Ashmead, from Ottawa. One ♀ and one ♂ taken in June near Hull.

## POLYMECUS PALLIPES.

*Ectadius pallipes*, Ashmead, Bull. No. 1 Col. Biol. Ass., p. 9, 1895.

*Polymecus pallipes*, Ashmead, Monog. N. A. Proc., p. 279, pl. xii, fig. 3, ♀.

Two ♀♀ and one ♂, June, Hull, Que.

## POLYMECUS NIGRIFEMUR.

*Ectadius nigrifemur*, Ashmead, Bull. No. 1 Col. Biol. Ass., p. 10.

*Polymecus nigrifemur*, Ashmead, Monog. N. A. Proc., p. 280.

One ♀ taken 13th May, Ottawa.

## POLYMECUS VANCOUVERENSIS.

*Polymecus vancouverensis*, Ashmead, Monog. N. A. Proc., p. 281.

Type ♀ in Coll. Ashmead, collected by Rev. G. W. Taylor, Victoria, V. I. Mr. Taylor has also sent to me a ♀ and ♂ taken by him at Gabriola Island, V. I., on 12th April, 1887.

## POLYMECUS PICIPES.

*Polymecus picipes*, Ashmead, Monog. N. A. Proc., p. 282.

Three ♀♀ taken at Hull and Ottawa in June and August. The ♀ taken in August is considerably smaller and is possibly distinct.

## POLYMECUS MELLISCAPUS. ?

*Polymecus melliscapus*, Ashmead, Monog. N. A. Proc., p. 282.

One ♀ taken 19th June, at Ottawa, is doubtfully referred to this species.

## POLYMECUS AURIPES.

*Polymecus puripes*, Ashmead, Monog. N. A. Proc., p. 283.

Two ♀♀ taken at Hull on 7th and 21st August.

SACTOGASTER VARIPES, *sp. nov.*

♀.—Length 0.7 mm. Black, microscopically punctate. Legs piceous, base of tibiae and tarsi yellowish. Scape of antennae pale. Scutellum with sharp awl-like spine; sides of metathorax and base of abdomen with silvery pubescence.

Terminal segments of abdomen forming deflexed tail, which is shorter than second segment; second segment polished, terminal segment finely punctulate.

♂.—Closely resembles ♀ except in shape of abdomen and antennæ.

Described from one ♀ and one ♂ taken in August, Hull. The female very closely resembles *S. anomaliventris*, except in the shape of second ventral segment, which is much flatter.

TRICHACIS AURIPES.

*Trichasis auripes*, Provancher, Add. et Corr., p. 403, ♀.

*Trichasis auripes* (Prov.), Ashmead, Monog. N. A. Proc., p. 297.

Type ♀ in Coll. Provancher, from Cap Rouge.

ERITRISOMERUS PALLIPES, *sp. nov.*

♀.—Length 1.2-1.5 mm. Rufo-piceous, legs yellowish. Head broad, darker than thorax, microscopically punctate or shagreened; lateral ocelli as far from the eyes as from central one; antennæ yellow, the club dusky, the pedicel as long as first two joints of flagellum, club joints subquadrate. Thorax and abdomen rufo-piceous, petiole paler; metathorax and petiole pubescent.

♂.—Closely resembles ♀ in size and coloration. Antennæ paler; pedicel small, first joint of flagellum minute, closely joined to the swollen second joint, the two together almost egg-shaped, first joint of club small, subtriangular, the following joints quadrate, subpedicellate, terminal joint longer, acuminate.

Described from several ♀ and ♂ specimens obtained near Hull in August.

POLYGNOTUS, *sp.*

Twenty-seven specimens bred from cecidomyid galls on stems of *Muhlenbergia*, by Dr. Fletcher, do not seem to answer to any described species.

POLYGNOTUS VITICOLA.

*Polygnotus viticola*, Ashmead, Monog. N. A. Proc., p. 313.

One ♂ taken 27th August, 1878, at Hull, distinguished by the punctate ventral segments and the hairy antennæ.

POLYGNOTUS, *sp.*

Numerous specimens bred from fleshy galls formed upon the twigs of *salix* by Cecidomyids. Mr. Ashmead, some years ago, determined specimens of this species as *Platygaster error*, Fitch (Monog. N.A. Proc., p. 291) but although apparently our commonest species, it does not seem to me to be among those described. Other members of this genus occur, but my material is scanty and I have not had time to satisfactorily study them.

PLATYGASTER OBSCURIPENNIS.

*Platygaster obscuripennis*, Ashmead, Monog. N. A. Proc., p. 325.

Types ♀ and ♂ in Coll. Ashmead, from Ottawa. One ♀ and two ♂ also in my collection bred from galls on willows.

## PLATYGASTER HERRICKII.

*Platygaster Herrickii*, Packard, Third Report U. S. Ent. Comm., p. 220.

*Platygaster Herrickii* (Pack.), Ashmead, Monog. N. A. Proc., p. 324.

*Aneurhynchus ancurus*, Provancher, Add. et Corr., p. 176.

Type ♂ of Provancher's species in Coll. Ashmead, from Ottawa. One ♀ and three ♂♂ also from Ottawa.

## PLATYGASTER ACICULATUS?

*Platygaster aciculatus*, Ashmead, Monog. N. A. Proc., 326.

Six ♀♀ and two ♂♂ bred from galls of *Euura* and *Cecidomyia* on willows. The specimens do not quite answer to description, but have the pleuræ strongly aciculated, and in some other points agree fairly well.

## ISOCYBUS PALLIPES.

*Platygaster pallipes*, Say, Cont. Maclurian Lycum, i, p. 80; Lec. Ed. Say, i, p. 383.

*Isocybus pallipes* (Say), Ashmead, Monog. N. A. Proc., p. 328, pl. xiii, fig. 4.

One ♀ from Ottawa agrees very well with description; it is more densely punctured and opaque than the following species.

## ISOCYBUS CANADENSIS.

*Platygaster canadensis*, Provancher, Add. et Corr., p. 181.

*Isostasius canadensis*, Provancher, *ibid.*, p. 403.

*Monocrita canadensis*, Ashmead, Can. Ent., xix, p. 126.

*Isocybus canadensis* (Prov.), Ashmead, Monog. N. A. Proc., p. 329.

Described from Ottawa specimens, and types of both sexes are in Coll. Ashmead. Twelve ♀♀ and twenty-eight ♂♂ from Ottawa district. It occurs in May, and on the 13th of that month it was very abundant, one year, about some alders near Hull. I obtained it also at Casselman on 24th May. Dr. Fletcher took two females at Brandon, Man., in July, 1895.

Individuals vary greatly in the sculpture of mesonotum and pleuræ, and somewhat in colour of legs and antennæ and in the structure of latter; all, however, seem referable to one species.

## Subfamily VII.—HELORINÆ.

## HELORUS PARADOXUS.

*Copelus paradoxus*, Provancher, Nat. Can., p. 207; Faune Ent. Can., ii, p. 540.

*Helorus paradoxus*, Provancher, Add. et Corr., p. 405.

*Helorus paradoxus* (Prov.), Ashmead, Monog. N. A. Proc., p. 331.

The two ♀ types of species were taken at Cap Rouge, Que. Two ♀♀, Ottawa, of which one was taken at Kettle Island, 18th August, 1894.

## Subfamily VIII.—PROCTOTRYPINÆ.

DISOGMUS CANADENSIS, *sp. nov.*

♀.—Length 3.5 mm. Black, polished; legs rufous. Head transverse, wider than thorax, shaped much as in *P. rufogaster*, but the face somewhat more convex; clypeus and mandibles rufous, palpi yellowish; antennæ stout, rufous at base and dusky towards apex; scape short, subtriangular, pedicel annular, first joint of flagellum as long as scape and pedicel, remaining joints gradually shorter, not much longer than thick, or half as long as first, joints beyond ninth wanting (having been broken in transmission by mail). Thorax with deep mesonotal furrows, abbreviated posteriorly, scutellum polished, convex, with transverse fovea at base, between each end of fovea and base of wing a few short striae. Metathorax rugosely foveolate, not distinctly areolated. Petiole punctured at base, striate at tip; abdomen oval, acuminate, black above, rufo-piceous at sides and beneath, cauda slender, yellow, half as long as abdomen. Wings hyaline, subpubescent; nervures brownish, the stigma elongate, more than twice as long as wide, marginal cell large, triangular, as long as stigma. Legs, including coxæ, honey-yellow, tibial spurs stout.

Described from one ♀ taken at Ottawa several years ago. The specimen was sent with other material to Mr. Ashmead, when he was writing his Monograph, and was returned labelled *P. cellaris*, n. sp.

## PROCTOTRYPES CAUDATUS.

*Proctotrypes caudatus*, Say, Long's Sec. Exp., ii, p. 329; Sec. Ed. Say, i, p. 221.

*Proctotrypes caudatus*, Patton, Can. Ent., xi, p. 64.

*Proctotrypes caudatus* (Say), Ashmead, Monog. N. A. Proc., p. 335, pl. xiii, fig. 7, ♀.

One ♀ from Osoyoos, Okanagan Valley, B. C. (Greene), is referred to this species.

## PROCTOTRYPES RUFIGASTER.

*Proctotrypes rufigaster*, Provancher, Nat. Can., xii, p. 263; Faune Ent. Can., ii, p. 561.

*Proctotrypes rufigaster* (Prov.), Ashmead, Ent. Am., iii, p. 99; Monog. N. A. Proc., p. 336.

One ♀ and three ♂♂ recorded by Provancher (*loc. cit.*); locality not mentioned. One ♀ and five ♂♂ taken in August, Hull and Ottawa; one ♀ from Mr. J. D. Evans, Sudbury, Ont.; one ♂ taken at Winnipeg, July, 1895, by Dr. Fletcher.

## PROCTOTRYPES CALIFORNICUS.

*Proctotrypes californicus*, Holmgren, Kongl. Sv. Freg. Eug. Resa Ins., p. 434.

*Proctotrypes californicus* (Holm.), Ashmead, Monog. N. A. Proc., p. 338.

One ♂ in Coll. Ashmead, from Ottawa. One ♂ from Hull, 14th August.

## PROCTOTRYPES FLAVIPES.

*Proctotrypes flavipes*, Provancher, Nat. Can., xii, p. 264; Faune Ent. Can., ii, p. 562, ♀.

*Megaspilus lucens*, Provancher, Faune Ent. Can., ii, p. 808; Add. et Corr., p. 402.

*Proctotrypes flavipes*, (Prov.), Ashmead, Monog. N. A. Proc., p. 338.

Type ♀ in Coll. Provancher, from Cap Rouge, Que. Specimens in Coll. Ashmead from Ottawa. Two ♀♀ and one ♂ in my collection, Hull and Ottawa, August.

## PROCTOTRYPES ABRUPTUS.

*Proctotrypes abruptus*, Say, Bost. Jour, i, p. 278, ♀; Lec. Ed. Say, ii, p. 725.

*Proctotrypes abruptus* (Say), Provancher, Faune Ent. Can., ii., p. 562.

*Proctotrypes abruptus* (Say), Ashmead, Ent. Am., iii, p. 98; Monog, N. A. Proc., p. 339.

Eight ♀♀ captured upon Kettle Island, Ottawa, on 18th and 25th August. Provancher records ♂ and two ♀♀ from Province of Quebec.

## PROCTOTRYPES OBSOLETUS.

*Proctotrypes obsoletus*, Say, Bost. Jour., i, p. 277, ♀; Lec. Ed. Say, ii, p. 725.

*Proctotrypes obsoletus* (Say), Ashmead, Ent. Am., iii, p. 98; Monog. N. A. Proc., p. 340.

One ♂ from Ottawa determined by Mr. Ashmead. A ♀ collected at Massett, Q. C. I., by Rev. J. H. Keen, is doubtfully placed here. It may prove a new species on receipt of further material, as the specimen was in alcohol, with beetles, and the wings are destroyed, and it is otherwise in bad condition for determination.

## PROCTOTRYPES CAROLINENSIS.

*Proctotrypes carolinensis*, Ashmead, Monog. N. A. Proc., p. 341.

Thirty ♂♂ from Kettle Island, Hull and Ottawa, taken in August, appear to belong to this species. The head is thicker than in the species which precede, but not so quadrate or globose as in those which follow.

## PROCTOTRYPES MEDIUS.

*Proctotrypes medius*, Ashmead, Monog. N. A. Proc., p. 343, ♀.

Type ♀ in Coll. Ashmead, from Ottawa. One ♂ which may belong here taken 16th August, 1894, at Hull; it is much larger than the previous species.

## PROCTOTRYPES LONGICEPS.

*Proctotrypes longiceps*, Ashmead, Monog. N. A. Proc., p. 342.

Type ♀ in Coll. Ashmead, from Ottawa.

## PROCTOTRYPES CANADENSIS.

*Proctotrypes canadensis*, Ashmead, Monog. N. A. Proc., p. 342.

Type ♀ in Coll. Ashmead, from Ottawa. Ten ♀♀ captured in August, Hull and Ottawa.

## PROCTOTRYPES QUADRICEPS.

*Proctotrypes quadriceps*, Ashmead, Monog. N. A. Proc., p. 343.

Seven ♀♀ in August, from Hull and Ottawa. Differs from previous species chiefly in structure of antennæ. No males of either of these species have been taken, and it is possible that the males placed as *P. carolinensis* may, notwithstanding the difference in the shape of the head, belong to them, as they occur with them.

## Subfamily IX.—BELYTTINÆ.

## LEPTORHAPTUS RUFUS.

*Leptorhaptus rufus*, Ashmead, Monog. N. A. Proc., p. 350.

Two ♀♀ and one ♂, July and August, Hull and Ottawa.

## LEPTORHAPTUS CONICUS.

*Leptorhaptus conicus*, Ashmead, Monog. N. A. Proc., p. 350. pl. xiv. fig. 1, ♀.

One ♀ and two ♂♂, August, Kettle Island, Ottawa, Hull.

## MIOTA COLORADENSIS.

*Psilomma coloradense*, Ashmead, Bull. No. I, Col. Biol. Ass., p. 11.

*Miota coloradensis*, Ashmead, Monog. N. A. Proc., p. 352.

One ♀ captured at Hull in July.

## MIOTA AMERICANA.

*Psilomma americana*, Ashmead, Can. Ent., xix., p. 197.

*Miota americana*, Ashmead, Monog. N. A. Proc., 353.

Seven ♀♀ and one ♂. The ♂ was taken at Chelsea, Que., on 3rd October, and the other specimens in August, Kettle Island, Ottawa, Hull.

One ♀ was also obtained at Parrsboro', N. S., in September, 1897. This specimen was between the gills of a large agaric, which was literally a mass of dipterous larva. Several specimens of a species of *Eucoila* also occurred in the same fungus.

## MIOTA CANADENSIS.

*Miota canadensis*, Ashmead, Can. Ent., xxix, p. 54.

Type ♀ in Coll. Ashmead, from Hull. Two ♂♂ which probably belong to this species were also taken near Hull in August.

## MIOTA RUFOPLEURALIS.

*Miota rufopleuralis*, Ashmead, Can. Ent., xxix, p. 54.

Type ♀ in Coll. Ashmead, from Kings Mountain, Chelsea, Que., 12th August, 1894. Three ♀♀ taken near Gatineau River, Chelsea, on 3rd October, 1897.

## SCORPIOTELEIA MIRABILIS.

*Scorpioteleia mirabilis*, Ashmead, Can. Ent., xxiv, p. 53.

Type ♀ in Coll. Ashmead, from Ottawa (Kettle Island), 18th August, 1894.

## STYLIDOLON POLITUM.

*Stylidolon politum*, Ashmead, Can. Ent., xxix, p. 54.

Type ♀ in Coll. Ashmead, from Ottawa, 13th May, 1896.

## ACROPIESTA FLAVICAUDA.

*Acropiesta flavicauda*, Ashmead, Monog. N. A. Proc., p. 354, pl. xiv, fig. 3, ♀.

Type ♀ in Coll. Ashmead, from Ottawa.

## BELYTA ERYTHROPUS.

*Belyta erythropus*, Ashmead, Monog. N. A. Proc., p. 357.

Two ♀♀ and eight ♂♂ from Hull, Chelsea and Ottawa, August and October. One ♂ taken at Sudbury, Ont., on 12th July, 1889, by Mr. J. D. Evans.

BELYTA ROSTRATA, *sp. nov.*

♀.—Length 3.5 mm. Black, highly polished, sparsely pilose, legs honey-yellow. Head globose, narrower than thorax; eyes rather small, ocelli in equal-sided triangle; frontal prominence much produced, fully half the length of head; antennae stout, rufous, terminal joints darker; scape stout, as long as pedicel and first four joints of flagellum; pedicel rounded, slightly longer than wide; first joint of flagellum hardly twice as long as pedicel, joints beyond moniliform, subpedicellate, gradually larger toward apex, last joint obconic; palpi pale; face polished, with grooves extending from base of mandibles almost to apex of frontal prominence, apex punctate. Mesonotal furrows and transverse furrow between tegulae distinct; scutellum flat, fovea at base large and shallow. Metathorax smooth, with divided central and distinct lateral carinae, posterior angles prominent. Wings hyaline, nervures pale brownish; marginal vein shorter than the closed cell; tegulae rufous. Legs stout, honey-yellow, including coxae. Abdomen highly polished, terminal segments more pilose; petiole longer than wide, with irregular raised lines; base of second segment with median sulcus and a few short striae.

Described from one ♀ taken at Chelsea, Que., on the occasion of an excursion of the Ottawa Field-Naturalists' Club, on 3rd October, 1897.

The species agrees with *B. frontalis*, Ashm., in the prominent face, but the head is more globose, and the metathorax has a divided central carina.

## BELYTA TEXANA.

*Belyta texana*, Ashmead, Monog. N. A. Proc., p. 357.

One ♀ from Hull, Que., 2nd August, 1897.

## OXYLABIS SPINOSUS.

*Aenechynchus spinosus*, Provancher, Faune Hym. Can., ii, p. 560.

*Oxytabis spinosus*, Provancher, Add. et Corr., p. 405.

*Oxytabis spinosus* (Prov.), Ashmead, Monog. N. A. Proc., p. 358, pl. xiv, fig. 5, ♀.

Type ♀ in Coll. Provancher, from Cap Rouge, Que. One ♀ and four ♂♂ in August, Hull, Kettle Island, Ottawa. One ♂ taken at Casselman, Ont., 24th May. The development of the post scutellar spine varies considerably.

## CINETUS MELLIPES.

*Belgta mellipes*, Say, Bost. Jour. Nat. Hist., p. 279; Lec. Ed. Say, ii, p. 726.

*Xenotoma mellipes* (Say), Ashmead, Can. Ent., xix, p. 199.

*Cinetus mellipes* (Say), Ashmead, Monog. N. A. Proc., p. 361, pl. xiv, fig. 6, ♀.

Three ♀♀ and five ♂♂, Hull, Ottawa, Kettle Island, August; Chelsea, October.

## CINETUS SIMILIS.

*Cinetus similis*, Ashmead, Monog. N. A. Proc., p. 361.

One ♀ at Hull, 16th August, 1894; one ♀ from Mr. J. D. Evans, Trenton.

## XENOTOMA XANTHOPUS.

*Xenotoma xanthopus*, Ashmead, Monog. N. A. Proc., p. 363.

One ♀ collected on 15th August, 1897, near Hull, Que.

## XENOTOMA MANDIBULARIS.

*Xenotoma mandibularis*, Ashmead, Monog. N. A. Proc., p. 363, pl. xiv, fig. 7, ♀.

One ♀ taken 29th July, 1894, at Hull.

## ZELOTYPA LONGICORNIS.

*Zelotypa longicornis*, Ashmead, Monog. N. A. Proc., p. 365, pl. xv, fig. 1, ♂.

One ♀ from Ottawa in Coll. Ashmead.

## ZELOTYPA FLAVIPES. ?

*Zelotypa flavipes*, Ashmead, Monog. N. A. Proc., p. 365.

Two ♂♂ captured at Ottawa in August have been so determined by Mr. Ashmead; the mandibles are, however, acute, crossing each other at tips, as in the genus *Pantoclis*.

## ZELOTYPA FUSCICORNIS.

*Zelotypa fuscicornis*, Ashmead, Can. Ent., xxix, p. 55.

Type ♂ in Coll. Ashmead, from Hull, 23rd July.

## PANTOCLIS SIMILIS.

*Pantoclis similis*, Ashmead, Can. Ent., xxix, p. 55.

Type ♂ in Coll. Ashmead, taken 5th August, 1894, at Hull. Fourteen ♀♀ and twelve ♂♂ from Ottawa district. The species was abundant near Chelsea on 3rd October, 1897, and specimens have also been taken in August and September near Hull, on Kettle Island, and near the city.

## PANTOCLIS CANADENSIS.

*Pantoclis canadensis*, Ashmead, Can. Ent., xxix, p. 55.

Type ♀ in Coll. Ashmead, from Ottawa, 13th August, 1894. One ♀ and three ♂♂ which seem to belong to this species, from Hull and Ottawa, in June and August.

## PANTOCLIS ANALIS.

*Pantoclis analis*, Ashmead, Monog. N. A. Proc., p. 370, pl. xv, fig. 2, ♀.

One ♀ from Hull, 22nd August, 1897; larger and more robust than the previous species.

## PANTOCLIS CRASSICORNIS?

*Pantoclis crassicornis*, Ashmead, Monog. N. A. Proc., p. 369.

One ♀ from Hull, 16th August, 1894.

PANTOCLIS MANDIBULARIS, *sp. nov.*

♀.—Length 3 mm. Black, polished, with rather long sparse pubescence. Head transverse; palpi and mandibles pale, the latter long, crossing at tips. Antennæ, with scape and pedicel, yellowish, beyond black; pedicel not much longer than thick; first joint of flagellum about three times as long as pedicel; joints two, three and four decreasing slightly in length, five much shorter, but longer than six, which is subequal with pedicel; remaining joints moniliform, subpedicellate; eight and nine are the stoutest, and beyond these the joints are more elongate and slenderer, oval instead of spherical, the terminal pointed, as long as the fifth. Wings hyaline, nervures brownish; marginal vein longer than first abscissa of radius, marginal cell twice as long as the marginal vein. Legs yellow, the hind tibiæ and tarsi slightly darker. Tegulæ pale. Petiole of abdomen stout, strongly fluted; abdomen short and stout, slightly recurved at tip, the second segment piceous at base.

Described from one ♀ captured near Hull on 22nd August, 1897. The mandibles are larger than in our other species of *Pantoclis*, but the structure of the antennæ seems to separate it from *Xenotoma*, to which I was at first disposed to refer it. The antennæ differ from those of our other species of *Pantoclis* in being stoutest in middle of flagellum, and perceptibly slenderer towards apex.

## ZYGOTA AMERICANA.

*Zygota americana*, Ashmead, Monog. N. A. Proc., p. 373, pl. xv, fig. 3, ♂.

Types ♀♂ in Coll. Ashmead, from Ottawa. Forty ♀♀ and twenty ♂♂ from various localities in Ottawa district, occurring from May to October. One ♂ from Mr. J. D. Evans, which he captured at Sudbury in 1892.

The species, like the majority of our *Proctotrypids*, occurs most frequently in August, but in 1894 it was abundant in Hull on the 15th July, and on the 3rd October, 1897, it was common near Chelsea. One ♂ was taken as early as the 21st May. Individuals vary much in size,

from 2.5 mm. to 4.5 mm., and the antennæ of the females also show marked variations in the length of the joints. All the specimens, however, seem referable to a single species.

*ACLISTA CAUDATA*, *sp. nov.*

♀.—Length 2.6-3 mm. Head and thorax black, abdomen subrufous, legs yellow. Head subglobose, polished; frontal prominence and occiput with dense pubescence. Antennæ moderately stout, pubescent, honey-yellow, with terminal joints dusky; scape long, extending far beyond ocelli, as long as pedicel and four joints of flagellum; pedicel nearly twice as long as thick, first joint of flagellum as long as pedicel but more slender, joints two to six subequal, about as long as thick, joints beyond moniliform, gradually enlarged, last joint large, but little smaller than the two preceding. Clypeus and mandibles rufous, palpi pale yellowish. Thorax black, sparsely pubescent, scutellum convex, with large circular fovea at base; tegule rufous or rufo-piceous; pleuræ impressed. Legs stoutly clavate, honey-yellow. Wings with yellowish tinge, nervure pale brown, marginal vein thickened, more than twice as long as thick, stigmal short. Abdomen rufous or rufo-piceous, darker at base and apex, petiole short and stout, rugose and pubescent, ovipositor exerted, yellow, 1 mm. in length.

♂.—Abdomen darker. Antennæ long, filiform; scape a little longer than the pedicel and first joint of flagellum; pedicel one-half longer than thick; joints of flagellum subequal, about three times as long as wide; the first excised at base, the last a little longer than the others.

Described from six ♀♀ and three ♂♂ taken near Hull, as follows: One ♀, 5th August, 1890; one ♀, 24th July, 1897; two ♀ and one ♂, 2nd August; one ♀ and one ♂, 7th August; one ♀ and one ♂, 14th August, 1897. Two females of this species were also, some time ago, sent to Mr. Ashmead, who considered them referable to *A. missouriensis*, but the male differs slightly from his description, which states that the first flagellar joint is as long as the scape, while in my specimens it is only about two-thirds as long. Mr. Ashmead also considers the exerted ovipositor as only accidental, but the eight females, obtained on different dates, all have it exerted, of a length almost fully equal to that of the abdomen, whereas such a protrusion seems of very rare occurrence in other members of the family; only a few instances occur in my collection.

*ACLISTA BOREALIS*.

*Aclista borealis*, Ashmead, Monog. N. A. Proc., p. 378.

Type ♀ in Coll. Ashmead, from Ottawa. Also one ♀ taken 20th May, 1894, and one ♀ obtained from moss collected on Central Experimental Farm Ottawa, in November. One ♂ which seems to agree with these was taken at Chelsea, 3rd October, 1897; the antennæ are slender, the pedicel a little longer than in the preceding species, the apex of the scape beneath is obliquely prolonged into a prominent triangular spine, but this may be only an individual, not specific, character; the legs are piceous, with the articulations paler. One ♀ received from Mr. W.

Metcalfe, labelled Toronto, 3rd March, 1894, apparently belongs to this species, but is not in very good condition for determination.

*ACLISTA RUGOSOPETIOLATA.*

*Aclista rugosopetiolata*, Ashmead, Monog. N. A. Proc., p. 377.

Two ♀♀ from Hull, 22nd August, 1897. The fovea at base of scutellum is crescent-shaped, instead of consisting of two foveae connected by a grooved line.

*ACLISTA CRASSICORNIS, sp. nov.*

♂.—Length 3 mm. Black, polished; abdomen rufo-piceous. Head more transverse and more narrowed behind the eyes than in the preceding forms. Antennae rufous, very stout; scape as long as pedicel and second joint; pedicel rounded, scarcely longer than thick; flagellar joints about twice as long as thick, gradually shorter, the penultimate one-half longer than thick; last joint more slender, as long as the first. Wings subhyaline, nervures pale; marginal vein thickened, about four times as long as thick; stigmal vein short, almost at right angle, a fuscous streak indicating a long open marginal cell. Fovea at base of scutellum large, circular. Legs stout, honey-yellow. Abdomen rufo-piceous.

Described from one ♂ from Ottawa in my collection.

This specimen was first considered to be ♂ of *A. rugosopetiolata*, but the shape of the head and the arrangement of ocelli is different, as well as the shape of fovea at base of scutellum, and the wing venation; it is also more robust in facies.

*PSILOMMA COLUMBIANUM.*

*Psilomma columbianum*, Ashmead, Monog. N. A. Proc., p. 379, pl. xv, fig. 5, ♀.

Two ♀♀ taken at Chelsea, 3rd October, 1897.

*ANECTATA HIRTIFRONS.*

*Anectata hirtifrons*, Ashmead, Can. Ent., xix., p. 198.

*Anectata hirtifrons*, Ashmead, Monog. N. A. Proc., p. 382, pl. xv, fig. 8, ♀.

Type ♀ in Coll. Ashmead, from Ottawa. Two ♀♀ taken 28th July and 13th August, 1894.

Subfamily X.—DIAPRIINÆ.

Tribe I.—SPILOMICRINI.

*HEMILEXIS SUBMARGINATA.*

*Hemilexis submarginata*, Ashmead, Monog. N. A. Proc., p. 389, pl. xvi, fig. 4, ♀.

One ♀ from Ottawa agrees very well with the description of this species, except in the absence of the abbreviated mesonotal furrows.

*PARAMESIUS CLAVIPES.*

*Paramesius clavipes*, Ashmead, Can. Ent., xx, p. 53; Monog. N. A. Proc., p. 393.

Type ♀ in Coll. Ashmead, from Ottawa. Seven ♀♀ and six ♂♂ from Hull, Kettle Island and Ottawa, all taken in August, except one ♀

which was obtained from moss in November. One ♀ from Mr. W. Metcalfe, labelled Toronto, 8th January, 1895.

In some Ottawa material received from Mr. J. A. Guignard, and which was determined by Provancher, I find a ♀ and ♂ of this species labelled *Aneurhynchus foveatus*, Prov.

PARAMESIUS OREGONENSIS.

*Paramesius oregonensis*, Ashmead, Monog. N. A. Proc., p. 395.

One ♀, two ♂♂, from Ottawa in August. A larger and more robust species.

SPILOMICRUS ATRICLAVUS.

*Spilomicrus atriclavus*, Ashmead, Monog. N. A. Proc., p. 398.

Type ♀ in Coll. Ashmead, from Ottawa. Nine ♀♀ and four ♂♂ from Hull, August, and one ♂ from Casselman, 24th May, 1895. These specimens vary considerably, and some answer fully to description of *S. armatus*, but all seem referable to one species. Some have mesonotal furrows complete, two have the furrows abbreviated anteriorly, and the remainder are without furrows. There is also some slight variation in the antennæ.

SPILOMICRUS FLAVICORNIS.

*Spilomicrus flavicornis*, Ashmead, Monog. N. A. Proc., p. 398, pl. xvi, fig. 7, ♀.

One ♀ taken 27th July, 1894, at Hull, Que. Quite distinct from the preceding by its smaller size and paler legs and antennæ.

SPILOMICRUS LONGICORNIS.

*Spilomicrus longicornis*, Provancher, Nat. Can., xii, p. 262; Faune Ent. Can., ii, p. 561, ♀; Ashmead, Monog. N. A. Proc., p. 399.

*Paramesius longicornis*, Provancher, Add. et Corr., p. 405.

The type of this species was probably from Cap Rouge, but the exact locality is not stated by the author, who merely refers to the species as rare. As Mr. Ashmead observes, it is not a Diapriid and is probably a Belytid.

SPILOMICRUS FOVEATUS.

*Spilomicrus foveatus*, Provancher, Add. et Corr., p. 176, ♀.

*Aneurhynchus foveatus*, Provancher, *ibid.*, p. 404.

*Spilomicrus foveatus* (Prov.), Ashmead, Monog. N. A. Proc., p. 399.

Type of species in Coll. Provancher, from Cape Rouge, Que. As pointed out by Ashmead, the description is not that of a *Spilomicrus*, and the insect is perhaps *Paramesius clavipes*; see note on that species.

HEMILEXODES CANADENSIS, *sp. nov.*

Length 1.2 mm. Black, impunctured. Antennæ thirteen-jointed, slender, gradually incrassated; scape and pedicel honey-yellow, flagellum gradually darker, terminal joints black; scape long, pedicel swollen, but twice as long as thick;

flagellar joints one to five slender, subequal, all longer than the pedicel; beyond gradually short and stouter, suboval, last joint longest. Thorax without furrows; a transverse fovea at base of scutellum, which has a row of punctures at tip; metathorax yellowish, with prominent carina. Legs entirely pale honey-yellow. Wings broad, submarginate at apex, faintly yellowish, nervure and stigma yellow, no trace of basal nervure. Abdomen ovate, black, petiole pale, longer than thick, striated and pubescent.

Described from one ♀ taken 2nd August, 1897.

Another ♀ from moss from Experimental Farm has metathorax darker and carina less prominent; antennæ darker and femora piceous.

ANEURHYNCHUS MELLIPES.

*Aneurhynchus mellipes*, Ashmead, Can. Ent., xx, p. 52; Mon. N. A. Proc., p. 404.

Type ♀ in Coll. Ashmead, from Ottawa. Ten ♀♀ and three ♂♂ taken; at Casselman (♂), 24th May; Hull and Ottawa, July to September; Chelsea, 3rd October.

The antennæ of the ♂ are rufous; scape as long as first joints of flagellum; pedicel rounded; first flagellar joint only a little longer, second as long as pedicel and first united, or a little more than twice as long as thick, remaining joints subequal, slightly longer, but not more than three times as long as thick. There is some variation in size and structure of the females, but not indicating more than one species, although a second species seems to occur here, as indicated by the following male.

ANEURHYNCHUS FLORIDANUS.

*Aneurhynchus floridanus*, Ashmead, Monog. N. A. Proc., p. 405; pl. xvii, fig. 4.

One ♂ taken upon Kettle Island, Ottawa, 25th August, 1894. In this species the antennæ are longer, the first funicular joint being twice as long as pedicel, and subequal with the following.

ANEURHYNCHUS INERMIS.

*Aneurhynchus inermis*, Provancher, Add. et Corr., p. 176.

*Pantoclis inermis*, Provancher, *ibid.*, p. 405.

*Pantoclis inermis* (Prov.), Ashmead, Monog. N. A. Proc., p. 448.

Type ♀♀ in Coll. Provancher, from Cap Rouge and Ottawa. I have received from Mr. J. A. Guignard a ♀ so labelled, as determined by Provancher, and which seems to me identical with *A. mellipes*.

Tribe II.—DIAPRIINI.

GALESUS QUEBECENSIS.

*Galesus quebecensis*, Provancher, Faune Hym. Can., ii, p. 559, ♂.

*Galesus quebecensis* (Prov.), Ashmead, Can. Ent., xix, p. 195; Monog. N. A. Proc., p. 409, ♀♂.

The species was described from two males (locality not mentioned), and this sex seems most abundant. Seven ♂♂ from Hull, Chelsea and

Ottawa, in July, August and October. These vary in size from 3-5 mm.; the large ones have the coxæ, scape and pedicel black; one small specimen has coxæ, scape, pedicel and first flagellar joint red, remainder of flagellum dusky; another has the legs mostly piceous and the antennæ entirely black.

## GALESUS ATRICORNIS.

*Galesus atricornis*, Ashmead, Monog. N. A. Proc., p. 409.

Type ♀ in Coll. Ashmead, from Ottawa. One ♀ taken in the city, 3rd October, received from Mr. J. A. Guignard.

## GALESUS POLITUS.

*Coptera polita*, Say, Bost. Jour. Nat. Hist., i, p. 282; Lec. Ed. Say, ii, p. 728.

*Coptera polita* (Say), Provancher, Add. et Corr., p. 182,

*Entomacis polita* (Say), Provancher, *ibid.*, p. 404.

*Galesus politus* (Say), Ashmead, Monog. N. A. Proc., p. 410.

The ♀ of this species is recorded by Provancher as received from Ottawa.

## GALESUS PILOSUS.

*Galesus pilosus*, Ashmead, Monog. N. A. Proc., p. 411.

One ♀ which seems to belong to this species received from Dr. Fletcher, who captured it at Brandon, Man., in July, 1875.

## LOXOTROPA RUFICORNIS. ?

*Loxotropa ruficornis*, Ashmead, Monog. N. A. Proc., p. 414, pl. xvii, fig. 8.

One ♀ taken 13th August, 1894, Ottawa. Distinct from the following species by the angulated face, but lacks the mesonotal furrows mentioned in description.

## LOXOTROPA ABRUPTA.

*Basalys abrupta*, Thomson, Ofv., p. 368, ♀.

*Loxotropa abrupta* (Thoms.), Ashmead, Can. Ent., xx, p. 54; Monog. N. A. Proc., p. 414.

Four ♀♀ and one ♂ from Hull and Ottawa in August. One of these females was determined for me by Mr. Ashmead; the others are slightly smaller, but seem to fully agree with description, except that one, with exception of the black head, is entirely rufous, including club of antennæ.

## LOXOTROPA FLAVIPES.

*Loxotropa flavipes*, Ashmead, Monog. N. A. Proc., p. 415.

Seven ♀♀ in August from Kettle Island, Ottawa, Kings Mountain and Hull.

## LOXOTROPA CALIFORNICA. ?

*Loxotropa californica*, Ashmead, Monog. N. A. Proc., p. 415.

Two ♀♀, Hull, 14th August, 1897, and from moss, November, 1897, Ottawa.

## LOXOTROPA NANA.

*Loxotropa nana*, Ashmead, Monog. N. A. Proc., p. 415.

Four ♀♀ from Hull and Ottawa in August. Distinguished by the narrow, abbreviated wings and partly rufous body.

## LOXOTROPA PEZOMACHOIDES.

*Loxotropa pezomachoides*, Can. Ent., xx, p. 53; Monog. N. A. Proc., p. 416.

Type ♀♀ in Coll. Ashmead, from Ottawa. Four ♀♀ in my own collection, obtained, like so many of these apterous forms, from moss in early winter.

## TROPIDOPRIA CONICA.

*Ichneumon conicus*, Fabricius, Ent. Sys., ii, p. 188; Linn. Ent., iii, p. 212.

*Tropidopria conica* (Fabr.), Ashmead, Monog. N. A. Proc., p. 418, pl. xxiii, fig. 1, ♀.

♀ in Coll. Ashmead, from Ottawa; also ♀ in my collection, taken 12th June.

## TROPIDOPRIA CARINATA.

*Diapria carinata*, Thomson, Oiv., 1858, p. 361.

*Tropidopria carinata* (Thoms.), Ashmead, Monog. N. A. Proc., p. 418.

♀ in Coll. Ashmead, from Ottawa, also ♀ in my collection (determined by Mr. Ashmead), and one ♂, which, although smaller, seems referable to this species; it was taken 14th August, 1897, at Hull.

## TROPIDOPRIA TORQUATA.

*Platymischus torquatus*, Provancher, Add. et Corr., p. 182.

*Tropidopria torquata* (Prov.), Ashmead, Monog. N. A. Proc., p. 419.

Type ♀ in Coll. Ashmead; recorded also by Provancher from Cap Rouge, Que. One ♀ taken on 24th September, 1897, at Hull, Que.

## TROPIDOPRIA SIMULANS.

*Tropidopria simulans*, Ashmead, Monog. N. A. Proc., p. 419.

Two ♀ types in Coll. Ashmead, from Ottawa. This is decidedly our commonest species, as over thirty ♀♀ have been taken in the vicinity of Ottawa in August; no males have, however, so far occurred.

## DIAPRIA ERYTHROPUS.

*Diapria erythropus*, Ashmead, Monog. N. A. Proc., p. 423.

One ♀ from moss collected in November at Experimental Farm, Ottawa.

## DIAPRIA ARMATA.

*Diapria armata*, Ashmead, Can. Ent., xx, p. 53; Monog. N. A. Proc., p. 425.

Type ♀ in Coll. Ashmead, from Ottawa. Two ♀♀ taken 7th August, 1897, near Hull, answer well to description, except that last joint of

antennal club is much smaller. One ♂ taken in same locality, a week later, may also belong to this species, of which the ♂ is not described.

## DIAPRIA COLON.?

*Psilus colon*, Say, Bost. Jour. Nat. Hist., i, p. 284; Lec. Ed. Say, ii, p. 729.  
*Diapria colon* (Say), Ashmead, Monog. N. A. Proc., p. 425.

Two ♀♀ and three ♂♂. One ♀ was from moss, the other specimens collected at Hull and Ottawa in August. The female is smaller than preceding species. The antennæ of ♂ are less nodose and the whorls of hairs much less conspicuous.

## DIAPRIA VIRGINICA.

*Diapria virginica*, Ashmead, Monog. N. A. Proc., p. 426.

Seven ♀♀ and eight ♂♂ from Hull and Ottawa in August. The male of this species is not described, but my specimens seem, by their size and coloration, to correlate to the females so determined for me by Mr. Ashmead.

## DIAPRIA APICALIS.

*Psilus apicalis*, Say, Bost. Jour. Nat. Hist., i, p. 283; Lec. Ed. Say, ii, p. 729.  
*Diapria apicalis* (Say), Provancher, Add. et Corr., p. 175.  
*Diapria apicalis* (Say), Ashmead, Monog. N. A. Proc., p. 428.

Provancher records (*loc. cit.*) a ♀ of this species from Cap Rouge, Que., but his description of the specimen is not that of a member of this genus.

## CERATOPRIA MEGAPLASTA.

*Ceratopria megaplasta*, Ashmead, Monog. N. A. Proc., p. 430.

Type ♀ in Coll. Ashmead, from Ottawa.

## CERATOPRIA INFUSCATIONES.

*Ceratopria infuscationes*, Ashmead, Monog. N. A. Proc., p. 431, pl. xviii, fig. 3, ♀

Type ♀ in Coll. Ashmead, from Ottawa. Three ♀♀ from Hull and Ottawa in August.

## TRICHOPRIA CAROLINENSIS.

*Trichopria carolinensis*, Ashmead, Monog. N. A. Proc., p. 434.

One ♀ from moss, collected in Dow's Swamp, Ottawa.

## TRICHOPRIA HARRINGTONII.

*Loxotropa Harringtonii*, Ashmead, Can. Ent., xx, p. 53.

*Trichopria Harringtonii*, Ashmead, Monog. N. A. Proc., p. 435.

Type ♀ in Coll. Ashmead, from Ottawa.

## PHENOPRIA SCHWARZII.

*Phenopria Schwarzii*, Ashmead, Monog. N. A. Proc., p. 439.

One ♀ from Ottawa.

## PHLENOPRIA MINUTISSIMA.

*Phænopria minutissima*, Ashmead, Monog. N. A. Proc., p. 438.

One ♀ taken at Hull, 24th September, 1897.

## PHLENOPRIA HEMATOBIAE.

*Phænopria haematobiae*, Ashmead, Monog. N. A. Proc., p. 438.

Five ♀♀ taken at Ottawa; of these four were from moss from Dow's Swamp in November, the other was captured 27th August, 1898.

## PHLENOPRIA APTERA.

*Phænopria aptera*, Ashmead, Monog. N. A. Proc., p. 439.

Type ♀♀ in Coll. Ashmead, from Ottawa. A very common species in moss in early winter; about fifty specimens taken by sifting; also two with sweeping-net at Hull, 27th August, 1898.

## MONELATA HIRTICOLLIS.

*Monelata hirticollis*, Ashmead, Can. Ent., xx, p. 54; Monog. N. A. Proc., p. 442.

Type ♀ in Coll. Ashmead, also one ♀ in my collection; both taken from moss, Ottawa.

## BASALYS FUSCIPENNIS.

*Basalys fuscipennis*, Ashmead, Monog. N. A. Proc., p. 444.

Two ♀♀. One taken at Hull, 7th August, 1897, the other at Experimental Farm, Ottawa, 3rd September, 1898.

## BASALYS RUFICORNIS.

*Basalys ruficornis*, Provancher, Nat. Can., xii, p. 261; Faune Ent. Can., ii, p. 560.

*Basalys ruficornis* (Prov.), Ashmead, Monog. N. A. Proc., p. 445.

Provancher records a ♂ from Quebec (locality not mentioned). His description seems rather to indicate a member of the genus *Belyta*.