THE EVANIIDÆ, ENSIGN-FLIES, AN ARCHIAC FAMILY OF HYMENOPTERA.

(Plates V–XV.)

BY J. CHESTER BRADLEY.

When in the fall of 1901 I published in the TRANSACTIONS of the American Entomological Society a paper on the Aulacinæ of North America,* I intended it as the first one of a series of three papers, which I expected shortly to complete, one on each subfamily of the Evaniidæ. Through many intervening circumstances this design has been frustrated, but out of it has grown the present paper.

This contribution deals primarily with the Evaniinæ, and contains as complete a monograph of the North American species of that subfamily as I have been able to prepare. But I have found a study of exotic genera and species necessary to a satisfactory concept of the classification and relations of the group. Indeed, the variations of form shown by the members of this group and their comparison with each other and with other groups, native and exotic, has been to me the most interesting part of the work, and I trust that I may be pardoned if I have laid more stress on it than is customary in purely systematic works, where often little attention is paid to characters not found desirable for use in keys.

As a second part of this paper I have embodied the result of my study of exotic forms. Here are included descriptions and remarks on the genera and species of the world, a table to the genera, and finally a table to all the described species whose generic position I could with reasonable certainty identify. The latter have been compiled almost entirely from literature, which is I believe the only practicable method, because no one person can expect to accumulate even a large proportion of the species of the world. These certainly must prove unsatisfactory, and must contain many errors, for the descriptions are often very incomplete, and it is difficult to compare those drawn up by different authors. But I hope that

* Trans. Amer. Ent. Soc., xxvii, p. 319.

they will be of some real service to students desirous of identifying exotic species, and who at present must perforce wade through a great mass of more or less unsatisfactory descriptions in several languages and innumerable publications. In preparing them I have used my best judgment in selecting characters that would be reliable and easy to use, but have of course been greatly hampered in this respect by the limitations of the descriptions. In such cases as I have been able to examine the species in question, matters have of course been much expedited.

I shall begin the paper with a short consideration of the family as a whole; then of the Aulacinæ, tabulating the genera of the world and in part supplementing, in part revising, my former paper on the North American species. Then I shall take up the Fœninæ, treating it briefly. I regret that at present I see no prospect of being able to prepare a more complete monograph of our North American species of this subfamily. In perhaps no group that I have studied have the characters been so variable and difficult of tabulation, so that it would require a very considerable amount of time and study. Then will follow the parts on the Evaniinæ as above described, and I shall conclude with a catalogue of the species of Evaniinæ of the entire world, distributed according to their proper genera.

I wish to express my obligations to Professor Comstock of Cornell University, who has placed at my disposal in the entomological laboratory of that institution, where most of this work has been carried on, every facility for study that could be desired, and has kindly read the manuscript: to Dr. A. D. MacGillivray, also of Cornell University, for constant assistance, suggestions and courtesies of many kinds, and also for reading the manuscript: to the authorities of the United States National Museum for the loan of the very valuable collection of Evaniidæ belonging to that Museum: to the American Entomological Society for the loan of many specimens; to Mr. C. T. Brues and Dr. P. P. Calvert for the presentation of several specimens: to Mr. Henry L. Viereck for the presentation of numerous valuable specimens, particularly of North American *Hyptia*, and some undescribed species from British Guiana: to Mr. G. V. Hudson of Wellington, New Zealand for the presentation of two species of Fœninæ including the type of the genus *Pseudofœnus*: to Professor Herbert Osborn, Professor E. D.

Sanderson, Mr. Wm. Beutenmüller, Professor Carl F. Baker, Dr. A. D. Hopkins, Mr. Erich Daecke and others for the loan of numerous specimens: to Mr. C. S. Spooner and Mr. H. J. Hammond for assistance with the manuscript.

The figures of wings on Plates XI–XV inclusive were made as follows: the wings were removed from the right hand side of the insect, mounted on slides and then photographed. Blue-prints were made on drawing paper coated with blue-print solution. The outlines of the veins were then drawn on the print with water-proof India ink, and after thorough drying the print was bleached in a strong solution of potassium oxalate, leaving the ink drawing on a white background. Thus almost mechanical accuracy was obtained in the representation of the thickness and position of the veins. Figs. 67, 82 and 87 were copied by a similar method from published figures, inasmuch as no specimens of these genera were available. Figures 18, 19, 62, 63 and 64 were drawn free hand. The remaining drawings were made with a camera lucida. The drawings on Plates VII and VIII were all made to the same scale, as were those on Plate IX. The claws on Plate IX were mounted on slides, hence present a somewhat different appearance from what would be seen *in situ*. Plate V is from direct photomicrographs.

I have been able to study specimens of all the described genera except the following: *Evaniscus* Szepligeti, *Evaniellus* Enderlein, *Aulacinus* Westwood, *Semenowia* Kieffer and *Aulacus* Jurine; also of all the North American species of Aulacinæ and Evaniinæ except *Hyptia brevicalcar* Kieffer, *Aulacus erythrogaster* Kieffer, *Pristaulacus flavipes* Kieffer.

The Evaniidæ are an anomalous family of parasitic Hymenoptera, probably of very ancient stock, and as is often true in such cases, although well represented in number of species, the individuals are almost invariably to be counted as rare insects, and are not usually well represented in collections. Because of their anomaly they have formed, as I have before remarked, a dumping ground for very many peculiar forms whose relationships have puzzled investigators. In this way the following genera and perhaps others have at one time or another been included in the family, in addition to those we at present include: *Pelecinus*, *Stephanus*, *Megischus*, *Paxilloma*, *Trigonalys*, *Monomachus*, *Ophionellus*, *Megalyra*, *Capitonius*, *Canocalius*, *Leptofanus*, etc. To-day most authors are

agreed in restricting the family to the scope recognized in this paper, except that some include with it the Stephanidæ. While I think the latter are sufficiently distinct to form a family by themselves, I believe they really are closely related to the Evaniidæ, particularly through the Fœninæ. There is a similarity in wing venation, and the insertion of the abdomen in *Stephanus* is on the lower part of the propodeum, but above the coxæ. Even the habitus is somewhat similar. It is not improbable that the Fœninæ may really be more closely related to Stephanidæ than to Evaniinæ or Aulacinæ, and should really form a subfamily of the former rather than of the Evaniidæ. Although really I think all of the subfamilies here recognized are entitled to family rank.

There are two characters that are usually employed in distinguishing the Evaniidæ. These are the presence of the cell C in the front wings (Fig. 69), and the insertion of the abdomen on the propodeum far above the posterior coxæ. Neither are absolute, and may be used only in conjuction with other characters. The Stephanidæ, as before mentioned, have a distinct costal cell, while several genera of Braconidæ have the abdomen inserted on the propodeum far above the coxæ; some of the Stephanidæ less distinctly so. The Ropronidæ have a distinct costal cell, but the abdomen inserted normally.

In designating the wing veins I have employed the system proposed by Comstock and Needham.* I do this because I believe that the venation thereby takes on an intelligible significance. The veins are, I am convinced in the main, correctly homologized with those of other orders. I intend to employ this system as far as possible in my future studies of the Hymenoptera. I refer the reader who is not familiar with it to the paper of Comstock and Needham just cited, and for its application to the Hymenoptera, particularly to a paper by Dr. A. D. MacGillivray † on the wing venation of the Tenthredinoidea, where the subject is treated very clearly in Sections II and III, pp. 574 to 583. An appreciative and careful study of these sections and their accompanying figures will I am sure make the matter clear to any one.

* "Wings of Insects," J. H. Comstock and J. G. Needham, Amer. Nat., vol. xxxii and xxxiii, 1898 and 1899.

† "A Study of the Wings of the Tenthredinoidea, a Superfamily of Hymentera," by A. D. MacGillivray, Proc. U. S. Nat. Mus., vol. xxix, pp. 569-654, 1906.

For convenience I give below the terms used by Cresson in his Synopsis of the North American Hymenoptera and their corresponding designation in this paper (Figs. 67 and 69).

VEINS.

Costa = C.
Subcosta = Sc + R + M.
Marginal or radial vein = r, Rs, R_{3+4} and R_3.
1st transverse cubitus = r-m and R_s.
2d transverse cubitus = R_5.
3d transverse cubitus = R_4.
Basal vein = M and m-cu.
Cubitus = M, M_{1+2}, R_5 + M_1 and R_{4-5} + M_1.
1st recurrent vein = M_{3+4}.
2d recurrent vein = M_2.
Discoidal vein = M_3 and M_4.
Subdiscoidal vein = m and M_2.
Externo-medial vein = Cu and Cu_2.
Transverso-medial vein = M_4 + Cu_1.
Anal vein = 1st + 2d + 3dA, Cu_2 + 1st + 2d + 3dA, M_1 + Cu_{1+2} + 1st + 2d + 3dA, and M_{3+4} + Cu_{1+2} + 1st + 2d + 3dA.

CELLS.

Costal = C.
Stigma = Sc_2.
Marginal or radial = 2dR_1 + R_2.
1st submarginal or cubital = R + 1stR_1.
2d " " " = R_5.
3d " " " = R_4.
4th " " " = R_3.
Median or externo-medial = M.
1st discoidal = M_1.
2d " = M_3.
3d " = 1st M_2.
1st apical = 2dM_2.
2d " = M_1.
Submedian or externo-medial = Cu + Cu_1.
Anal = 3dA.

The combination of veins and consequent nomenclature will generally be different for each abscissa. In Fig. 73 it will be seen that the medial cross-vein and the second branch of media form apparently a single vein with no indication where they join. In such cases where two different abscissas are joined end to end without indication of the place of union, I have designated the entire vein thus formed by the name of each abscissa connected by "and", or if three or more are thus joined, use a comma between the first two and "and" between the second, as m and M_2, or, again, R_8, R_{3+4} and R_3. The + mark of course is only used where two or more veins unite side by side, as $R_{4+5} + M_{1+2}$.

On Plates XI–XV inclusive are arranged figures of all the types of wings known to occur in the family, in what I believe to be an order ascending from the most generalized to the most modified, especially within each subfamily. The Aulacinæ are very evidently the most generalized. Take for example *Aulacinus* (Fig. 67), R_4, R_5 and all of M_2 are present. Omitting for the present the Fœninæ (Figs. 72–74), we find in the wing of *Evania* (Fig. 76) only a slight modification. R_5 is lost and also the transverse part of M_2. M has migrated far forwards along the radius, carrying with it m-cu. In this subfamily modification then proceeds by atrophy, until in *Evaniellus* (Fig. 87) only C and Sc are left. The Fœninæ (Figs. 72–74) we may look upon as a side line. We cannot compare the degree of their specialization with the others, because it has been in an entirely different direction. It seems reasonable to suppose that they may have arisen as an offshoot of Aulacinæ (compare Figs. 71 and 72), or they may have arisen from somewhere among the ancestors of the Stephanidæ. At any rate in wing venation and other characteristics they are highly modified. Of course I do not base my conclusions as to the relations of these groups solely on the wings, but these are easy of illustration and description, and in all more reliable for comparison than any other single character, hence I emphasize them here.

L'Abbe Kieffer* criticizes the table to the subfamilies of Evaniidæ that I published in my former paper, on the grounds that the characters given do not apply in all cases. But I think that his criticism is unfair, since the table was intended only for the North American forms, for which so far as I am aware it holds good. All

* Spec. Hym. d' Eur. et d' Alger., vii, bis, p. 377.

the exceptions urged are for exotic species. His own table published in the same place is open to the same objections. Thus under his tribe Evaniinæ he says: "Nervure basale aboutissant au stigma, rarement évanouie dans sa partie supérieure." In the genera *Hyptia*, *Semæomyia*, *Semæodogaster*, *Evaniellus* and sometimes *Zeuxevania*, the "nervure basale" is wanting. Again he says: "Abdomen . . . . . ellipsoïdal chez le mâle." In *Hyptia* and others the abdomen in the male is round and indistinguishable from that of the female in shape. I think that the characters employed in the following table will be found constant, except that I am not certain whether the folding of the wings is constant in all Fœninæ or not. It is in all cases that have come under my observation.

TABLE OF THE SUBFAMILIES OF EVANIIDÆ.

1. Front wings with the transverse part of M_2 present (Fig. 67); not folded longitudinally; hind wings without a posterior lobe (Fig. 69); metasternum not prolonged into a furcula; abdomen clavate, the basal segment not filiform-petiolate, nor strongly contrasted to the second in form .... AULACINÆ.

   Front wings with the transverse part of M_2 absent (Figs. 72 and 76).....(2).

2. Hind wings without a posterior lobe (Fig. 72); front wings folded longitudinally as in Vespoidea; metasternum not prolonged into a furcula; abdomen clavate and compressed, the basal segment not filiform-petiolate, nor strongly contrasted to the second in form.....FŒNINÆ.

   Hind wings with an almost separated posterior lobe (Fig. 76); front wings not folded longitudinally; metasternum prolonged into a furcula between the posterior coxæ; abdomen with the basal segment filiform-petiolate, strongly contrasted to the following segments in form, the latter together compressed, oval (♂), triangular (♀), or nearly round in both sexes..... .....EVANIINÆ.

FŒNINÆ.

Following Schletterer, authors have of recent years used *Gasteruption* as the name of the typical genus of this family. But *Gasteruption* of Latreille (1797) is a nomen nudum—no species being mentioned. In 1798 Fabricius describes *Fœnus* with *jaculator* and *assectator* as species. Latreille in 1802, Hist. nat. Crust. and Insec., iii, 329, says: "J'avois établi ce genre avant Fabricius, sous le nom de *Gasteruption;* mais, comme ce dernier mot est trop dur, j' adopte avec plaisir la dénomination de ce naturaliste."

As before remarked, the Fœninæ show unmistakable relations to the Stephanidæ.

The wing of *Hyptiogaster* is the most generalized in the sub-

family. In *Fœnus* (Fig. 73) the base of the longitudinal part of M has become interstitial with Cu_1, crowding m-cu out of existence and greatly reducing the size of the cells M_3 and M_4. In *Pseudofœnus* (Fig. 74) the condition is the same, except for an additional step, the vein M_4 being lost and cells M_3 and M_4 thus thrown together.

The habitus is similar in all the species that I have studied, the proportions being always slender, the neck long, and the posterior tibiæ very strongly clavate. But not in the genus *Hyptiogaster*, at least not in *H. humeralis*, in which the form is stouter, the neck short and the posterior legs stout; the femora very stout, as though for leaping; the tibiæ stout but not clavate; the tarsi very short, exclusive of the claw, less than one-third as long as the tibiæ, the second and third joints being extremely short, much broader than long, while the claw is quite large. The mouth parts are much enlarged and used for sucking (Figs. 20–21).

The claw (Fig. 43) is always simple; the mouth parts are shown in Figs. 20–23.

An interesting character is found in the longitudinal folding of the wings, as in the Vespoidea. Outside of these there is only one other genus of Hymenoptera known to have this habit, namely *Leucospis*, a Chalcid.

A quite extensive account of the life history of *Fœnus* (*Gasteruption*) is given by Hoppner.* The genus is parasitic on the larvæ of aculeate Hymenoptera, and has been bred from *Prosopis*, *Trypoxylon*, *Osmia*, *Eriades*, *Odynerus*, *Colletes* and *Cemonos*. In the collection of Cornell University is a specimen lacking an abdomen, but probably *F. incertus*, bred from the nest of *Passalœcus distinctus* Fox.

Only *Fœnus* occurs in the United States.

TABLE TO THE GENERA OF FŒNINÆ.

1. In the front wings m-cu absent (Figs. 73, 74), the base of the longitudinal part of M joining Cu_1; [Posterior tibiæ swollen and clavate; habitus slender, the neck and head usually long] † ..... (2).

   In the front wings m-cu present, the base of the longitudinal part of M being removed from Cu_1 (Fig. 72); [Posterior femora and tibiæ sometimes much swollen but not clavate; the tarsi sometimes very short; joints 2–4 broader than long; habitus stouter, head and neck not elongate.]*

   Hyptiogaster Kieffer.

   (Type *Gasteruption antennale* Schletterer).

* Allg. Zeitschr. f. Entom., ix, p. 97, 1904.

† The bracketed characters may not always hold true, but do in all the species that I have seen.

2. The free part of M_4 present (Fig. 73) . . **Fœnus** Fabricius (*Gasteruption* auct.)
(Type *Ichneumon assectator* L.)

The free part of M_4 lost (Fig. 74) . . . . . **Pseudofœnus** Kieffer.
(Type *Gasteruption pedunculatum* Schletterer.)

Fœnus maculicornis Cameron, from Mexico, belongs to the genus *Pseudofœnus*.

TABLE TO THE NORTH AMERICAN SPECIES GROUPS OF FŒNUS, AND THE SPECIES OF THE MONTANUS GROUP.

1. Ovipositor of the females as long as the abdomen . . . . . tarsatorius group.
Ovipositor of the females about one-quarter as long as the abdomen.
montanus group (2).
2. Medial mesothoracic lobe shagreened, not striate . . . . . (3).
Medial mesothoracic lobe transversely rugose-striate . . . . . **micrura** Kieffer.
3. Second, third and fourth abdominal segments banded black and red.
montanus incertus Cresson.
Apex of second, third, fourth and fifth abdominal segments except dorsal spots, entirely red, middle and posterior legs often red beneath.
montanus Cresson.

Fœnus montanus Cresson.

1864. *Fœnus montanus* Cresson, Proc. Ent. Soc. Phila. iii, p. 132.
1864. *Fœnus incertus* Cresson, ibid., p. 133 (= race *incertus*).
1903. *Gasteruption micrura nigripectus* Kieffer, Ark. Zool., i, p. 556.
1904. *Gasteruption nevadense* Kieffer, Invert. pacifica, i, p. 41 (race *montanus*).

Black, abdomen often partly rufous, legs sometimes light, ovipositor 2.5–3 mm. Length 7.5–13 mm.

♀.—Head black; occiput and face very minutely roughened, with close punctures several times smaller than the facets of the eye, giving the whole a dull opaque lustre; jaws black, punctures larger and not so close; no area on the face separated by grooves; face impubescent, except for a fringe of yellow hairs on the edge of the clypeus, which is emarginate, its articulation marked by a very fine suture; a short ridge between the antennæ above; face not narrowed; head very broadly rounded behind the eyes, posterior margin simple; first joint of flagellum strongly clavate, two-thirds the size of second, which is subcylindrical, third scarcely longer than the second, but perfectly cylindrical; antennæ more minutely punctured than the face, glabrous to the middle of the third segment of the flagellum, where it becomes pubescent; head beneath glabrous. Neck short, finely wrinkled anteriorly below, smooth posteriorly, with a few scattered punctations; above more coarsely reticulate. Thorax black; margin of prothorax wavy, without any well-marked tooth; propleura and mesothoracic lobe finely roughened with punctures somewhat larger than the facets of the eye, especially the former; parapsides smooth and more sparingly punctulate, without an impressed longitudinal line; meso- and metapleuræ more coarsely punctulate; scutellum very finely punctulate; wings hyaline, without violaceous reflection, veins dark. Legs nearly black, somewhat subcastaneous, evenly and most minutely punctulate, tibiæ and tarsi covered with short pubescence. Abdo-

men black, second and third segments tipped with rufous; a rufous spot on each side of the third segment and ventrally; abdomen much compressed, smooth and with a dull, not silky lustre.

♂.—Similar to female, but slightly more pubescent and punctations generally a little larger.

The description applies to the race *incertus*.

The races *montanus* and *incertus* merge one into the other. *Montanus* has much more red on the abdomen, violaceous wings, and very frequently the under side of the middle and posterior legs red. It seems to be more common in Nevada, and to extend eastward into Colorado (West Cliff), and northward into Oregon (Mt. Hood) and Washington. *Incertus* is the common form in Colorado (type locality) and is also recorded from New Mexico (Beulah, August 17th, Dr. Skinner; July 11th, T. D. A. Cockerell), from Oregon (Mt. Hood), and from Washington. Further east it occurs in Canada; New Hampshire; Massachusetts; Pennsylvania (Castle Rock, Dr. Skinner), and Virginia.

The eastern specimens seem to differ slightly from the western; they usually have a white base to their posterior tibiæ, while in western individuals the tibiæ are usually entirely black.

Fœnus micrura Kieffer.

1903. *Gasteruption micrura* Kieffer, Ark. f. Zool. i, p. 556.

♀.—10 mm. Black. Head opaque, very finely shagreened; eyes short, hairy; occiput nearly semicircular, slightly less than half the length of the eye; posterior margin simple, weakly concaved; posterior ocelli somewhat more widely separated from each other than from the compound eyes; cheeks very short, shorter than the second antennal segment; antennæ dark brown, paler at the apex; the second segment longer than thick, two-thirds as long as the third; the fourth a little longer than the third.

Thorax dark red; neck and upper side of the thorax almost black; neck short; pronotum with an indistinct tooth on the anterior angles; medial mesothoracic lobe thickly, rather finely transversely rugose-striate, the lateral and posterior parts of the mesonotum leather-like, as also the scutellum, and the propleuræ and mesopleura; propodeum reticulate. Wings hyaline; posterior wings with three costal hooks, without cells; coxæ and legs brownish yellow; posterior legs darker, the base of their tibiæ white; posterior coxæ transverse-striate; metatarsus as long as the four following segments united. Apical third of the second, third and fourth abdominal segments yellowish-red; ovipositor scarcely longer than the petiole; vaginæ entirely black, their apex weakly spindle-shaped.

Male similar to the female.

The description is translated from Kieffer.

The color of the thorax is usually entirely black.

Type locality, Illinois. I have seen specimens from New Hampshire (New Glenn House, White Mtns.); Massachusetts and Virginia.

Fœnus tarsatorius Say.

(?) 1851. *Fœnus barnstoni* Westwood, ♀, Trans. Ent. Soc. London, n. s., i, p. 220.
1859. *Fœnus tarsatorius* Say, ♀, Entom. North Amer. i, p. 215.
1889. *Gasteruption tarsatorium* Schlett, Ann. d. k. k. Nath. Hofm. Wien, iv, p. 482.
1903. *Gasteruption intricatum* Kieffer, Ark. f. Zool., i, p. 556.

Black or brown; punctures on dorsum deep, large and scattered among the coarse wrinkles. Length 10–14 mm. Ovipositor 10.5–13 mm.

♀.—Head black, very minutely punctulate, somewhat shiny on top, slightly silvery-sericeous between the eyes and antennæ, mandibles testaceous, tipped with rufous; margin of clypeus sinuate, emarginate in centre; head behind eyes narrowed, margin not reflexed; antennæ pubescent toward apex, from about the third segment of flagellum; this short clavate. Thorax black, laterally silvery-sericeous; dorsum coarsely reticulate or transverse-wrinkled, with large punctures between and small ones on the wrinkles or meshes; propodeum coarsely reticulate. Wings hyaline, irridescent, without violaceous reflection; veins pale. Four anterior legs entirely testaceous, including coxæ; posterior coxæ black, finely transverse-wrinkled; femora reddish-brown; tibiæ white at base, especially anteriorly, club brown; tarsi white, apex brown. Abdomen silky, black, two or three segments tipped with a ferruginous lateral spot. Borer red, sheaths black, tipped with white.

If this proves to be identical with *barnstoni* of Westwood, that name will replace *tarsatorius* Say.

Hab.—Massachusetts (Medford, G. Dimmock); North Carolina; Virginia; Canada; New York (Ithaca); Pennsylvania.

Fœnus fragilis nov. spec.

Very frail and slender, abdomen brown to black, with ferruginous spots, legs dark brown, wrinkles on the dorsum subobsolete medially, dwindling into punctures. Length 11 mm. Ovipositor 9–13 mm.

♀.—Head black; face clothed laterally and on the border of the clypeus with silvery sericeous pubescence; face sparingly, vertex more closely covered with punctures the size of the facets of the eyes; the mandibles are rufous, the apical tooth small, blunt, and the apex, which is also somewhat blunt, is not prolonged beyond it, very slightly punctured; clypeus sinuate laterally, very broadly emarginate medially; its articulation with the face and an area beneath the antennæ well defined; occiput with a tendency toward fine transverse wrinkles, cheeks narrowed behind the eyes, posterior edge acute; first joint of the flagellum short, clavate, together with the second longer than the third by about half the length of the first. Neck long, broad at base and tapering strongly at the apex; strongly sculptured with transverse wrinkles, irregular, and rather widely separated. Prothorax similarly sculptured; on the lobe of the mesothorax the sculpture is similar but more regular toward the sides and the rear, in the middle anteriorly the wrinkles become subobsolete, dwindling into mere punctures; propodeum coarsely reticulate; sides of thorax silvery sericeous; prothorax with a well-marked acute tooth on the anterior margin. Wings hyaline, irridescent, without the beautiful violaceous reflection found in some of the other species.

veins and stigma dark. Legs entirely dark brown, except a white ring near the base of the posterior tarsi, and a subwhite ring at the base of the posterior tibiæ, broad in front and obsolete behind; posterior coxæ very finely transverse rugulose. Abdomen silky, brown at base, grading to black at apex, varied with two ferruginous spots on each side near the middle. Borer red, sheaths black, pale at apex.

♂.—Similar, except that the apex of the mandibles is a little longer, the clypeus a little more deeply emarginate, and the second joint of the flagellum short.

Five specimens with no variation, except that the ferruginous spots on the abdomen sometimes extend toward the base. The stature is very frail.

Hab.—Montana, Nevada, Oregon (Mt. Hood).

Type.—In the American Entomological Society's collection.

Fœnus pattersonæ Melander and Brues.

1902. *Gasteruption pattersonæ* Melander and Brues, Biol. Bull., iii, p. 35.
1904. *Gasteruption pyrrhosternum* Kieffer, Invert. pacific, i, p. 41.

Black, legs red, abdomen ferrugino-maculate. Thorax sub-coarsely reticulate, posterior coxæ more finely reticulate. Length 12.5 mm.

♂.—Head black; face slightly silvery pubescent; mandibles rufous, tipped darker, shining and impunctate toward the acute apex, slightly punctured at the base; clypeus sinuate, broadly emarginate, without tooth in centre; face very sparingly covered with punctures much smaller than the ocelli; punctations on the occiput larger and running into close fine transverse wrinkles; antennæ pubescent, with the second segment of the flagellum short; occiput and head beneath covered with fine yellowish pile; head behind the eyes very brief, subtruncate, margin not reflexed. Neck short, it and the entire thorax are covered with coarse and more or less regular reticulations, not confluent on the mesothorax, and about one-half the size of the ocelli. Thorax entirely black, its sides and the neck silvery sericeous, prothorax with an acute tooth on the lateral anterior angles. Wings subhyaline, without violaceous reflection and but slight irridescence; nervures and stigma dark. Four anterior legs including coxæ rufotestaceous; posterior deep rufous, tending to castaneous, the base of the tibiæ with a white ring; posterior coxæ rufous, much more finely reticulated than the thorax. Abdomen sub-silky, black, with ferruginous lateral spots on the first two or three segments.

One specimen has stood for many years in the collection of the American Entomological Society bearing a MS label in Mr. Cresson's handwriting. I have received an additional specimen (*pyrrhosternum* Kieffer) from C. F. Baker.

Fœnus floridanus n. sp.

♀, ♂.—Black, neck, prothorax, coxæ and entire legs, propodeum and spots on the abdomen red. Thorax and hind coxæ coarsely reticulate.

Length 14 mm. Borer 12.5 mm.

♀.—Head black; impubescent, except clypeus which is somewhat pubescent and roughly sculptured, rest of face closely covered with minute punctures con-

siderably smaller than the facets of the eyes, giving the surface a dull lustre; mandibles blunt, rufous; edge of clypeus somewhat sinuate; antennæ black, first joint of flagellum clavate, longer than usual; head prolonged behind the eyes, abruptly narrowed, margin reflexed. Neck long, rufous, closely transverse-striate. Prothorax, including propleura, rufous, with an acute tooth on each side of the lateral anterior angles; the entire thorax and propodeum covered with coarse reticulations, interstices about the size of the ocelli; on the mesothoracic lobe these become somewhat confluent. Wings stained dusky yellow, without violaceous reflection or very marked irridescence; nervures and stigma dark. Coxæ and entire legs rufous, except the posterior tarsi; club of tibiæ and spot on outside of posterior femora at apex black. Propodeum rufous. Abdomen silky, moderately compressed; first segment rufous, with a black medial spot near the apex; second black, with a rufous spot on each side at the apex; third black, with a smaller rufous spot; remainder black. Borer red; sheaths black, tipped with white.

♂.—Similar to the ♀, but with the propleuræ and sides of the propodeum less entirely red. Second segment of flagellum short.

A paratype from Havana, Cuba (C. F. Baker), differs from the type in having entire pleuræ, borders of median lobe of mesonotum and the propodeum red.

This species is very distinct from any other that I know by the coarse reticulation on the thorax. It most nearly approaches *pattersonæ* Melander and Brues.

Fœnus cressoni n. sp.

♀.—Head black; face very sparingly dotted with punctures much finer than the facets of the eyes, slightly pubescent; mandibles acute, rufous, tip darker, shining, punctate, especially toward the base; clypeus broadly emarginate, somewhat sinuate; occiput finely transverse-striate, not interrupted and fairly regular, antennæ black, first segment of the flagellum scarcely clavate; head rather short behind the eyes, hind margin acute. Neck of medium length, transversely wrinkled, with large interstices between the wrinkles. Thorax black; prothorax with an acute tooth on the lateral margin; medial mesothoracic lobe rather finely and closely tranverse-striate, with a few scattered punctures; sides of the thorax reticulate to rugulose, very slightly silvery sericeous; propodeum reticulate, black. Wings stained yellowish, without violaceous reflection or much irridescence; veins and stigma dark. Legs black; ring of white at base of posterior tibiæ and tarsi, on the tibiæ broadened in front; posterior coxæ very finely transverse-striolate. Abdon. [illegible]ull silky black, abruptly truncate at apex, not greatly compressed; two ferrug. [illegible]us spots on each side near the middle subconfluent beneath.

♂.—Similar to female; segments of antennæ as in female, the second joint of flagellum twice longer than first. A little more robust than the female.

A robust species. Three specimens. The front legs sometimes reddish.

Hab.—Vancouver, Canada, Massachusetts.

Fœnus nevadæ n. sp.

♀.—Head black; face laterally silvery sericeous; finely and sparingly punctulate; mandibles subacute, rufous, tipped with black, punctate; clypeus short and broad, shallowly sinuate, broadly, not deeply emarginate; vertex almost imperceptly punctulate, running into minutely transverse striolæ; first segment of flagellum clavate; head behind the eyes narrowed, so as to be subtriangular, posterior emargination narrow, the edge prominently subreflexed; head underneath silvery sericeous. Neck short, transversely wrinkled. Thorax black; sides strongly silvery sericeous; prothorax with a tooth on the lateral angles; thorax entirely and closely covered with deep punctures, about half the size of the ocelli, but not confluent; propodeum coarsely reticulated. Wings hyaline, irridescent, without violaceous reflection; veins dark. Four anterior legs and coxæ rufous; posterior black, except a small white band on the posterior tarsi near base and on the posterior tibiæ near their base, dilated in front; posterior coxæ finely transverse-striolate. Abdomen red, except the extreme base and apex are black; scarcely compressed, tip subtruncate. Borer red, sheaths black, tipped with white.

Described from five specimens in the Cresson collection labelled in Mr. Cresson's writing "*nevadensis* n. sp." The only variation seems to be that one specimen has considerable fuscous on the abdomen. There is one specimen in the U. S. National museum collection that has the head behind the eyes a little less constricted. It is doubtfully referred to this species. The punctuation is a little more obscure, the posterior tibiæ rufous anteriorly. From New Mexico.

Hab.—Nev., N. Mex. (Mesilla Park, May 7th, T. D. A. Cockerell).

Type.—Collection of the American Entomological Society.

Fœnus perplexus Cresson.

1864. *Fœnus perplexus* Cress., ♀, Proc. Ent. Soc. Phila., iii, p. 131.

1889. *Gasteruption perplexum* Schletterer, ♀, Ann. d. k. k. Nath. Hofm. Wien, iv, p. 487.

♀.—Head black, face with a little silvery sericeous; punctation very minute and rather close; mandibles polished, rufous; clypeus sinuate, emarginate, occiput finely punctate, slightly transverse-striate; antennæ pubescent beyond the third segment of the flagellum, scape closely punctured; first segment of the flagellum short, subclavate; head narrowed behind the eyes, posterior margin prominent, subreflexed. Neck medium, closely punctate to subreticulate. Prothorax with an acute tooth on the lateral margin; thorax entirely black; mesothorax above covered with several large punctures at considerable intervals; sides of thorax more closely punctate to subreticulate; propodeum reticulate. Wings hyaline, slightly irridescent, without violaceous reflection; veins and stigma dark. Legs black; posterior coxæ finely transversely striolate. Abdomen black at base and apex, medially ferruginous. Ovipositor red, sheaths black, tipped with white. Length 10-12 mm.

♂.—Similar to female, except that the antennæ are entirely pubescent, and the second segment of the flagellum is half the length of the third; the abdomen is black, with three ferruginous spots on each side.

A distinct and interesting species. The thorax is often silvery sericeous, and the posterior tibiæ sometimes have an obscure white band at their base, broad in front.

Hab.—Colorado, Nevada.

Types.—In the collection of the American Entomological Society.

Fœnus egregrius Schletterer.

1887. *Gasteruption egregrium* Schlett., Ann. k. k. Nath. Hofm. Wien, iv, p. 486.

♀.—Head black; face very closely and minutely punctulate, with here and there a larger punctation, shining, silvery sericeous; mandibles black, tipped with rufous, punctate, polished; clypeus sinuate, rather strongly emarginate; second segment of flagellum clavate; head above minutely transverse-striolate, behind the eyes elongate, posterior margin prominent, subreflexed. Neck rather short, subfinely and irregularly rugulose. Thorax black; prothorax with an acute tooth on the lateral angles; dorsum finely and very weakly transverse-rugulose, with a few indistinct punctations scattered over it, giving the whole a finely shagreened appearance, with a dull lustre; medially behind the groove the punctures become larger and close; on the sides of the thorax they are also large and close, subreticulate; the propodeum is reticulate. Wings stained yellowish fuscous, but slightly irridescent, without violaceous reflection; veins and stigma black. Legs black, base of tibiæ white; posterior coxæ finely transverse-striolate. Abdomen with a luxurious satiny lustre, petiole black, next two segments rufo-ferruginous, remainder black. Length 16 mm.

I have seen two specimens of this species, and they seem to be sufficiently distinct from *F. occidentalis* by the shape and posterior margin of the head, the punctation of the thorax and the color of abdomen. In one specimen the only white on the tibiæ is a ring near the base of the posterior.

Hab.—British Columbia; Idaho (Priest Lake, August, C. V. Piper).

Type.—In the collection of H. de Saussure in Geneva.

Fœnus occidentalis Cresson.

1864. *Fœnus occidentalis* Cresson, ♀, Proc. Ent. Soc. Phila., iii, p. 131.

1883. *Gasteruption occidentale* Schletterer, ♀, ♂, Verh. zool.-bot. Gesell. Wien, xxv, p. 290.

♀.—Head black; face silvery sericeous, minutely, sparingly, but subregularly punctulate; mandibles black, polished, tipped with rufous, apical tooth very blunt; clypeus broadly emarginate; occiput minutely closely and regularly punctulate but not striate; scape punctured, first segment of flagellum clavate; head behind the eyes subquadrate, margin very prominently and broadly reflexed at the sides. Neck of medium length, anteriorly transversely wrinkled, posteriorly punctured. Thorax black, sides slightly silvery sericeous; prothorax with an acute tooth on the sides of the anterior margin; dorsum transverse-rugulose, with close-set large and deep punctures, the sides of the thorax more nearly reticulate; propodeum coarsely reticulate. Wings stained yellowish, not

very irridescent, but often with a strong and beautiful violaceous reflection; nervures and stigma black. Legs black; four anterior knees externally, and sometimes ring at base of posterior tarsi white; posterior coxæ transverse-wrinkled, tending to reticulate beneath. Abdomen with luxuriant satiny lustre; petiole black, following three or four segments ferruginous or rufo-ferruginous; apex black. Length 14 mm.

♂.—Similar to female; second segment of flagellum more than half the length of the third.

This largest and most beautiful of our native species shows no variation, other than as mentioned, in the series of 12 females and males before me.

Hab.—Nevada, Washington, Colorado, California (Dunsmuir, H. F. Wickham).

Types.—In collection of American Entomological Society:

Fœnus rubrofasciatus Kieffer.

1904. *Gasteruption rubrofasciatum* Kieffer, Invert. pac., i, p. 42.

♂.—Black, mandibles, apex of second and third and trace at apex of fourth and fifth abdominal segments red; anterior legs including coxæ reddish-yellow, femora in the middle and tibiæ at apex browner, middle legs brown, coxæ and trochanters black, base of tibiæ white; posterior coxæ and trochanters black, base of femora pale reddish, ring near base of tibiæ white, otherwise brown.

Head opaque, minutely transversely striated; inner margins of compound eyes slightly converging below; malar space almost obsolete; posterior ocelli nearer to the compound eyes than to each other; head narrowed behind the eyes, the posterior margin truncate, slightly concave, slightly rimmed; antennæ short, the second and third segments subequal, together shorter than the fourth; fourth longer than the fifth.

Neck short, reticulated, pronotum with a short tooth; medial mesonotal lobe transversely rugose-wrinkled, parapsides irregularly rugose, posterior part of mesonotum more coarsely transverse-wrinkled; scutellum transverse-wrinkled; mesopleuræ above shagreened, below together with the propodeum reticulate; posterior coxæ minutely transverse-striate. Petiole shorter than the second segment. Length 12 mm.

Hab.—Santa Clara County, California, C. F. Baker. A second specimen received from Mr. Baker under this name from Nevada seems to represent an undescribed species.

Fœnus septentrionalis Schlett.

1889. *Gasteruption septentrionale* Schlett., ♀, Ann. d. k. k. Nath. Hofm. Wien, iv, p. 480.

♀.—"L. 10 mm. Caput opacum, post ocellos tenuissime transverso-striolatum; capitis pars occipitalis mediocriter longa et obconica, margine postico acuto. Genæ brevissimæ. Flagelli articulus secundus quam primus evidenter sesqui longior, tertius secundo longior, quam secundus unacum primo brevior.

Collum breve. Mesonotum ante suturam crenulatam tenuiter transverso-

striolatum, punctulis dispersis valde inconspicuis, post suturam crenulatam tenuissime transverso- rugulosum sive tenuissime coriaceum. Segmentum tenuiter reticulato-rugosum, postice in medio longitudinaliter carinulatum. Coxæ posteriores opacæ sive tenuissime scabræ. Terebra abdomine brevior, abdominis petiolo longior, vaginis nigris, apice albis. Nigrum, pedibus quatuor anticis brunescentibus, tibiis, imprimis posterioribus ad basin albo-signatis.

This species I have not seen. It is closely related to *F. incertus*, but the ovipositor is about the length of the abdomen.

Hab.—British Columbia (Yale).

Type.—In k. k. Nath. Hofm. in Vienna.

Fœnus pensilis Schletterer.

1889. *Gasteruption pensile* Schlett., ♀, Ann. k. k. Nath. Hofm. Wien, iv, p. 483.

"♀. L. 10-11 mm. Caput antice levi-nitidum, supra subtilissime transverso-striolatum sive opacum, post ocellos evidenter transverso-striatum; capitis pars occipitalis mediocriter longa et obconica, margine postico simplici. Genæ vix longitudine flagelli articuli primi. Flagelli articulus secundus quam primus evidenter duplo longior, tertius articulus quam primus triplo longior.

"Collum brevissimum. Mesonotum subtenuiter et evidenter transverso-striolatum, post suturam crenulatam in medio mediocriter tenuiter transverso-rugosum et in rugis inconspicue punctatum. Segmentum medianum evidenter reticulato-rugosum. Coxæ posteriores supra subtiliter transverso-striolatæ. Terebra quam corpus totum paullulo longior, vaginis nigris, apice albis. Nigrum, pedibus fuscis, tibiis ad basin tarsisque exceptis posterioribus albatis."

Hab.—Saskatchewan River.

Type.—In the collection of H. de Saussure.

Fœnus arcus Couper.

1870. *Feonus arca* Couper, Canad. Ent., vol. ii, p. 110.

"Head black, glossy, impunctured; eyes black, round; antennæ black, two-eighths of an inch long; thorax not so black as head; the sides beneath and between dark chestnut, interspersed with short fulvous hairs; wings fuliginous; nervures and stigma black; legs black, hairy; base of the femora fulvous; abdomen bright red, with scattered fulvous hairs; ovipositor black, as long as the antennæ. Length 3-8ths inch."

Mr. Couper mentions finding this in a cocoon under the bark of a tree.

"On the 8th of January last, while searching for hybernating Coleoptera in the woods near Ottawa, I had occasion to strip the bark of a decayed ash tree, under which, among other insect store, I found a small transparent and curiously formed cocoon containing a larva of a fly which was at that time unknown to me. The cocoon was imbedded in the bark occupying what I am now led to believe the excavation made by a grub of Cerambyx or some other coleopterous bark borer * * * *. The shape of the cocoon is oblong surrounded by a band and covered by a thin pellucid lid, and the form resembles a small coffin. The

head of the insect was placed at the small end and the space in front of it is packed with minute particles of dust, evidently produced from the bark by the original occupier. Length of cocoon ⅝ of an inch" (Couper).

Hab.—Ottawa.

Fœnus torridus n. sp.

Black and reddish-brown, the pleuræ except mesopleuræ and the sides of the abdomen toward the ends of the segments somewhat more reddish; legs from base to knees reddish-brown; anterior and middle tibiæ and tarsi, except brown spot on tibiæ within, and apex of metatarsus and remaining tarsal segments white, posterior tibiæ with ring near base prolonged within, apical three-fourths of metatarsus and following two segments white; head, especially sides of face, and thorax silvery tomentose; wings hyaline; habitus very slender, with a long neck.

♀.—Posterior ocelli on a line with the back of the compound eyes; occiput not prolonged behind the eyes, much tapered, the margin scarcely reflexed; face much narrowed below the antennæ, impressed lines beneath the antennæ diverging below, forming a somewhat elongate triangle, the base of which is the margin of the clypeus; clypeus shallowly emarginate; eyes touching the posterior condyle of the mandibles; face, vertex and cheeks impunctate, dully shining; antennæ slightly thickened beyond the third segment, this considerably shorter than the fourth. Neck rather longer than the head, minutely transversely wrinkled. Shoulders with a small sharp tooth; medial mesothoracic lobe covered with regular, well separated, moderate punctures, confluent along the parapsidal grooves, between these many much smaller ones; parapsidal and lateral grooves distinct; scutellum sculptured similarly to the medial lobe of the mesonotum; sides lobes of mesonotum with fewer coarse punctures than the medial; metapleuræ and propodeum coarsely reticulate. Posterior coxæ minutely transversely wrinkled; apex of first segment of posterior trochanters completely separated from the base by a transverse suture, so that the trochanters appear three-segmented. Wings hyaline, with violaceous reflection; *the cell M_4 triangular, almost linear, veins M_3 and M_4 separating immediately upon separating from M_{1+2}.*

Length 13.5 mm.; forewing 6 mm.; ovipositor 11.5.

♂.—Similar to ♀, the punctures somewhat thicker on mesonotum and occasionally confluent; spiracle on middle of sixth dorsal segment large and conspicuous.

Hab.—Mexico.

Types.—Collection American Entomological Society.

AULACINÆ.

I have treated the North American species of this subfamily in a previous paper,* and the present may be considered as in part supplementing, in part revising it.

The hind coxæ of the males are normal, but in the females are

* Trans. Am. Ent. Soc., xxvii, p. 319.

sculptured on the inner surface with a groove, at the base of which is a well-marked tooth, which in *Pammegischia* and *Aulacus* is greatly prolonged. I have not seen *Aulacus*, but according to Kieffer's figure, it is much less prolonged in *Aulacus* than in *Pammegischia*. These two genera are also united with each other as well as with *Interaulacus* and *Aulacinus* by the absence of any veins except Sc + R + M in the hind wings (Fig. 69). Likewise in these four genera the claws are simple or at most with two teeth beneath (Fig. 39). *Pammegischia* and *Aulacus* are parasitic on *Xiphydria*. The hosts of *Aulacinus* and *Interaulacus* are not known. All other genera so far as known are parasitic on the larvæ of Coleoptera. So that it seems as though these four genera may together form a distinct tribe in contrast to the remaining genera. There is but one known species of *Aulacus*, although most members of the subfamily have been described as belonging to that genus.

Deraiodontus Bradley is a pure synonym of *Pristaulacus* Kieffer. In my former paper therefore substitute for *Deraiodontus* Bradley, *Pristaulacus* Kieffer, and for *Pristaulacus* Kieffer, the new name *Neaulacus*.

The most generalized wing of the family is *Aulacinus* (Fig. 67). Note that R_5 is entire; the base of M_{3+4} distant from r-m. Cell M_4 is very small—rather a specialization, as is also the loss of venation in the hind wings. But the simple tarsal claw is a primitive character. The wing of *Pammegischia ouelletii* (Fig. 68) was figured to show the trouble that may arise from malformations if we do not exercise care. There is an extra cell cut off from first M_2, and R_3 enters the stigma instead of being separated from it by r. Both of these characters are monstrosities. The left hand wing of the type specimen is normal. The wing of *Pammegischia ashmeadi* (Fig. 69) is typical of the genus. A slight advance is shown in the partial loss of R_5. Specialization is also shown in the prolongation of the coxæ of the female. *Pammegischia* and *Aulacus* may together be considered to form a sort of side branch. Going back to *Aulacinus* we find *Interaulacus* (Fig. 70) the first step along another line, from which probably descended the remaining genera. The base of M_{3+4} is still distant from r-m. R_5 is entirely lost. The hind wings are as in *Pammegischia*. But the claws have gained a single tooth. The venation in the remaining

genera is always about the same, and is illustrated by *Odontaulacus editus* (Fig. 71). The hind wings are more generalized than in the preceding. In *Semenovius* they have two distinct cells. In the front wings the base of M_{3+4} and r-m are approximate or joined. In the different genera we have specialization manifesting itself in an increase in the number of teeth on the tarsal claws, varying from two to four (Figs. 40–42).

The mouth-parts are shown in Figs. 24 and 25.

The arrangement of genera in the following table I believe to be as nearly natural as a linear grouping may be.

TABLE TO THE GENERA OF AULACINÆ.

1. Posterior wings without venation, except R + M (Fig. 69); claws simple, or with one or two teeth (AULACINI) ..... (2).
   Posterior wings with one or two closed cells (Fig. 71); claws with two or more teeth (Figs. 40–42) (PRISTAULACINI) ..... (5).
2. Anterior wings without R_5 or with only a stump thereof; base of M_{3+4} not far removed from r-m ..... (3).
   Anterior wings with R_5 present and complete; base of M_{3+4} far removed from r-m (Fig. 67) ..... **Aulacinus** Westwood.
   (Type *Aulacus mœrens* Westw.)
3. Claws simple (Fig. 39); posterior coxæ of the female greatly prolonged within to far beyond the insertion of the trochanters; forehead with a crest above the antennæ; two distinct pits on each side below the antennæ.
   Pammegischia Provancher.
   (Type *P. burquei* Provancher.)
   Claws with one or two teeth beneath ..... (4).
4. Claws with one tooth beneath; posterior coxæ of female much prolonged within ..... **Aulacus** Jurine.
   (Type *A. striatus* Jurine.)
   Claws with two teeth beneath; posterior coxæ of female simple; no frontal crest; pits below the antennæ smaller than in *Pammegischia*; anterior margin of the prothorax with a distinct tooth on each lateral angle.
   Interaulacus n. gen.
   (Type *I. kiefferi* n. sp.)
5. Anterior wings with the base of the longitudinal sector of the free part of M wanting; the base of M_{3+4} far removed from r-m; claws with four teeth beneath ..... **Tropaulacus** n. gen.
   (Type *T. torridus* n. sp.)
   Anterior wings with M complete; base of M_{3+4} not far removed from r-m .. (6).
6. Claws with two teeth (Fig. 40) ..... (7).
   Claws with three or more teeth (Figs. 41, 42) ..... (Pristaulacus Kieffer) (8).
7. Posterior wings with two closed cells (Fig. 71) .... **Odontaulacus** Kieffer.
   (Type *Aulacus rufitarsis* Cresson).
   Posteror wings with only one closed cell ..... **Semenovius** new name (= *Semenowia* Kieffer, preoc.) (= *Anaulacus* Semenow, preoc.).
   (Type *Aulacus sibiricola* Semenow.)

8. Claws with four teeth (Fig. 42) ..... (9).
Claws with three teeth (Fig. 41); anterior border of the prothorax usually rounded, not bearing a tooth ....Subgen. **Oleisoprister** Bradley.
(Type *Aulacus firmus* Cresson.)
9. Anterior margin of prothorax rounded, not bearing a tooth....**Neaulacus** n. subgen. (= *Pristaulacus* as previously used by me).
(Type *Aulacus occidentalis* Cresson.
Anterior margin of the prothorax angled, forming a distinct spine or tooth.
Subgen. **Pristaulacus** Kieffer (= *Deraiodontus* Bradley).
(Type *P. chlapowskii* Kieffer.)

PAMMEGISCHIA Provancher.

The following table to our species may be substituted for my previous one.

1. Forehead not at all transversely wrinkled; medial mesothoracic lobe not emarginate anteriorly ..... (2).
Forehead transversely wrinkled or reticulate ..... (3).
2. Frontal crest distinct; forehead punctured, more especially below; second joint of the antennæ as long as the third. Thorax stained with brown; legs brown and pallid; abdomen and head tawny.
lovei Ashmead.
Frontal crest indistinct; forehead polished and almost impunctate; second joint of the antennæ two-thirds as long as the third. Reddish-tawny all over except the apex of the propodeum brownish.
ouelletii Bradley.
3. Forehead transversely wrinkled, especially below..... (4).
Forehead coarsely and deeply reticulate all over; occiput smooth and polished. Black, basal half of the abdomen except the very base of the petiole red; legs brown, the tibiæ and knees pale .....**ashmeadi** n. sp.
4. Forehead wrinkled, especially below, the wrinkles not especially prominent and somewhat broken, occiput not distinctly wrinkled ..... (5).
Forehead all over and occiput mesally with transverse, very prominent, and little broken wrinkles. Reddish-yellow all over, except the upper parts of the head and thorax, the propodeum and the apex of the abdomen black .....**minnesotæ** n. sp.
5. Color black and red, the legs more or less yellow..... (6).
Tawny all over, except the sutures of the thorax above, or the entire thorax and forehead black..... .....**burquei** Provancher.
6. Legs beyond the coxæ, and the face tawny.....**pallipes** Cresson.
Legs beyond the coxæ brown, anterior tibiæ and tarsi and posterior tarsi tawny.....**xiphydriæ** Ashmead.

Pammegischia ouelletii Bradley.

The venation shown in Fig. 68 is abnormal. The left wing of the type shows venation similar to Fig. 69.

Pammegischia burquei Provancher.

Additional localities are as follows: Anglesea, New Jersey; Morgantown, West Virginia, coll. (Dr. A. D. Hopkins, accessions No. 7327 Hopk. W. Va., May 1897, from dead branches of hard maple infested by *Xiphydria albicornis*). The two specimens from West Virginia have the thorax and forehead entirely black.

Pammegischia xiphydriæ Ashmead.

A metatype is precisely like *pallipes* Cresson (type of *weedi* Ashmead) in size, habitus and everything except the greater amount of brown on the legs. I think this species must be the female of *pallipes*. *Lovei* Ashmead, previous to seeing which, I had thought might occupy that position, is distinct.

In the type the ovipositor is broken; in the metatype it is 3 mm. long; the total length 5 mm.

Additional localities: Caroline to Harford, New York, June 15, 1904, Dr. A. D. MacGillivray (metatype, in coll. Cornell Univ.). A specimen collected by Mr. Beutenmüller in the Black Mountains of North Carolina probably belongs here; Muskoka, Ontario (E. P. Van Duzee).

Pammegischia ashmeadi n. sp. (Fig. 69).

♀.—Black; first abdominal segment except base, and base of second red; the knees, tarsi, anterior tibiæ and middle tibiæ in front and at apex pale yellowish; rest of legs beyond the coxæ brown. Frontal crest distinct; forehead deeply and irregularly reticulate; occiput smooth, polished and impunctate; medial mesothoracic lobe somewhat gibbous, with a shallow emargination marked laterally by the two anterior grooves, which are distinct. Projection on posterior coxæ longer than in *P. burquei*; claws simple; posterior wings without venation, except Sc + R + M. Abdomen short and stout; ovipositor about 7 mm. long. Length 8 mm.

Hab.—Montreal, Quebec, one female.

Type.—In the author's collection.

Pammegischia minnesotæ n. sp.

♂.—Reddish tawny; forehead, occiput, dorsum and propodeum black; apical four joints of the abdomen blackish, rest of the abdomen red. Forehead with several very prominent well separated and unbroken transverse wrinkles; the occiput also with distinct wrinkles, especially mesally. Mesonotum very shallowly emarginate, the borders of the emarginations marked by the anterior grooves. Posterior wings without veins; claws simple. Length 7 mm.

Hab.—Lake Vermillion, northern Minnesota, O. Luger.

Type.—U. S. Nat. Mus.

INTERAULACUS n. gen.

Type.—I. kiefferi n. sp.

This genus is a sort of connecting link between the Aulacini and the Pristaulacini. The genus is entirely South American so far as I know. Besides the type, *Pristaulacus caudatus* and *P. tricolor* Szepligeti, and perhaps *P. hæmorrhoidellus* Westwood belong to this genus, as doubtless do other described species.

Interaulacus kiefferi n. sp.

♀.—Black; four anterior knees and base of tarsi, base of posterior tarsi and middle of the vaginæ white; anterior tibiæ brown. Forehead and occiput with well-separated round deep punctures, rather regularly scattered over the surface; temples more finely and closely punctured; posterior ocelli nearer the compound eyes than each other; basal four antennal segments in the proportion of 3 3 5-10. Medial mesothoracic lobe gibbous, deeply emarginate, the sides very acute in front, strongly transversely carinate. Posterior metatarsus one-third longer than the remaining joints together; wings hyaline, except the apical margin is fuscous. Petiole long and slender; abdomen slender; ovipositor 12 mm. long. Length 10 mm.

Hab.—Brazil.

Type and two paratypes in the collection of Cornell University.

SEMENOVIUS n. nom.

= *Anaulacus* Semenov, nec. MacLeay (Coleop., 1825).
= *Semenovia* Kieffer, nec Weise (Coleop., 1889).

Type.—Anaulacus sibiricola Semenov.

Kieffer erects *Semenovia** without mentioning any species, but doubtless intended to replace *Anaulacus* Semenov, as the characters given apply to that genus. Unfortunately *Semenovia* is itself preoccupied, and another change becomes necessary.

ODONTAULACUS Kieffer.

Type.—Aulacus rufitarsis Cresson.

Semenov was correct in allying *Aulacus rufitarsis* Cresson with *Anaulacus* Semenov. But Kieffer distinguishes them by the venation of the hind wings, erecting *Odontaulacus* for *Aulacus minor* Cresson and *A. rufitarsis* Cresson, neither being mentioned as type. We may call *rufitarsis* type, as that is the more distinct and common of the two.

In my former paper I suppressed *Aulacus editus, abdominalis* and *bilobatus*. Since then I have examined some hundreds of specimens,

* Spec. Hym. d' Eur. (Andre), vii, bis, p. 382.

and have concluded that they may be recognized. Although closely related and apparently intergrading, certain specimens being of questionable identity, they may for the most part be separated by the following table. *Rufitarsis*, *editus*, and *minor* are western, *abdominalis* and *bilobatus* eastern. Both east and west they seem to be the commonest species of the subfamily, especially *editus* and *rufitarsis* in the west.

1. Abdomen with the apical half black .....(2).
   Abdomen red, the very apex occasionally dusky or black .....(4).
2. Posterior femora and tibiæ dark brown; abdomen with the second and the apex of the first segments dull claret-red; wings clear hyaline. Hab. Canada to Virginia.....**bilobatus** Provancher, ♂, ♀.
   Legs black, except tarsi are yellowish; abdomen more of a brick-red; wings stained smoky. Hab.—Rocky Mountains and west. **rufitarsis** Cresson, ♂.
   Legs red or yellowish; abdomen brick-red or yellowish. Hab.—Washington and Nevada.....(3).
3. Legs obscurely yellowish or rufous; posterior tibiæ and tarsi brown; species slender.....**minor** Cresson, ♂, ♀.
   Legs all yellowish; species more robust.....**editus** Cresson, ♂.
4. Legs all black, except posterior tarsi. Hab.—Colorado. **rufitarsis** Cresson, ♀.
   Legs, at least four anterior pairs, rufous.....(5).
5. Posterior femora black or dark brown. Hab.—Canada and New England. **abdominalis** Cresson, ♀.
   Posterior femora and sometimes tibiæ red; wings often smoky, with violaceous reflection. Hab.—Nevada and California to British Columbia. **editus** Cresson, ♀.

Odontaulacus editus Cresson (Fig. 24).

Nevada; Washington (Easton, T. Kincaid; Blue Mountains, July 15, '96, coll. C. V. Piper); California (Santa Cruz Mountains); British Columbia (Revelstoke, Selkirk Mountains, 26 spec., collected by the author, July 8, '05.

Odontaulacus rufitarsis Cresson.

Colorado; Washington (Easton, T. Kincaid).

Odontaulacus abdominalis Cresson.

Georgia; Canada; New Hampshire (Webster, coll. W. F. Fiske).

Odontaulacus bilobatus Provancher (Fig. 25).

Canada (Terrebonne, P. Q., July 20, 1901, coll. C. J. Ouellet); West Virginia (Dr. A. D. Hopkins).

TROPAULACUS n. gen.

Head quadrate; a distinct pit below the antennæ on each side; clypeus mucronate, separated by a suture from the face; antennæ 14-segmented, the last segment flattened, obtusely truncate, concave above. Mesonotum forming a part of both cephalic and dorsal walls of the thorax, so that the insect appears slightly hump-backed, but the medial lobe not very gibbous; pronotum without teeth on the anterior margin. In the front wings the base of the longitudinal sector of the free part of M is wanting, as in most Ichneumonidæ, but represented by a stump of a vein, the cells R + 1st R_1 and M_1 being thus partly united; the free part of M_{3-4} separating a greater distance than its own length basad of the posterior end of the radio-medial cross vein; the position of R_5 indicate by a bulla, and a trace of a stump where it formerly joined M_1, which is somewhat angled at that spot; hind wings with all veins obsolescent except M and M_{1-2} and $R_5 + M_1$ and $R_{4-5} + M_1$. Claws with four distinct teeth beneath, and sometimes a scarcely defined fifth.

Tropaulacus torridus n. sp.

♀.—Brown; the antennæ except pedicel and first and last four segments of the flagellum, entire head except spot below ocelli, legs except the coxæ, trochanters, and middle of the femora of the posterior pair, petiole and vaginæ except apex yellow; tip of mandibles, apex of the antennæ and of the vaginæ black. Anterior half of front wings and apex deep brown, rest yellowish-hyaline except the margin, somewhat smoky; entire body clothed with short yellow pubescence.

Head from above quadrate, the ocelli considerably forward of a line connecting the posterior margins of the compound eyes; clypeus mucronate, a deep pit below each antenna; compound eyes removed from the base of the mandibles by more than the length of the pedicel; head impunctate, weakly shining; first three segments of the flagellum in the proportions of 3-4.5-4.1; flagellum beyond the first segment covered with rows of whitish scales. Mesonotum scarcely gibbous, mesally emarginate, transversely rugose, the parapsidal grooves distinct, scutellum with wrinkles concentric around its apex; propodeum reticulate; posterior coxæ weakly wrinkled. Triangular spot at apex of Cu_1, all of M_3, first and second M_2, M_1 caudal third of R_5, half of R_4 and two-thirds of R_3, yellowish hyaline, the margin of M_1 and second M_2 stained somewhat smoky; rest of front wing deep brown, posterior wings yellowish hyaline, a faintly brownish mark along the upper and outer border, Cu and Cu_1 obsolescent, transverse sector of the free part of M somewhat so. Abdomen short, clavate, petiole distinct. Length 10.5 mm.; antennæ 7 mm.; front wing 9 mm.; ovipositor 7 mm.

One female, Brownsville, Texas, June, coll. Univ. of Kansas.

By its peculiarly marked wings this species is very different in appearance from any other of our nearctic Aulacinæ, indeed, coming as it does from Brownsville, in the extreme south end of the exten-

sion of the tropical region into Texas, may be considered as a fundamentally neotropical species, an affinity further corroborated by its coloring.

I am indebted to Mr. Henry L. Viereck for permission to study and describe this form.

PRISTAULACUS Kieffer.

I think it will be best to group *Oleisoprister*, *Neaulacus* and *Pristaulacus* sen. str. together as subgenera of Kieffer's *Pristaulacus*

Pristaulacus (Oleisoprister) dentatus n. sp.

♂.—Black; tarsi brown, apical half of petiole (more ventrally) and basal two-thirds of second segment red. Head smooth and polished with only fine setigerous punctures. Medial mesothoracic lobe somewhat gibbous, shallowly emarginate; prothorax with a slight blunt irregular tooth on the antero-lateral angle. Posterior metatarsus one-eighth longer than the remaining joints together, three times as long as the second joint; wings hyaline, except a large fuscous spot beneath the stigma. Petiole distinct but short. Length 9 mm.

The tooth on the lateral angles of the prothorax will distinguish this species from all others.

Hab.—Ormsby County, Nevada, C. F. Baker.

Type.—In the coll. C. F. Baker, Para, Brazil.

Pristaulacus (Oleisoprister) firmus Cresson.

The only example that I have seen besides the unique type is a female sent me by Prof. C. V. Piper from Mt. Rainier, Washington.

Pristaulacus (Oleisoprister) resutorivorus Westwood.

Olympia, Washington, one female.

Pristaulacus (Oleisoprister) abbottii Westwood.

Washington, D. C.; Marquette, Michigan, April 7th.

Pristaulacus (Oleisoprister) stigmaterus Cresson.

Missouri; Norton's Landing, Cayuga Lake, New York, June 21st.

NEAULACUS n. subgen.

Type.—*Aulacus occidentalis* Cresson.

Coextensive with *Pristaulacus* as used in my former paper.

Pristaulacus flavipes Kieffer, Arkiv. f. Zool., I, p. 559, probably belongs here.

Pristaulacus (Neaulacus) occidentalis Cresson.

Blue Mountains, Washington, July 15th, three males, one female; Beulah, New Mexico, coll. Viereck; Idaho.

Pristaulacus (Neaulacus) melleus Cresson.

Corvallis, Oregon, July 21st.

Pristaulacus (Neaulacus) pacificus Cresson.

Corvallis, Oregon, July 15th.

Pristaulacus (Neaulacus) fasciatus Say.

Michigan, coll. Townsend; Cadet, Missouri, coll. J. C. Barlow; Pennsylvania (two specimens in coll. A. E. S.); Marion County, Arkansas (J. C. Bridwell).

PRISTAULACUS Kieffer.

Type.—Pristaulacus chlapowskii Kieffer.

Embraces those species included under *Deraiodontus* in my former paper.

TABLE TO THE SPECIES OF PRISTAULACUS.

1. Wings dark violaceous. Black, except more or less of the legs, and in the male the apical half of the antennæ are yellow..**violaceus** Bradley.
   Wings hyaline or slightly clouded, sometimes with fuscous spots and a violaceous reflection.....(2).
2. Ultimate tooth on the tarsal claw beneath shorter than the penultimate; medial mesothoracic lobe gibbous and emarginate. Black; apex of the petiole and legs beyond coxæ red..... **hopkinsi** n. sp.
   Ultimate tooth on the tarsal claw longer than the penultimate (Fig. 42)...(3).
3. Medial mesothoracic lobe strongly gibbous.....(4).
   Medial mesothoracic lobe not strongly gibbous.....(5).
4. Wings hyaline, without violaceous reflection. Abdomen black, except the first ventral segment sometimes dull rufous..... ....**niger** Shuckard.
   Wings of the female showing strong violaceous reflection; mesopleuræ shallowly punctured, wrinkled above. Abdomen rufous, marked with black..... .....**montanus** Cresson.
5. Wings showing strong violaceous reflection in the female; much fuscous present in the basal portion, paler in the male; mesopleuræ deeply irregularly reticulated; petiole short. Legs black.
   fuscalatus Bradley.
   Wings without violaceous reflection, or more than a trace of fuscous in the basal portion; petiole long; legs flavous.... **flavicrurus** Bradley.

Pristaulacus violaceus Bradley, Zeits. f. Hym. u. Dipt., v, p. 26.

This species may be distinguished from the others by the dark violaceous wings.

Pristaulacus hopkinsii n. sp.

♀.—Black; apex of petiole and legs beyond the coxæ uniform dull red. Has the ultimate tooth on the tarsal claw shorter than the penultimate. Closely resembles *Oleisoprister resutorivorus* Westwood, but has the middle lobe of the mesonotum gibbous and emarginate much more than in that species. Margin of pronotum has a sharp tooth.

Hab.—Kirbyville, Texas, November 11, '02, Dr. A. D. Hopkins. *Type* and one paratype, accessions No. 1231d Hopkins, U. S., deposited in the author's collection; another paratype in collection Amer. Ent. Soc.

Pristaulacus niger Shuckard.

Lake Pleasant, New York, July 20, '87; Albany, New York, September 21, 1900; Joliette, P. Q., Can., July 24, C. J. Ouellet.

Pristaulacus montanus Cresson.

From the Santa Cruz Mountains, California.

Pristaulacus fuscalatus Bradley.

♂.—Last four segments of abdomen black; wings without violaceous reflection, the fuscous bands present but paler, especially the basal ones.

Claremont, California, C. F. Baker; Los Angeles County, California (metatype, ♀).

Pristaulacus flavicrurus Bradley.

The U. S. National Museum collection contains a metatype from Agric. Coll., Michigan; Keene Valley, Essex County, New York, July 24, 1890, collection New York State Museum.

EVANIINÆ.

1887. Evaniinæ, Cameron, Biol. Centr. Amer., p. 422.

The prevalent color is black, and this is sometimes varied with red, less often with yellow and sometimes a little white on the legs or antennæ. The head, body and legs are covered with a short yellowish or whitish pubescence, sometimes thick enough to obscure the sculpture, especially on the metaventer, producing on the sides, head and propodeum of some species a bright silvery sheen.

The head is transverse to tranverse-quadrate, very different from the head of either of the other two subfamilies; it is most like that of Aulacinæ, but when seen from the side is less convex in front, and pointed or attenuated above instead of rounded; in the Fœninæ the head is long, oval, and so attached as to normally throw the face in plane with the dorsum; in Evaniinæ the face is always at right angles to the plane of the dorsum. Posteriorly the entire head is concave, usually deeply so, and the rim where the concave posterior part meets the convex anterior is usually accentuated by a little ridge marking what I have called the posterior angle of the occiput and temples; in the Aulacinæ it is somewhat similar, but in the Fœninæ

the posterior concavity is reduced to a small cup like pit in which the neck is inserted, and the rest of the posterior (in this case lower) portion is convex and not separated from the temples. Seen from above, that is looking squarely down on the vertex (Figs. 10, 13 and 15), the head of Evaniinæ is transverse to almost transverse quadrate and shows a varying distance between the eyes and the posterior margin of the occiput. The sides may be inflated, square or rounded behind the eyes. The ocelli are three in number; the anterior one sometimes somewhat transverse. Whether or not the posterior ones are nearer to each other or to the compound eyes is a character of specific value. The eyes from this view may be prominent or not. The profile of the head varies in shape (Figs. 9, 14, 16 and 17). It is nearly always broadest below the middle, and narrowed, even bluntly pointed at the vertex. The forehead may be plain or convex. The eye is always more or less slanting, making the temples broadest below, and it is of varying length, extending in *Evaniella californica* (Fig. 9) scarcely below the insertion of the antennæ, but usually much below this, never, however, very closely approaching the mandibles. From in front the head varies from round to nearly triangular, or may be somewhat oblong, as in *Acanthinevania princeps* and *A. longigena*, etc. The eyes from this position may or may not be prominent; their inner margins are parallel, or somewhat converging. The mandibles have one or more blunt lobes within. The clypeus is usually mucronate or obtusely pointed, not separated from the face above, but sometimes set off laterally by a short groove; together with the face it is often swollen or broadly convex. There may be a longitudinal carina in the middle of the face and one on each side, and frequently in in Evaniini a short longitudinal interantennal carina. The antennæ (Figs. 55 and 59) are situated at varying distances apart, usually about the height of the middle of the eyes, but sometimes as low as the base, depending more on the length of the eyes than difference in the actual position of the antennæ. The scape in Evaniinæ and at least sometimes in Hyptiini is much longer in the female than in the male. The second joint is ordinarily very short, sometimes not so, and this I have always called the pedicel. I have counted the flagellum as beginning with the third joint, the relations of which to the fourth are of specific value. There are thirteen joints altogether in each sex. In the female the flagellum is

sometimes thickened, particularly in *Semæomyia*, where it is strongly incrassated beyond the middle, see Fig. 55. The forehead is more or less convex in Hyptiini, but in Evaniinæ it is concave, forming a distinct basin in which the two antennæ are inserted, and this is bordered below and usually laterally by a distinct carina or rim.

I have studied the mouth-parts from glycerine mounts of all the genera but two (Pl. VIII), and find that the maxillary palpi are 5 jointed, the palpiger distinct, and the labial palpi usually 4-jointed, in *Hyptia* 3 jointed (Fig. 37). In *Evania* and especially in *Hyptia* the third joint of the labial palpi is strongly inflated, and sub-triangular (Figs. 28 and 29); the labium in *Evania* is broadly oval, highly chitinized and conceals the rather short ligula; this is also true in *Hyptia*, but in that genus the labium is broader, rather pear-shaped; in *Acanthinevania* (Figs. 26) it consists of two narrow chitinized plates, which do not conceal the long lingula; in *Evaniella* (Fig. 35) the arrangement is similar, but the labium is a little broader; in *Szepligetella* the ligula is long, but the labium broad as in *Evania*.

The neck is short, shorter than in Aulacinæ and much shorter than in Fœninæ, so that the head normally covers the collar or pronotum (Fig. 18). If we remove the head and look at the thorax from in front (Fig. 19), we will see the pronotum as an irregular transverse piece forming the upper and side margin of the cavity vacuated by the neck, extending down laterally in a narrow point almost to the coxæ (Fig. 19). The upper margin is more or less arcuate, sometimes nearly straight and extends back below the mesonotum to the tegulæ. The shoulders, spoken of as the humeral angles (Fig. 19), may be entirely rounded, or sharply angled, and this character is very useful in classification. Below the cavity of the neck, and somewhat depressed, are two oval sclerites, which represent the propleuræ (Fig. 19), and adjoin the procoxæ below; the latter are in juxtaposition (Fig. 19).

If we examine the dorsum from above we will see the mesonotum as a large piece, rounded in front and extending backward to behind the anterior wings, where a straight transverse suture separates it from the scutellum. The latter is indistinct in North American Hyptiæ, so that the mesonotum and scutellum superficially appear as one piece. The mesonotum is of varying degrees of convexity, but never gibbous, as in Aulacinæ. The maximum number of

grooves on it are as follows: a regularly curved groove on each side extending from the posterior to the anterior margins, spoken of as the parapsidal groove: a short longitudinal groove on each side between these and the tegulæ, called the lateral grooves: and two very short grooves in the middle extending backwards from the anterior margin, called the anterior grooves. These are all present in *E. appendigaster*, and form good characters for separating species. The mesopleuræ (Fig. 18) are oblique rhomboidal sclerites, partially separated from the mesoventer only by an obscure groove. An oblique sulcus traverses it in which the femora of the middle legs may be fitted, when drawn up, and which together with the posterior part is highly polished in *Hyptia*. Anterior to this sulcus the sclerite is rounded out and full, forming what I have called the anterior swelling. The entire venter is usually more finely punctured than the other sclerites. The middle coxæ occasionally are placed far posteriorly, thus prolonging the mesoventer; the latter is mesally divided by a longitudinal suture, and ends between the coxæ in a bifurcate process or furcula. The middle coxæ are placed wider apart than the posterior, but the ratio of the two distances varies in different species. The metaventer is similar, but undivided from the metapleuræ, and without a medial sinus. The posterior coxæ are more or less closely placed, and the furcula in which the metaventer ends is of primary specific importance; the lobes or tynes may be mere knobs (as generally in *Hyptia*), or may be elongate, parallel (Fig. 64) or divergent (Fig. 66) processes. The metapleura (Fig. 18) is roughly triangular, with its apex beneath the posterior wings; it is often not separated posteriorly from the propodeum. The scutellum is a large nearly quadrate piece. Directly behind it and sunk in a deep depression, forming scarcely more than a transverse line, is a sclerite that I have called the metanotum, although it may be the postscutellum (Figs. 62 and 63). If looked at from the side this sclerite seems to form the bottom of a narrow groove, which, in Evaniinæ, has very steep walls, in Hyptiini these walls are more sloping, a difference illustrated by Figs. 62 and 63.

The distance from the metanotum to the insertion of the petiole varies, but is approximately and on the average a little less than the length of the petiole, and about the length of the scutellum; behind this the propodeum is produced a short distance and then

slopes off more or less abruptly into the posterior face or truncature, which may be flat, convex or concave, with a mesal angle. The propodeum is almost always reticulate, except above the petiole, where it may be punctured or rugose. In the genus *Hyptia* the shape of the reticulations on the sides just behind and perhaps extending over the metapleuræ is of prime specific importance (Pl. V).

The abdomen in the female Evaniini is about the shape of an isosceles triangle, base uppermost, and the outer angle with the pygidium produced into a point from which the ovipositor may be exserted (Fig. 18). In the male it is narrowly oval. Always in *Hyptia* and usually in all Hyptiini the abdomen of the male and female are alike, round and without any visible sign of ovipositor; often it is impossible to distinguish the sexes. In both tribes the petiole is long, flattened below, and often striate or punctured, especially on the sides; it is not enlarged apically and is distinctly separated from the rest of the abdomen. The abdomen proper is highly chitinized; in every species I have seen, smooth, black and polished; it is very strongly compressed; the ventral segments only narrowly exposed; these also chitinized and forming a sharp mesal keel at the lower edge of the abdomen. The ovipositor is never exserted.

The posterior coxæ are grooved above for the reception of the femora. In all genera except *Hyptia*, and probably *Evaniellus*, the posterior legs are very elongate (Fig. 60); in the former genus they are only the length of the body, and the posterior tibiæ are distinctly thickened at their apex (Fig. 61). In two genera the posterior legs bear numerous strong spines in rows; also in *Hyptia* there are rows of very minute spines, visible only with favorable light and under a strong lens, or more distinct in one species. The posterior tibiæ are armed with two long spurs, and the proportion of the longer of these to the metatarsus (first tarsal joint) is of specific importance. The proportion of the metatarsus to the following joints is also important, but is nearly fixed in *Hyptia*. In all genera there is a distinct tooth within the tarsal claw (Figs. 44–54), and the shape and position of this and its angle with the outer ray is of specific value in some genera, but nearly constant in *Hyptia*. Sometimes as in *Zeuxevania* (Fig. 50) and *Semaeomyia* (Fig. 51) the claw is bifid, and the inner ray much stouter and longer than the outer.

The wings of the subfamily are of special interest, inasmuch as we find in them a very complete series showing specialization by atrophy, from the condition found in *Evania* as the most generalized to that found in *Evaniellus* at the other end of the group. The wing of *Evania appendigaster* (Fig. 76) is as generalized as any I know of in the subfamily, with the exception of a few which show R_1 more distinctly (see Fig. 75). C and Sc + R + M are separated as in Aulacinæ and Gasteruptioninæ, forming a distinct cell C; R_3 after separating from R_4 bends either obtusely or acutely or at right angles upward, and reaches the margin from one-third to two-thirds the distance from the stigma to the apex, but the angle at which it bends seems not to be entirely constant within a species. As has been stated R_4 is present in the most generalized type (Fig. 75), but it is always partly atrophied, and usually there is only a stump or no trace at all of it left. R_5 is never present. M separates from R within or close to the stigma, running almost backward till it reaches m-cu when it turns at right angles; m-cu is thus very long, and the cell R + 1st R_1 is diamond shaped. But in *Zeuxevania* (Figs. 80–81) M separates from Sc + R about two-thirds of the way from the base of the wing to the stigma, or the base of M is entirely wanting, if present it runs backward a short distance and joins m-cu, this vein being much shorter than in *Evania*, and continuing in an unbroken curve with the longitudinal part of M. After R_4 the next vein to become atrophied is M_{1-2} and M_1 at its base, and later along its whole length together with m and the longitudinal part of M_2 (Figs. 76–80). A trace of these may generally be seen except in *Evaniellus*, *Hyptia*, *Semæodogaster* and *Semæomyia* (Figs. 84–87); in *Evaniscus* (Fig. 82) the longitudinal part of the base of M (from m cu to separation of M_{3-4}) is lost; *Zeuxevania* (Figs. 80 and 81), which has been described, seems to be the next modification, and along a different line, the only instance which involves modification of the position rather than atrophy of the nervures. In *Semæodogaster* and *Semæomyia* R_{s_1} all of M beyond m cu except a longitudinal vein representing a portion of M_4 and M_3, and except M_4 Cu_1, and M_1 Cu_1 + 1st + 2nd + 3rd A are lost; so that we have only three closed cells left, namely C, M and Cu + Cu_1; the next step is in *Hyptia* (Fig. 86), where only C, Sc + R + M, the stigma, a trace of R and R_{s_1} Cu and M_1 remain. The forewings are also broader than in the other genera, except

Semæodogaster. The climax of the series is reached in *Evaniellus* (Fig. 87), where only C, Sc + R + M and the stigma remain. This genus is at the summit of the family so far as the specialization of its wings is concerned. The posterior wings of all the genera have an almost separated posterior lobe (Figs. 76 and 86); there is never more than R + M present along the costal margin and another vein within, and frequently this latter vein is also lost. It probably is Cu and M_4. The wings are hyaline, with the exceptions of a few exotic species.

In 1887 Cameron first recognized this subfamily including in it *Gasteruption* (*Fœnus*). The date on Cameron's paper is November. Almost simultaneously Cresson recognized the subfamily in his "Synopsis of the Hymenoptera North of Mexico," dated 1887, without statement of the month. The copy before me was received by the Cornell Library, December 28, 1887, so that it is likely that Cameron's paper antedated Cresson's, as the later was probably mailed to Cornell immediately on publication. Kieffer also gives Cameron credit for the subfamily. Schletterer in his monograph recognized the subfamily, and placed *Gasteruption* in Aulacinæ, instead of Evaniinæ, and Ashmead in Smith's "Catalogue of the Insects of New Jersey," 1900, p. 563, recognized it, but as including *Gasteruption*. In his "Classification of the Ichneumonoidea," 1901, Ashmead separated *Gasteruption* from the Evaniinæ, and in this last sense the subfamily was recognized in my paper on "North American Evaniidæ," Tr. Amer. Ent. Soc., 1901, and by Kieffer in the "Genera Insectorum," 1902.

Up to the time of Schletterer's monograph of the family, three genera had been recognized, *Evania*, *Hyptia* and *Brachygaster*. Dr. Schletterer threw these all together into the single genus *Evania*. Recently Kieffer has recognized a new genus, *Zeuxevania*; Szepligeti *Evaniscus*; and Enderlein *Evaniellus*: shortly before Enderlein erected *Evaniellus* I established an *Evaniella*, and here describe three other genera. *Psendevania* is a misprint for *Zeuxevania*.

Evania is of almost world wide distribution, being found in every region except the Australian, in which one species, perhaps accidental, occurs, and three others just over the boarder line from the Oriental. But *Evania appendigaster* is believed to have spread from Europe to all regions, and is everywhere one of the commonest species.

Acanthinevania occurs chiefly in the Australian region, and also five species in the Malayan subregion of the Oriental; two African species possibly belong here. There are about thirty-three species.

Of *Szepligetella* only one species is known, from the Hawaiian Islands.

Evaniscus occurs in the Neotropical regions, where there are three species.

Zeuxevania has two species in the Palearctic, two in the Ethiopian and two in the Oriental.

Evaniella is known certainly only from the United States, Central and South America, but many species at least South and Central American credited to *Evania* probably really belong here. There are five species recognized.

Semæomyia occurs in the Neotropical with seventeen species.

Semæodogaster has but one species, European.

Hyptia has thirty-one species from the Nearctic and Neotropical regions.

Evaniellus has four species from the Neotropical.

As far as is known all the genera are parasitic on the oothecæ of cockroaches.

As showing the distribution of the genera the table on the next page will be of interest. Thirteen species of uncertain generic position are omitted. *Evania appendigaster* is counted only from Europe, which is believed to be its original habitat.

		Evania	Acanthinevania	Szepligetella	Evaniscus	Zeuxevania	Evaniella	Semæomyia	Semæodogaster	Hyptia	Evaniellus
Palearctic	Mantchurian	1	....	....	....	....	....	....	....	....	....
	Mediterranean	4	....	....	....	2	....	....	1	....	....
	European	2[3]	....	....	....	....	....	....	1	....	....
	Siberian	....	....	....	....	....	....	....	....	....	....
	Total	6*	....	....	....	2	....	....	1*	....	....
Nearctic	Boreal	....	....	....	....	....	....	....	....	....	....
	Humid Transition and Austral	1	....	....	....	....	1	....	....	9	....
	Arid Austral	....	....	....	....	....	1	....	....	....	....
	Pacific Coast Transition	....	....	....	....	....	1	....	....	....	....
	Total	1	....	....	....	....	3	....	....	9	....
Neotropical	Antillean	....	....	....	....	....	1	....	....	7	....
	Central American	12	....	....	1	....	....	2	....	5	....
	Brazilian	20	....	....	2	....	1	15	....	8	4
	Argentinian	3	....	....	....	....	....	1	....	3	....
	Total	35[5]	....	....	3	....	2[5]	17*	....	22*	4
Ethiopian	Saharan	1	....	....	....	....	....	....	....	....	....
	West African	3	?2*	....	....	....	....	....	....	....	....
	South African	2	....	....	....	2	....	....	....	....	....
	Mascarene	1	....	....	....	....	....	....	....	....	....
	Total	7	2	....	....	2	....	....	....	....	....
Oriental	Hindostan	2	....	....	....	....	....	....	....	....	....
	Ceylonese	4	....	....	....	....	....	....	....	....	....
	Indo-Chinese	2	....	....	....	....	....	....	....	....	....
	Maylayan	7	7	....	....	2	....	....	....	....	....
	Total	11*	7	....	....	2	....	....	....	....	....
Australian	Papuan	3[2]	7	....	....	....	....	....	....	....	....
	Australian	1	19	....	....	....	....	....	....	....	....
	Polynesian	....	1	....	....	....	....	....	....	....	....
	Novo-Zealanian	....	....	....	....	....	....	....	....	....	....
	Hawaiian	....	....	1	....	....	....	....	....	....	....
	Total	4	24*	1	....	....	....	....	....	....	....
	Total species	63[5]	33	1	3	6	5[5]	17	1	31	4

* Species included in two or more subregions counted only once.

[3] These three species from Lombok, just over the border of the Indo-Malayan, in which they may be looked upon as belonging.

TABLE TO THE GENERA OF NORTH AMERICAN EVANIINÆ.

1. Abdomen of the female distinctly triangular, the apex produced into a short process from which issues the ovipositor (Fig. 18); abdomen of the male more or less narrowly oval; antennæ inserted in a single distinctly impressed basin, bordered at least on the lower side by a ridge; usually an inter-antennal carina present; metanotum as seen from the side more or less deeply depressed, sides of the depression abrupt (Fig. 62), (Tribe EVANIIINI) ..... (2).

Abdomen of the female nearly circular (rarely somewhat triangular), the apex not produced into a process (or rarely slightly produced in *Evaniella*), abdomen of the male the same shape as in the female (sometimes oval in *Evaniella*); antennæ not inserted in a distinctly impressed basin, without any carina below them, rarely between them; metanotum as seen from the side less deeply depressed, the sides of the depression sloping gradually (Fig. 63), (Tribe HYPTIINI) ..... (3).

2. Front wings with the maximum number of veins found in the subfamily, except parts of R_4, M_{1+2}, M_1, M_2, and m may be more or less atrophied; labium modified into a highly chitinized pear-shaped plate which nearly covers and conceals the ligula (Figs. 28–29).
Evania Fabricius.

3. Wings with seven completely closed cells (Fig. 83), hind legs long, exceeding the whole length of the insect ..... **Evaniella** Bradley.

Wings with only the costal cell completely closed (Fig. 86); hind legs much shorter and stouter than in any other genus of the subfamily, not exceeding the total length of the body (Fig. 61) ..... **Hyptia** Illiger.

EVANIA Fabricius.

Ichneumon, *Sphex*, etc., auct.

1775. *Evania* Fabricius, Syst. Ent., p. 345.

Type—*Evania appendigaster* Linnaeus.

The scape of the antennæ of the female is much longer than in the male. The proportions in actual measurements of the antennal joints are surprisingly constant in the North American species. The labium is highly chitinized and broadly oval, dilated at the base, almost concealing the short ligula (Figs. 28 and 29). The labial palpi have the third joint greatly dilated and triangular. The forehead has an impressed basin in which the antennæ are inserted, bordered by a distinct rim below; there is usually a short inter-antennal carina, and may be a mesal and two lateral carinæ on the clypeus. The sculpture of the face and mesonotum is of prime importance; in one of our North American species the face is closely striate, in the other with a very few small scattered punctures.

The mesopleuræ do not show a distinctly smooth and polished

area. The groove for the reception of the middle femora is not very deep. The sides of the propodeum are not peculiarly sculptured, as in *Hyptia*. The metanotum is sunk deeply between abrupt walls formed by the scutellum and propodeum (Fig. 62). The furcula forming the posterior border of the mesaventer is of great importance and may be with parallel or divergent lobes or tynes (Figs. 64 and 65).

The abdomen of the female is the shape of an isosceles triangle, the pygidium being produced into a projection which contains the ovipositor (Fig. 18). In the male the abdomen is oval.

The posterior legs are long (Fig. 60), and always without spines. The proportion of the longer tibial spur to the metatarsus is of importance, as also that of the metatarsus to joints two to four together. The shape of the tooth on the tarsal claw and its size and angle are of importance (Figs. 44 and 45).

The wings are as shown in Figs. 76 and 77.

The genus is the most generalized of the subfamily. It is distributed throughout the world, except in the Australian region, where one, perhaps accidental, species is found, and three others just over the border in the Island of Lombok. But *Evania appendigaster*, believed to be originally European, has been introduced into every country.

TABLE TO THE NORTH AMERICAN SPECIES OF EVANIA.

1. Face with only a few small punctures; tarsal claws with two rays placed so as to form an acute angle, the inner one shorter (Fig. 44); antennæ inserted close together in a broad shallow basin, with an abrupt but scarcely ridged front margin ..... **appendigaster** Linnaeus.

   Face coarsely longitudinally striate; tarsal claw bearing a tooth within nearly at right angles to the outer ray (Fig. 45); antennæ situated rather far apart in a deep and well-marked basin, the anterior and lateral margins of which are limited by a distinct carina, with a sharp angle in the centre below the antennæ ..... **urbana** n. sp.

Evania appendigaster Linnaeus.

(Figs. 13, 17, 18, 27, 28, 29, 44, 56, 60, 62, 76.)

1742. *Ichneumon* Reamur, Mem. Hist. Ins., T. vi, p. 332, tab. xxxi, fig. 13.
1758. *Ichneumon appendigaster* Linnaeus, Syst. Natur., ed. 10, p. 566.
1767. *Sphex appendigaster* Linnaeus, Syst. Natur., ed. 12, p. 943.
1775. *Evania appendigaster* Fabricius, Syst. Ent., p. 345.
1780. *Ichneumon niger* Göze, DeGeer, Abhand. Gesch. Insect., iii, p. 385, pl. 30, figs. 14 and 15.
1791. *Evania lævigata* Olivier, Encyc. Mèth. Insect., vi, p. 453.
1791. *Evania maculata* Olivier, Encyc. Mèth. Insect., vi, p. 453.
1807. *Evania fuscipes* Illiger, Rossi, Faun. Etrusca., ed. 2, p. 83, No. 798, ii.

1824. *Evania unicolor* Say, Keat. Narrat. Exped., ii. App. p. 320.
1829. *Evania flavicornis* Curtis, Brit. Entom., vi. p. 257.
1830. *Evania cubæ* Eichwald, Zool. Spec., ii, p. 214.
1840. *Evania desjardinsii* Blanchard, Hist. Anat. Insect., iii, p. 299, fig. 74.
1841. *Evania affinis* Guillou, Ann. Soc. Ent. France, x, p. 311.

♂, ♀.—Entirely black. Covered with a very fine and inconspicuous griseous pubescence. Face convex below the antennæ, smooth, a few punctulations scattered at considerable and irregular distances; antennæ inserted close together in a broad but shallow basin, with an abrupt but scarcely ridged front margin, extending laterally almost to the eyes and posteriorly without definite limit to in front of the ocelli; vertex narrow; middle ocellus transverse; temples narrow above, wider towards the base of the eyes; eyes removed by more than half their length from the mandibles; antennæ long, filiform, somewhat thickened in the female (Fig. 56); average measurements as below:

	Scape	Ped.	3	4	5	6	7	8	9	10	11	12	13	Flag.	Total
♂ mm.	1.06	.17	.71	.66	.62	.60	.54	.50	.45	.43	.39	.40	.52	5.81	7.04
♀ mm.	1.42	.18	.76	.58	.49	.46	.38	.37	.34	.33	.30	.26	.36	4.64	6.23

Thorax above with a few round pits scattered sparingly over it, larger and better defined than those similarly scattered over the face; parapsidal grooves clearly defined; anterior grooves short; venter and sides of the thorax with larger and more deeply impressed round pits, distant from each other, but growing denser posteriorly until on the propodeum they merge into coarse reticulation; metanotum sunk in a deep and narrow transverse groove; furcula with divergent tynes.

Middle coxæ widely separated; posterior coxæ subapproximate, sparingly, finely, punctured; posterior tibia with the longer spur about one-third the length of the metatarsus (Fig. 60); the latter about the length of the succeeding two joints united; claws large, two-thirds as long as the fourth tarsal joint, toothed, the rays slender, placed at acute angles with each other, the apical one much the longer (Fig. 44). Wings hyaline (Fig. 76), the free part of R_4 wanting, sometimes a faint line indicating its position; R_3 obtusely angled beyond R_4; the base of M_{1+2} usually more or less atrophied; hind wings without an open costal margin.

Abdomen of the male oval, two-thirds as broad as long; the petiole nearly as long as the remaining part; the second segment but little larger than the first of the four succeeding fully exposed segments which diminish in breadth towards the apex; abdomen of the female an isosceles, almost equilateral triangle with the apex caudad and the dorsal hypothenuse somewhat convex (Fig. 18); the petiole less than half the length of the dorsal hypothenuse; the second segment but little broader than the first of the three following fully exposed segments; the apical segment produced into a short dorso-caudad projecting process concealing the ovipositor.

* The reference given in Schletterer and Dalla Torre to *E. flavicornis* Oliv., Encyc. Méth. Insect., vi, p. 453, is not to be found, and should evidently be *maculata*.

Hab.—Distributed throughout the world, and almost everywhere the most abundant species. It is believed to have originally inhabited Europe from whence it has become naturalized in almost all countries along with the Blattidæ on which it is parasitic. In the United States it seems chiefly confined to the east, and is especially common in some of the larger cities. Say's *unicolor* was from the Rocky Mountains, but we have no other records from that far west. It has never been taken here at Ithaca, nor have I seen specimens from north or west of here.

Evania urbana n. sp.

(Figs. 45, 66, 77.)

♂, ♀.—Black. Sericeous pubescent, especially the face and propodeum, shining silvery in certain lights. Face subconvex below the antennæ, which are situated rather far apart in a deep and very well defined basin, the anterior and lateral margins of which are limited by a distinct ridge which starts from a central point on the face below the antennæ, running on each side outward and upward, to a short distance from the eyes, where it turns inward again, becoming lost before reaching the ocelli; another carina extends longitudinally between the antennæ traversing the whole length of the basin; as thus defined, the basin is narrower than in *E. appendigaster;* from somewhat within the lower angles of the eyes a groove extends on each side to the inner angles of the mandibles, which, together with the carinæ above described, enclose a shield-shaped area embracing the entire face, which is subcoarsely and regularly longitudinally striate, the striæ converging somewhat towards the apex (clypeus), which appears as a very small triangular smooth and polished piece; the temples are roughly substriate, below the eyes the cheeks are striate similarly to the face, the striæ converging towards the face and mandibles; the vertex is covered with large punctures; the ocelli placed close together, the central ones much smaller than the other two, between the central and each lateral ocellus is a small smooth prominence partly surrounding each ocellus, part of which it at first appears to be; eyes small, prominent, removed by a little less than their length from the mandibles; temples narrow, wider at the base of the eyes; antennæ filiform, somewhat thickened in the female; average measurements as below:

		Scape	Ped.	3	4	5	6	7	8	9	10	11	12	13	Flag.	Total
♂	mm.	.72	.12	.78	.78	.74	.70	.61	.61	.56	.53	.50	.50	.50	6.81	7.65
♀	mm.	1.63	.22	.83	.83	.59	.50	.40	.38	...	.....	.....	.....	.....	.....	.....

Thorax above like the vertex, roughly and rather irregularly covered with coarse punctures; the sides, venter, propodeum and posterior coxæ punctate to shallowly reticulate; anterior grooves not evident, lateral and parapsidal grooves very short and barely discernable; metanotum not very deeply sunk, comparatively broad, forming a transverse rather squarely cut trough; furcula with divergent tynes (Fig. 66).

Middle coxæ rather close together; posterior coxæ subapproximate; the longer spur of the posterior tibiæ less than one-third the length of the metatarsus; the latter longer than the rest of the tarsus together; claws large, about two-thirds as long as the fourth tarsal joint, toothed, the rays rather stout, nearly at right angles, the outer one slightly larger (Fig. 45, there is some variation in the size of the inner tooth in the paratypes, but the angle seems constant). Wings hyaline, or slightly clouded in the apical third; the veins dark in the basal part, becoming pale beyond the stigma; R_3 obtusely curved beyond R_4; free part of R_4 wanting; free part of M_1 and M_{1+2} pale, their base wanting (Fig. 77); hind wings with an open costal margin.

Abdomen of the male long, narrow, oblong or oval, almost linear; petiole more than one-third its length, striate; the segments smooth, polished, second to seventh inclusive exposed. Abdomen of the female subtriangular, with the apical angle angle slightly produced into a short process containing the ovipositor; petiole one-half the length of the abdomen, longitudinally striate; the segments smooth, polished; the second almost twice as broad as the third; the second, third, fourth and fifth segments fully exposed, the latter broadly emarginate dorsally, exposing a part of the sixth and seventh segments, which form the process already described; edges of the last two segments and apex of the ovipositor finely ciliate. Length 7 mm.

This pretty silvery shining species is very different in appearance and characters from *E. appendigaster*, or any others that I know. The most obvious characters are the striation of the face and the narrow abdomen of the males, but there are many other important differences. In all I have seen over eight males and seven females.

Five of the males were collected by Mr. Witmer Stone on the windows of his house in Philadelphia. As all the other specimens have also been taken in large cities, I have applied to it the name *urbana*. Mr. Liebeck sends me five more specimens taken on the windows of a house in Philadelphia. It is of course possible that it may represent another exotic species, migrating similarly to *E. appendigaster*. The front legs and antennæ are sometimes more or less pale.

Hab.—Philadelphia, Pa., August 5th (Mr. Stone); Washington, D. C., July 26, 1900; New York and Brooklyn, N. Y. (Messrs. Daecke, Brues and Franck).

Types.—Type ♂ in the collection of the American Entomological Society. Type ♀ in the author's collection. Three paratypes (♂) in the collection of the American Entomological Society. Two paratypes (♂) in the collection of U. S. Nat. Mus. Paratypes in the Amer. Mus. Nat. Hist.

EVANIELLA Bradley.

Evania Auctores, ad partem.

1905. *Evaniella* Bradley, Can. Ent., February, xxxvii. p. 63.

Type.—*Evania unicolor* Ash. [nec Say]=*Evaniella semæoda* n. sp.

The labium (Fig. 35) is narrowly oval, not concealing the ligula; the third joint of the labial palpi is ovoid, not triangular, longer than broad; the eyes are in *E. californica* (Fig. 9) extremely small, so that they do not reach much below the base of the antennæ, normally they are longer (Fig. 16); the antennæ are filiform, situated on a convexity of the forehead, or if in a slight concavity there is at least no distinct rim below.

The metapleuræ have at most a polished spot on the upper corner, often none at all; the sides of the propodeum are not peculiarly sculptured; the furcula is usually with more or less divergent short tynes, often obscured by vestiture.

The posterior legs are long, and without spines.

The wings in all species known to me are hyaline; and the veins R_4, M beyond m-cu, M_{1+2}, M_1, M_2 and m are wanting, or present only as a trace (Fig. 83).

The shape of the abdomen is more or less intermediate between Evaniini and Hyptiini. The abdomen of the female is quite or nearly round, never distinctly triangular, but in one specimen is nearly so; there is sometimes a slight production of the pygidium into a point containing the ovipositor. The abdomen of the male varies from round to narrowly oval (*E. neomexicana*).

So far there are only five species of the genus known, three from North America, one from Cuba and one from British Guiana. But it is probable that many, at least of the South and Central American, Evaniæ really belong here.

TABLE TO THE NORTH AMERICAN SPECIES OF EVANIELLA.

1. Eyes very small, scarcely reaching below the insertion of the antennæ (Fig. 9); head, face and dorsum polished and almost impunctate.
californica Ashmead.

Eyes large, reaching far below the insertion of the antennæ (Fig. 16); head, face and dorsum more or less punctured.....(3).

2. Head small, narrower than the thorax; head, face and dorsum finely punctured; inner tooth of the tarsal claw much shorter than the outer.
neomexicana Ashmead.

Head large, broader than the thorax; head, face in part, and dorsum coarsely punctured; rays of the tarsal claws nearly equal (Fig. 49).
semæoda n. sp.

Evaniella californica Ashmead.

(Fig. 9.)

1901. *Evania californica* Ashmead, Can. Ent., xxxiii, p. 302.
1905. *Evaniella californica* Bradley, Can. Ent., xxxvii, p. 64.

♀.—Brown, impubescent. Head large, broader than the thorax; face smooth, shining, with only a few irregular and scarcely impressed punctulations; a deeply impressed line extending on each side between the antennæ downward and outward in an irregular curve to the mandibles, forming a very narrow strongly mucronate clypeus; mandibles broad; antennæ inserted close together, far distant from the eyes, which are very small, oval, and placed their full length from the mandibles (Fig. 9), their base barely extending below the insertion of the antennæ; cheeks very broad, polished.

Dorsum smooth, polished, minutely sparingly punctulate; propodeum in front of the insertion of the petiole similarly sculptured, rest of the propodeum and pleuræ pitted or reticulate; metanotum situated in a transverse broad and shallow groove. Posterior coxæ smooth; metatarsus somewhat longer than the three following joints united; the claws with a single distinct ray, the inner ray being reduced to a very small tooth. Wings short, only reaching the tip of the abdomen, hyaline; veins brown; R_3 obtusely curved; R_4 wanting; M_{1-2}, M_1, m, and M_2 indistinct.

Petiole short, smooth, about one-fourth the length of the abdomen; the latter subovoid; segments 2–7 exposed, segment 2 a little wider than 3.

Hab.—California (Natoma, March 3, 1885).

Type.—Collection of the U. S. Nat. Mus., 6081 (one male).

Evaniella neomexicana Ashmead.

(Fig. 83.)

1901. *Evania neomexicana* Ashmead, Can. Ent., xxxiii, p. 302.
1905. *Evaniella neomexicana* Bradley, l. c., p. 302.

♂.—Black, the lower parts of the metapleuræ and the propodeum below the petiole red. Finely puberulent. Head small, narrower than the thorax; face shallowly, closely punctulate, the punctures somewhat confluent; antennæ approximate, inserted on a convexity of the front; a groove extending from without the antennæ downward and slightly inward to either side of the clypeus; vertex rounded, closely punctulate, not confluent; cheeks and temples very narrow and almost linear, smooth and polished, with a few scattered punctures; eyes large, oval, removed by one-third their length from the mandibles.

Dorsum with distant large round punctures; pleuræ similarly and venter more sparingly punctured; upper angles of mesopleuræ smooth, polished, impunctured; propodeum coarsely reticulate; metanotum comparatively broad in a shallow transverse, curved groove. Posterior coxæ approximate, prongs of the furcula subdivergent, the larger tibial spur more than half the length of the metatarsus, the latter nearly as long as the three following joints united; last joint nearly as long as the third; claws two-thirds as large as the fourth tarsal joint, slender; rays at acute angles, the inner (basal) ray much the shorter. Wings long, extending considerably beyond the tip of the abdomen, hyaline; the stigma dark, many of the veins more or less faint; M_{1-2}, M_1, m and the longitudinal part of M_2 visible as mere traces; R_3 obtusely angled.

Abdomen long and narrow; the petiole punctulate, two-thirds the length of the abdomen. Segments 2–7 fully exposed, the second but little wider than the third.

Hab.—New Mexico, Las Cruces, Sept. 9th (T. D. A. Cockerell).
Types.—U. S. Nat. Mus., No. 6080 (2 males).

Evaniella semæoda n. sp.
(Figs. 11, 16, 35 and 49.)

1887. ? *Hyptia dorsalis* Cresson, Cat. Hym. N. A.,1887, p. 182.
1901. *Evania unicolor* Ashmead, ad partem, Can. Ent., xxxiii, p. 304, nec Say.

♂, ♀.—Black, the thorax, petiole, scape and face sometimes more or less red. Finely pubescent. Face sparingly punctured, edge of the clypeus smooth, acute; antennæ inserted close together on a convexity of the face, more than the length of their first two joints from the ocelli; front above the antennæ coarsely, vertex very coarsely punctured; ocelli large, distant; cheeks narrow, almost as wide at the apex as at the base of the eyes; eyes large, oval, removed by about one-fourth their length from the mandibles.

Thorax coarsely and thickly punctured; punctures smaller on the sides and venter; propodeum reticulate, a polished spot on the pleuræ; parapsidal grooves wanting; metanotum not very narrow, in a slight transverse impression. Middle coxæ moderately distant, posterior ones approximate; the prongs of the furcula parallel; the posterior coxæ coarsely punctured; the longer tibial spur little less than one-half as long as the metatarsus; the latter about as long as the following three joints united; claws small, about two-thirds the length of the fourth tarsal joint, bifid; the rays about equal, at acute angles, the outer (apical) ray sometimes much less stout than the other (Fig. 49). Wings hyaline, veins R_4, M_{1+2}, M_1, M_2 and m wanting, their position indicated by a faint trace; R_3 obtusely angled.

In the male the petiole is smooth; about two-thirds the length of the broadly oval, nearly orbicular, polished abdomen; segments 2–6 inclusive fully exposed; the third about two-thirds the width of the second. In the female the slightly pitted petiole is about one-half the length of the nearly orbicular, obliquely truncate, polished abdomen; segments 2–5 inclusive fully exposed, the second making up about one-third of the exposed area, almost three times as wide as the third segment.

The color of this species is very variable. It is barely possible that two species may be included, the one of northern distribution and black in color, the other southern and with more red. The color, however, intergrades, and I can find absolutely no structural difference that will separate them. I have in all before me eight specimens, all from the United States National Museum collection. Four specimens are black entirely, except with forelegs testaceous beyond the trochanters, and two of them have some reddish on the dorsum. One specimen is mixed with reddish-brown all over the thorax and legs, and the base of the antennæ, and the apex of the

petiole white; another has the first five joints of the antennæ and the front and middle legs brown, the trochanters and apex of petiole white, and the upper part of the thorax red; another the scape, lower part of the face, and upper part of thorax red, and the front legs brownish; two others have the upper part of the thorax red, and the apex of the petiole white.

In the "Canadian Entomologist," vol. xxxiii, p. 304, Dr. Ashmead states that he has recently recognized *Evania unicolor* Say as distinct from *appendigaster*, differing in punctuation. From the labels on his specimens it is evident that he refers to the northern or black form of this species, *semiwoda*, which differs very markedly from *appendigaster*, but very certainly belongs here and not to *Evania*. In the "Canadian Entomologist," vol. xxxvii, p. 64, I state in speaking of *Evaniella*, "Here also belongs and stands as type the species which Dr. Ashmead calls *unicolor* Say, but is not that species. Say's description applies to *E. appendigaster*, which could easily have spread into the interior with the early settlers, inasmuch as it is parasitic on cockroaches."

After receiving a letter from Dr. Ashmead assuring me of his conviction as to the correctness of his determination, I looked over the matter again and came to the conclusion that he was right, and so wrote to him. Inasmuch as there was doubt concerning the identification, and since the type was destroyed, it seemed to me right to follow his determination. But recently it has seemed to be so impossible to identify the specimens in question with Say's description, that I have decided to follow my former course and describe it as new, leaving Say's *unicolor* as a synonym of *appendigaster*, or as a species which has not since been collected and which may yet come to light. I follow this course with great regret, not only because I do not wish to add unneccessarily to nomenclature, but because could I conscientiously do so, I should prefer to follow the judgment of an entomologist as experienced as is Dr. Ashmead.

Say's description of *unicolor* is as follows, the italics are my own:

"Entirely black, immaculate, slightly sericeous. Inhabits the United States. Antennæ as long as the body; palpi piceous; *thorax with very few small punctures;* metathorax [propodeum] densely punctured; wings hyaline, nervures fuscous; *a distinct nervure passes from the dividing nervure of the cubital and discoidal cellules to the posterior margin of the wing;* abdomen much compressed; impunctured, polished oval, rather longer than the petiole; posterior feet elongated. Length more than three-tenths of an inch.

"The proportions of the petiole, abdomen and posterior feet of this insect are nearly the same with those of *appendigastor* Fabr. I obtained a specimen near the Rocky Mountains, and it is also found in Pennsylvania. The additional nervure is sometimes connected with the radial cellule by a faint, transverse nervure, so as to form a second cubital cellule."

In *semæoda* the thorax is coarsely and thickly punctured; in *appendigaster* it has very few small punctures. In *semæoda* the mesopleuræ have the upper half smooth, a character that would not likely have been overlooked by Say; in *appendigaster* the upper part of the mesopleuræ is only slightly less punctured than the lower part. It is characteristic of *semæoda* as well as other species of *Evaniella* that the "nervure passing from the dividing nervure of the cubital and discoidal cellules to the posterior margin of the wing" (M_{1+2} and M_1) as well as the "faint transverse nervure" connecting it with the radial cellule (R_1), "so as to form a second cubital cellule," and also m-cu and M are always and invariably atrophied (Fig. 83). In *appendigaster* and other species of *Evania* these veins are present, just as described in the description of *unicolor*, but in occasional specimens of *appendigaster* only, so far as I have observed, is R_4 present, and then always partly atrophied, so as to appear, as Say says, as a "faint transverse nervure." The proportions of the posterior feet of *semæoda* are not the same as in *appendigaster*. In *semæoda* the metatarsus is about as long as joints 2 + 3 + 4 together, in *appendigaster* only as joints 2 + 3. The joint bearing the claws is much longer in *appendigaster* than in *semæoda*.

Inasmuch as *appendigaster* was a European species, it is highly probable that Say would not have identified his specimens with it even if they agreed. He points out no difference between *unicolor* and *appendigaster*, and we have no evidence that he knew *appendigaster* from anything except description. On the other hand it is possible that *unicolor* may represent a native American species which is at present unknown to us. I have seen no specimen of *appendigaster* or *semæoda* from west of Georgia and Ohio, whereas Say described *unicolor* from the Rocky Mountains.

The red form of *semæoda* has been in collections as *Evania dorsalis* Westwood.

Hab.—Massachusetts (Woods Holl, C. T. Brues); New Jersey

(Brown's Mill Junction, June 25, 1905, E. Daecke; Jamesburg): Georgia (Tifton); Florida (Crescent City).

Type.—In the author's collection. Paratypes in the U. S. N. M.

HYPTIA Illiger.

Evania Fabricius, et al.

1807. *Hyptia* Illiger, Rossi, Fauna Etrusca, ii, p. 82.

1841. *Hyptiam* Shuckard, Entom., i, p. 120.

1889. *Evania* Schletterer, Ann. d. k. k. nath. Hofm., Wien, iv, p. 118.

Type.—Evania petiolata Fabricius.

The color is usually black, but may be more or less red or yellow; the anterior and often middle legs are sometimes pale or brown, but the color is variable within the species. Clothed with a white or yellowish sparse pubescence, sometimes becoming so thick on the metaventer and coxæ as to conceal the punctation. The head seen from above is transverse to transverse-quadrate, the anterior margin between the eyes appearing from such a view more or less convex, sometimes with a mesal emargination in which are placed the antennæ (Fig. 12). In profile the head varies from narrow to broad, usually widest at or below the antennæ, either flat or more or less pointed above the eyes; the latter are somewhat oblique, and the malar space is generally about one-half as long as the eyes; the mandibles are short, and have a blunt tooth within; the clypeus is pointed in the middle, sometimes set off laterally by a short indistinct groove; from the upper margin of the base of the mandibles a carina is usually present running to the base of the eye, and then upward parallel to and slightly separated from the inner margin of the eye, to varying height, separating the face from the cheeks; the clypeus and face are usually somewhat prominent or gibbous; the forehead is flat or convex, and the antennæ are not inserted in a basin, nor are there any carinæ between or around them; they are 13-jointed and are either filiform, gradually and evenly thickened (Fig. 57), or short and strongly thickened beyond the base of the flagellum (Fig. 58); these characters and the proportions of the scape to joints three and four together, and of the pedicel to joint three, I have found of specific value, although these distinctions are doubtless to a certain extent only sexual. The labium (Figs. 37 and 38) consists of a large, highly chitinized, broad, pear-shaped piece, beneath which the ligula is concealed and the palpi originate; the labial palpi are 3-jointed, the terminal joint broadened, but not

as much as the third joint; the palpiger distinct. The head behind the eyes and vertex is more or less narrowed, a carina of varying distinctness separating it from the gular regions.

The neck is short. The pronotum (Fig. 19) consists of a transverse vertical piece, constricted in the middle and usually smooth and polished; the lower edge is more or less produced forward into a short transverse collar; the humeral angles (Fig. 19) are prominent or rounded; the upper edge is emarginate in the centre, the mesonotum fitting into the emargination; the propleuræ and venter are not distinct, but small and concealed beneath the head, as is always the case in the subfamily (Fig. 19). The mesonotum and scutellum form together a more or less convex area, and are separated from each other by a transverse straight suture that is often not plain; the anterior and lateral grooves are absent, the parapsidal grooves are not present in any species in our fauna, or at least not more than a trace of them anteriorly; in West Indian and other exotic species they are distinct, but when so are usually placed a little nearer the middle than in *Evania;* the mesopleuræ have a highly polished impunctate or minutely punctulate area occupying more or less of their upper surface (Figs. 1, 6 and 7); this area is generally broken above by a circular pitted area, and has usually some irregular pits in the middle; its shape and extent, and the depth and shape of a large oblique fossa or depression traversing the forward part of it, and forming a receptacle for the femora are characters of specific importance; anterior to the depression the pleuræ are swollen into an oblique broadly rounded ridge, the punctation of which is usually sparser than on the dorsum, but similar to the venter, from which it is not separated. This area I have spoken of as the anterior swelling of the mesopleuræ. The metanotum (Fig. 63) is a very narrow transverse strip, depressed between the scutellum and propodeum, the edges of which form gradually sloping walls for it (Fig. 63). On the metapleuræ there is anteriorly a very narrow punctured area, interrupted mesally, behind which there is an oblique well marked carina, parallel to and behind this carinæ is a broad fossa of varying depth, and the nature of the reticulations in this fossa and on the propodeum just behind it is of great specific importance (Pl. V); these may be long and narrow with few or no cross bars, or nearly square, and there may be from one to three rows; one or two oblique carinæ may be present, one

on the anterior edge of the region; the other near the posterior edge; behind this area of modified reticulations the entire propodeum is hexagonally reticulate, except above the petiole, where it is punctured or otherwise sculptured.

The hind legs are much shorter than in the other genera (Fig. 61), about equalling the whole length of the insect; the coxæ have an oblique groove without, much deeper than in *Evania*. The tibiæ and sometimes the tarsi have among the pubescence rows of fine yellow spines; these are usually difficult to detect, and I have never seen any in which they are prominent, as they are in *Acanthinevania*, in which they are black and very much more abundant. *H. amazonica* Schletterer is said to have the spines distinct. The tibia is thickened a little toward the apex; the longer of the two apical spurs varies in the different species from less to more than one-half the length of the metatarsus; the latter is longer than joints 2–4 taken together, and upon how much longer depend some specific distinctions; the tarsal claw is of moderate or small size, with a single tooth within (Fig. 54), shorter than the apical ray, and at a little less than a right angle to it; the size and angle of the tooth does not seem to differ in the genus, and hence offers no character for specific distinctions.

The wings are hyaline, sometimes with a milky lustre, and there are present in the front wing (Fig. 86) only veins C, Sc + R + M, the stigma, Cu, Cu_1, and M_4; where the two latter join a short cross-piece indicates the original position of the base of m cu and Cu_1 + M_4. Faint lines indicate the original position of some of the now atrophied veins, arranged as in *Evania*. The hind wings have only part of the vein R + M present.

The sculpture of the petiole is a matter of prime importance; there is usually a tendency toward oblique ridging, at least along the lower part of the sides, but above it may be nearly smooth with only a few punctures, or may be finely longitudinally striate; the length of the petiole is usually about equal to that of the abdomen, or sometimes less. The abdomen is orbicular, alike in the two sexes, black, smooth and polished; the second segment extends about two-thirds its entire length, the third segment is also broad, and the remaining segments are very narrowly, when at all, exposed. The ovipositor is not exserted, nor are the claspers of the male evident, so that it is usually impossible to determine the sex without dissec-

tion. For this reason I have been frequently obliged to omit statement of the sex in the descriptions that follow. Judging from the other genera it may be inferred that those with more filiform antennæ and shorter scape are males. Some of the published descriptions have certainly erroneously stated the sex.

The largest species that I know is about the size of *Evania appendigaster*, the smallest measures 2.5 mm. *Hyptia* is the most specialized genus of Evaniinæ, except *Evaniellus*, as is evident primarily from the wings, where the climax of atrophy is reached, almost all the veins having disappeared. The mouth-parts and thoracic structures show further specialization along the lines followed by *Evania*, and I think it not improbable that even the shortness of the hind legs indicates greater specialization, although in the opposite direction, than the extreme length of the same in the other genera. Further I believe the genus to be one that is undergoing active modification today, judging from the fact than in our North American species, which I have studied very carefully, it is difficult to find any two specimens which do not differ more or less in one or more characters, although perhaps to an extent that would not be noticeable to one not very familiar with the group.

Hyptia is confined to the Americas, and reaches its highest development in the tropics, where future collection may be expected to yield a very large number of new species.

TABLE TO THE NORTH AMERICAN SPECIES OF HYPTIA.

1. Flagellum distinctly thickened beyond the middle, tapering again toward the apex, giving the antennæ a distinctly clavate appearance, the joints in the thickened portion often scarcely longer than broad (Fig. 58)..(2).
   Flagellum filiform or slightly and evenly thickened, the joints distinctly longer than broad (Fig. 57).....(4).
2. Petiole more or less distinctly punctured, slightly or not at all striate ....(3).
   Petiole finely and very distinctly sublongitudinally striate.
   harpyoides n. sp. (♀).
3. Sides of the propodeum sculptured as in Fig. 8; species black.
   mylacridomanes n. sp.
   Sides of the propodeum sculptured as in Fig. 6; species usually more or less red ....**thoracica** Blanchard (♀).
4. Scape one-quarter or less longer than segments 3 + 4.....(5).
   Scape distinctly more than one-half longer than segments 3 + 4; petiole thickly set all over with coarse punctures, between which are interrupted striæ..... **reticulata** Say (♀).
5. Punctures evenly placed on the vertex and mesonotum, about their diameter's length apart. Length 2.8 mm.....**floridana** Ashmead.
   Punctures much rougher, more closely placed. Length 6 mm. or more ...(6).

6. Sides of the propodeum with long parallel bars and narrow interstices (Figs. 2 and 3).....(11).
   Sides of the propodeum not so sculptured.....(7).
7. Sides of the propodeum with a distinct second oblique carina, between which and the first the area is depressed and the interstices lengthened, the bars parallel and often weak (Figs. 1, 4 and 7); petiole on the side with numerous deep punctures, wrinkles indistinct or none.....(9).
   Interstices on the sides of the propodeum broken up into three rows of squares (Figs. 5 and 6).....(8).
8. Scape between one-fifth and one-quarter longer than segments 3 + 4; petiole coarsely obliquely wrinkled, less distinctly above; interstices on the side of the propodeum rectangular, in three rows (Fig. 5). Black. **texana** n. sp.
   Scape less than one-fifth longer than segments 3 + 4; petiole with few irregular shallow punctures; anterior swelling of the mesopleuræ closely and coarsely punctured; color usually more or less red. **thoracica** Blanchard (♂).
9. Anterior swelling of the mesopleuræ smooth, with only a very few minute punctulations; face coarsely and roughly sculptured; the punctures on the forehead leaving between them flat polished rims; petiole punctured, without wrinkles on the sides.....(10).
   Anterior swelling of the mesopleuræ with a number of coarse punctures; face roughly but much more finely and brokenly sculptured; punctures on the forehead so close as to leave only a narrow convex opaque ridge between them; propodeum as in Fig. 7; petiole thickly set all over with coarse punctures, a few striæ toward the sides, and very fine striæ between the punctures. Black.....**reticulata** Say (♂).
10. Black; tibial spur less than one-half as long as the metatarsus; sides of the propodeum sculptured as in Fig. 4.....**nyctoides** n. sp.
    More or less red; tibial spur over three-fifths as long as the metatarsus; propodeum sculptured as in Fig. 1.....**prosetethetra** n. sp.
11. Petiole roughly obliquely to longitudinally striate above and below, punctures, often coarse, among the very fine striæ; color entirely black (Fig. 3).....**harpyoides** n. sp. (♂).
    Petiole nearly smooth, with a few small punctures and short striæ on the sides below; color more or less red (Fig. 2)...**hyptiogastris** n. sp.

Hyptia harpyoides n. sp.

(Figs. 3, 12, 54, 57, 58 and 61).

1887 ? *Hyptia reticulata* Cresson, ad partem, List Hym. N. A., p. 182.

♂, ♀.—Brown; anterior legs and middle tarsi lighter, subtestaceous. Head and body clothed with yellowish hairs, especially thick on the venter and posterior coxæ, almost obscuring the furcula and sculpture of that region. Head seen from above (Fig. 12) transverse, nearly quadrate, strongly convex in front between the eyes; space behind the eyes rather small; posterior angles rounded; posterior margin truncate, reflexed. Profile rather broad, rounded above; forehead slightly convex; eye very slightly oblique; temples widened below; malar space (.43 mm.) two-third as long as the eyes (.63 mm.); cheeks incurved below, so that the base of the mandibles is scarcely visible from the side. Face from

in front a little longer than in *reticulata*, somewhat truncate below, the eyes slightly prominent; no antennal basin; mandibles deeply punctured at their base; palpi pale; clypeus not separated laterally by a groove, the cheeks separated from the face by a poorly defined carina extending from the upper angle of the base of the mandibles outward and upward to the base of the eyes, then along the inner margin of the eyes to their summit; the middle of the face with the clypeus forming a slightly gibbous area without distinct boundary; face, forehead, vertex, temples and cheeks rather more closely and coarsely punctured than in *reticulata*, appearing rather deeply reticulate than punctate; the punctures not confluent; forming rows on the temples; posterior margin of the head subcarinate; no carina between the antennæ; posterior ocelli .31 mm. apart, .19 mm. from the compound eyes; slightly behind the apex of the latter; these small, .63 mm. long, narrowly oval, somewhat pointed below, their inner margins parallel; the face wide; antennæ placed .10 mm. apart, .29 mm. from the compound eyes, below the middle of the latter; in the female (Fig. 58) much shorter and thicker than in *reticulata*, .24 mm. thick at the thickest part, which is beyond the middle; scape one-fourth as long as the flagellum; two-thirds longer than joints three and four together; pedicel equalling the first joint of the flagellum in length; antennæ of the male (Fig. 57) of equal thickness throughout; the scape one-seventh as long as the flagellum, a little shorter than joints three and four together; pedicel as long as the first joint of the flagellum.

		Scape	Ped.	3	4	5	6	7	8	9	10	11	12	13	Flag.	Total
♂	mm.	.41	.19	.20	.24	.24	.25	.24	.24	.26	.26	.26	.24	.43	2.88	3.48
♀	mm.	.60	.19	.19	.17	.17	.19	.19	.19	.24	.24	.19	.19	.38	2.35	3.14

Body short, about one-quarter narrower in proportion to its length than in *reticulata*; length 2.5 mm.; width 1.3 mm.; height 1.9 mm. Pronotum not forming a visible collar, humeral angles very short, the front of the dorsum appearing squarely truncate; mesonotum and scutellum convex, without any sign of lateral, anterior or parapsidal grooves; the whole back appearing as though without sutures; mesonotum and scutellum punctured similarly to the head; vertical part of the pronotum apparently roughened; its postero-lateral angles also roughened; the upper posterior part of the mesopleuræ occupied by an oval, moderately polished, oblique depressed area, with a few minute punctulations; the anterior swelling deeply punctate behind, roughened in front; the entire venter coarsely punctured, the sculpture largely hidden by the vestiture; propodeum very shallowly reticulate, the reticulations much lengthened and closely parallel on the sides (Fig. 3); deeper above the petiole. Middle coxæ .22 mm. apart, .60 mm. from the front, and .48 mm. from the hind coxæ; the latter .12 mm. apart; furcula short, indistinct, concealed by the vestiture, not evidently forked.

Coxæ	Troc.$_1$	Troc.$_2$	Fem.	Tib.	Tar.$_1$	Tar.$_2$	Tar.$_3$	Tar.$_4$	Tar.$_5$	Total	Tib. spur
.62	.36	.07	1.20	1.37	.84	.26	.12	.10	.08	5.00	.38 mm.

The tarsal spur is about one-half the length of the metatarsus, the latter is three-fourths longer than joints 3–4 together; claw similar to *reticulata*, rather smaller; posterior coxæ hairy beneath; trochanters nude and polished within, clothed on the outer side with short hairs; femora minutely roughened, clothed with fine hairs; tibiæ longitudinally aciculate, sparingly hairy, clavate at apex; tarsi densely covered with fine hairs; tibiæ and tarsi without spines.

The distance from the metanotum to the petiole is .48 mm., the petiole is 1.03 mm. long, the abdomen 1.32 mm. long; petiole obliquely finely and closely striate on the sides and above. Abdomen orbicular, smooth and polished, the second segment occupying three-fourths its length; segments beyond the third visible only at their extremities. Length 6 mm.

Hab.—Pennsylvania (Philadelphia, July 3, 1899; Delaware Co., July 14, 1898; Lehigh Gap, July 1, 1897, and July 13, 1900, H. L. Viereck; August 1903, J. C. Bradley); Virginia; Canada; New York (Flatbush, L. I., J. L. Zabriskie, July 28, 1893; Ithaca, July 17, 1904, R. S. Woglum; July 9, 1904, July 17, 1905, J. G. Barlow); Michigan (Gold Ledge and Constantine; Kansas (Lawrence, June 18, 1896, H. Kahl; Baldwin, June, J. C. Bridwell).

Type.—♂, ♀, in the author's collection. Paratypes in the collections of the American Entomological Society; United States National Museum; Cornell University and Rhode Island Agricultural College. The type female shall take precedence over the type male.

The most abundant species of the genus in the north.

Hyptia mylacridomanes n. sp.

(Fig. 8.)

♀.—Black; anterior and middle legs brown. Clothed with white hairs. Head from above transverse-quadrate; the anterior edge between the eyes prominent, not evenly convex nor emarginate mesally; the space behind the eyes medium. Profile somewhat pointed above, broadest below the antennæ; eyes oblique, slightly emarginate externally; forehead flat; temples moderately narrow above, much widened below; malar space slightly less than one-half the length of the eyes. Face from in front nearly round, slightly prolonged below, eyes slightly prominent; no antennal basin; apex of mandibles red; the cheeks are separated from the face by a distinct carina, passing from the upper angle of the base of the mandibles to the eyes, then parallel to and but a short distance from the inner margins of the latter to slightly above the insertion of the antennæ; face and clypeus not gibbous; face, forehead, vertex, temples and cheeks closely, coarsely and umbilicately punctured; the punctures less distinct around the antennæ, arranged in rows on the temples; head narrowed behind the eyes; posterior edge not very sharp; no carina between the antennæ; the latter inserted below the middle of the compound eyes, plainly subclavate; scape about one-quarter as long as the flagellum, two-fifths longer than joints 3 + 4; pedicel over three-fifths as long as the first joint of the flagellum.

Body short and stout. Pronotum not forming a visible collar; humeral angles rounded off; mesonotum and scutellum strongly convex, without parapsidal, lateral or anterior grooves; a straight transverse suture between the mesotum and scutellum; vertical part of the pronotum smooth, polished and impunctate: the polished area on the mesopleuræ is irregular, extending two-thirds of the way to the coxæ, broken by a few confluent pits in the centre: the groove not very deep nor prolonged to the coxæ; the anterior swelling full, sparingly punctured with large shallow round punctures, among which are a few minute punctulations; mesoventer similarly punctured; metaventer more coarsely punctured, but the punctures obscured by the vestiture; two distinct oblique carinæ on the metapleuræ (Fig. 8), the first prominent and sharp, with a depressed broad fossa behind it; the reticulations between the two carinæ are four times as long as broad, rather regularly arranged, with a few irregular cross-pieces; behind the second carina the reticulations at the sides are square, the mesal ones elongated, forming a roughly triangular area outside of which the reticulations on the propodeum are of moderate size and depth and hexagonal in shape; above the petiole the propodeum is coarsely punctate. Middle coxæ far apart, nearer to the hind than to the front pair; furcula with very short rounded lobes.

The tarsal spur is one-half the length of the metatarsus; tibiæ minutely spined. Wings hyaline.

Petiole more or less smooth, polished, with a few punctures, these somewhat dilated and oblique on the sides, a few short oblique ridges at the base of the sides, but not appearing obliquely or longitudinally grooved or striate. Abdomen orbicular, much less compressed than is usual in the subfamily, smooth, polished. Length 7.5 mm.

This is the largest species of *Hyptia* that I have seen. It is about equal in size to a small specimen of *Evania appendigaster*.

Hab.—New York (Ithaca, J. H Comstock).

Type.—One female, in the collection of Cornell University.

Hyptia thoracica Blanchard.

(Fig. 6.)

1840. *Evania thoracica* Blanchard, Hist. Nat. Insec., iii, p. 299.
1841. *Hyptiam thoracicum* Shuckard, Entom., p. 120.
1844. *Evania thoracica* Guérin, Rev. Zool. Soc. Cuv., p. 39.
1851. *Evania dorsalis* Westwood, Trans. Ent. Soc. Lond. (2), i, p. 214 (new name for *thoracica* Blanchard).
1887. *Hyptia thoracica* Cresson, List Hymen. N. A., p. 182.

♂, ♀.—Dark red; abdomen, petiole, legs, venter and antennæ black; metapleuræ and forehead dark. Sparingly clothed with white hairs. Head seen from above transverse, the eyes rather prominent, very little space behind them, the anterior edge between them very slightly convex, the posterior margin slightly concave, reflexed. Profile irregular, narrow and pointed above, widest below the antennæ; forehead flat; eyes oblique; temples narrow above, considerably widened below; malar space (.48 mm.) one-third the length of the eye (1.44 mm.); cheeks incurved. Face from in front equilaterally triangular, with rounded basal corners; mandibles deeply punctured at their base, their tips red, .79 mm. from base to base; palpi dark; clypeus separated laterally by a short

impressed suture; cheeks separated from the face by a broad ridge, extending upward close to the inner margin of the eyes; the clypeus and face gibbous; face, forehead, vertex, temples and cheeks rather closely but shallowly umbilicately punctate, the punctures deepest on the vertex, in rows on the temples, smaller than in *prosetethetra:* the antennæ filiform in the male, distinctly clavate toward the middle of the flagellum in the female, inserted in a slight depression considerably below the middle of the eyes; no interantennal carina; scape a little less than one-fifth the length of the flagellum, one-seventh longer than joints 3 + 4; pedicel less than one-half as long as the third joint. Alitrunk short and stout. Pronotum straight, truncate, not incurved, nor prolonged at all into a collar; the humeral angles scarcely sharp, not prominent; mesonotum and scutellum distinctly convex; lateral and anterior grooves absent, the parapsidal grooves very faintly impressed; the polished area on the mesopleuræ not large; a distinct round pit in the centre, and a larger one at the upper corner; the groove distinct and reaching to the coxæ; the anterior swelling full and impressed with round punctures, a little smaller than those on the dorsum, numerous minute punctulations between the lower ones; the venter is similarly punctured, the metaventer a little more coarsely; the mesonotum, scutellum and propodeum above the petiole are closely, coarsely and umbilicately punctured, the punctures quite large; the propodeum below the petiole is reticulate; the sides of the propodeum and the metapleuræ are sculptured as in Fig. 6.

Petiole smooth and polished, with scattered ill defined punctures. Abdomen orbicular, smooth and polished. Length 6.5 mm.

A specimen from New Jersey is entirely black and may be distinct.

Hab.—Florida (Jacksonville, Crescent City, Biscayne Bay); Virginia; Georgia (Tifton); New Jersey (Da Costa, July 19, '03, E. Daecke).

Described specimen in the author's collection.

In 1840 Blanchard described *Evania thoracica* and his description may apply either to a true *Evania*, which is highly improbable, because we know no North American species that are red in color, to an *Evaniella* or to a *Hyptia*. In 1844 Guérin referred to Blanchard's species under the same name without attempt to change its limitation. It has been common among collectors to call all the more or less red species of *Hyptia* occurring in North America *thoracica*, and hence it seems well to determine that henceforth until Blanchard's type be rediscovered the name *thoracica* Blanchard shall apply to the red species of *Hyptia*, which I have above described under that name. In 1841 Shuckard, evidently unaware of Blanchard's work, described *Hyptiam thoracicum*, basing the form *Hyptiam* on the accusative used by Illiger in his original mention of the genus, as elsewhere detailed. By a figure of the wing

Shuckard leaves no doubt as to the generic place of his species, a true *Hyptia*. The simplest course to adopt in treating it is to establish that henceforth, until Shuckard's type be examined, it is a synonym and likewise a homonym of Blanchard's *thoracica*, and therefore has no standing. Therefore, when Shuckard's type can be examined, if it proves to be the same as the species that I have described, no further change need be made; if different, it will remain a homonym, though no longer a synonym, and a new name will have to be given it. On the ground that Blanchard's name *thoracica* had been previously used, Westwood in 1851 proposed the name *dorsalis* to replace it. But *thoracica* had not been previously used other than in manuscript, hence *dorsalis* Westwood has no standing whatsoever, except to invalidate as a homonym *dorsalis* Cameron, proposed for a Central American species and replaced by *cameroni* Schletterer. The name *dorsalis* has been used without shadow of reason by collectors for *Evaniella semæoda*.

Now further confusion arises from Schletterer who indicates the possibility of synonymy as follows: he refers *thoracica* Blanchard, *thoracica* Guérin, and *dorsalis* Westwood to the Mexican *azteka* Schletterer; *thoracica* Guérin again to the Asiatic *dimidiata* Fabr.; *thoracica* Shuckard to *ocellaria* Schletterer from Mexico and the Antilles. In every case except in the reference of *thoracica* Guérin to *dimidiata* he refers them with an interrogation mark; *dimidiata* and *thoracica* Guérin he makes definitely identical, and we would have to consider this as determining the position of the species until the type be rediscovered, were it not for the palpable absurdity of identifying it with an Asiatic species without any cause. Identification of *thoracica* Guérin with *dimidiata* Fabricius would also necessarily include *thoracica* Blanchard and *dorsalis* Westwood. So we shall have to leave Schletterer out of consideration in this case for he is very evidently in error.

Hyptia floridana Ashmead.

1901. *Hyptia floridana* Ashmead, Can. Ent., xxxiii, p. 302.
1902. *Brachygaster floridanus* Kieffer, Gen. Insec., ii, p. 5.

♀.—Dull black. Sparingly clothed with short white hairs. Head seen from above transverse, subquadrate, angles rounded, the eyes occupying almost the entire width; posterior edge truncate; anterior edge between the eyes convex, not noticeably emarginate mesally. Profile elliptical, somewhat pointed above; eyes oblique; forehead flat; temples quite narrow above, three or more times as wide below; malar space (.22 mm.) one-half as long as the eyes (.48 mm.);

cheeks considerably incurved. Face from in front round, the eyes not prominent; no antennal basin; mandibles reddish-yellow, roughened, .41 mm. from base to base; sides of the clypeus without a limiting suture; cheeks separated from the face by a distinct carina, extending from the upper angle of the base of the mandibles outward to the base of the eyes, then inward parallel to and but slightly removed from the inner margins of the eyes to just above the altitude of the insertion of the antennæ; clypeus and face not gibbous; face reticulate, the reticulation somewhat transverse; forehead and vertex with regular, not very deep punctures, evenly placed at about their diameter's length apart; temples with about two rows of punctures; cheeks with confluent punctures; head rounded behind the eyes, posterior margin not sharp, indistinctly carinate; no carinæ between the antennæ. Posterior ocelli .24 mm. apart, .07 mm. from the compound eyes, small; the latter of medium size, rather broadly ovate, widest above, the inner margins parallel, .48 mm. long. Antennæ inserted .05 mm. apart, .17 mm. from the compound eyes; the flagellum somewhat thickened beyond its base; scape three-sixteenths as long as the flagellum, one-fifth longer than joints 3 + 4, pedicel four-fifths as long as long as the first joint of the flagellum. Alitrunk short, 1.08 mm. long, .55 mm. wide, 1.01 mm. high, markedly tapering toward the propodeum. Propodeum not forming a visible collar, the humeral angles sharp; mesonotum and scutellum convex, without sign of anterior, lateral or parapsidal grooves, a distinct transverse suture between the mesonotum and the scutellum; entire dorsum punctured like the vertex; a large rhomboidal, highly polished, impunctate area occupies the entire mesopleuræ, traversed mesally by an oblique broad fossa, in front of which it is considerably swollen; the venter is much narrowed; a suture on the posterior margin of the polished area separates the mesopleuræ from the metapleuræ; the latter separated from the propodeum by a distinct carina, behind which is an oblique depressed smooth polished area, with a few elongated reticulations anteriorly and posteriorly; behind these is a second carina with a smooth area behind it; the metapleuræ are coarsely covered below with a few large very shallow round punctures; the propodeum laterally and posteriorly is very shallowly reticulate. Middle coxæ about .31 mm. from the front and .12 mm. from the hind coxæ.

The tibial spur is one-half the length of the metatarsus; the latter is three-fifths longer than joints 2-4 together; the claw is very small, with a tooth within about as in *reticulata;* tibiæ and tarsi without spines.

The distance from the metanotum to the point of insertion of the petiole is .24 mm., the petiole is .53 mm. long, longitudinally carinulate; the abdomen is round, smooth, polished; the second segment large, taking up three-fourths of its entire length; the apical segments are somewhat exposed. Length 2.8 mm.

This is the smallest species of Evaniid that I have seen, although several recently described species are slightly smaller. It is quite distinct from all the other species in our fauna, and seems more closely related with the Neotropical than the Nearctic species. Dr. Ashmead erroneously states that the types are males.

Hab.—Florida (Biscayne Bay and Jacksonville).

Types.—(Two females), U. S. Nat. Mus., Catalogue No. 6078.

Hyptia reticulata Say.

(Fig. 7.)

1835. *Brachygaster reticulata* Say, Bost. Journ. Nat. Hist., i, p. 224.
1887 ? *Hyptia reticulata* Cresson, List, Hymen. N. A., p. 182.
1887 ? *Hyptia soror* Schletterer, Ann. k. k. nath. Hofm., Wien, iv, p. 330.

♂, ♀.—Black; anterior tibiæ testaceous. Head and body clothed with comparatively long white hairs. Head seen from above transverse-quadrate; the space behind the eyes medium, not inflated laterally; the posterior angles slightly rounded; the anterior edge between the eyes convex, emarginate mesally. Profile narrowed in front above the eye, widest at the antennæ: eye slightly oblique; forehead slightly convex, almost flat; temples moderately narrow above, more than twice as wide at the base of the eyes; malar space (.48 mm.) one-half as long as the eyes (.96 mm.); cheeks incurved so that the base of the mandibles is not visible from the profile. Face from in front almost round; no antennal basin; mandibles deeply punctured at base, their mesal portion red; .77 mm. from base to base; palpi pale; clypeus produced mesally into a round point, the lateral angles rounded; separated laterally by a short poorly defined suture; the cheeks are separated from the face by a distinct carina extending from the upper angle of the base of the mandibles outward to the base of the eyes, then inward parallel to and but slightly separated from the inner margin of the eye to just above the altitude of the insertion of the antennæ; the middle of the face and the clypeus form a gibbous area bounded by the lateral grooves of the clypeus; face, forehead, vertex, temples and cheeks coarsely, closely and umbilicately punctured, the punctures rarely confluent, smaller around the base of the antennæ, coarsest on the temples and vertex; posterior margin of the head sharp, subcarinate; no carinæ between the antennæ; posterior ocelli .31 mm. apart, .12 mm. from the compound eyes, slightly below the middle of the latter; antennæ thickened mesally; scape one-quarter as long as the flagellum, one-half longer than joints 3+4; pedicel two-fifths as long as the first joint of the flagellum. Alitrunk short and stout; length 2.5 mm.; width 1.9 mm.; height 2.2 mm. Pronotum not forming a visible collar; humeral angles sharp; mesonotum and scutellum strongly convex, without any sign of anterior, lateral, or parapsidal grooves; an indistinct transverse suture between the mesonotum and scutellum; these closely, coarsely and umbilicately punctured, the punctures not confluent; vertical part of the pronotum impunctate, polished, a few transverse wrinkles on its postero-lateral edges, in front of the tegulæ; the upper part of the mesopleuræ is a large, highly polished, impunctured, depressed, rhomboidal area, with a few irregular punctures and grooves in the centre, ending below in an oblique depression, beyond which the mesopleuræ are distinctly swollen in an oblique direction toward the coxæ, this swelling and the mesoventer sprinkled with a few smaller round punctures, between which are a considerable number of minute punctulations; metaventer coarsely, closely and umbilicately punctate; propodeum shallowly reticulate, the reticulations lengthened on the side (Fig. 7); above the petiole the propodeum is coarsely punctate. Middle coxæ .19 mm. apart, .84 mm. from the front and .96 mm. from the hind coxæ, the latter .24 mm. apart; furcula short, the prongs consisting of mere rounded knobs.

The tarsal spur is one-half the length of the metatarsus, the latter is one-third longer than joints 2–4 united; the claws are of moderate size, slender, incurved,

with a blunt tooth beneath considerably shorter than the apical ray; the posterior coxæ are sparingly pitted beneath, less noticeably so above: a ring at the base is smooth and polished; the femora are polished posteriorly; finely roughened above; the tibiæ roughened, rather thickly clothed with silky hairs, among which are a number of minute stouter spines, as also on the tarsi. The wings are hyaline, somewhat milky.

The distance from the metanotum to the insertion of the petiole is .72 mm., the petiole is 1.44 mm. long; the abdomen 1.7 mm.; petiole coarsely punctured above, the ventro-lateral angles ridged, the under surface smooth. Abdomen smooth, polished; the second segment much the largest. Length 6.5 mm.

Hab.—New Jersey (Clementon, June 25, 1899, ♀, collected and presented to the author by Mr. H. L. Viereck); Ohio (♂, Sandusky, Cedar Point, July 2, 1903).

Hyptia nyctoides n. sp.

(Fig. 4.)

Entirely coal-black. Clothed with white hairs. Head seen from above distinctly transverse-quadrate, the eyes rather prominent; the anterior margin not convex or mesally emarginate. Profile rounded above, eyes high, slightly oblique; temples broadened below; malar space one-fourth the length of the eye. Face from in front almost round, eyes not prominent, no antennal basin or interantennal carina; extreme apex of mandibles red, the rest black; only a quite indistinct carina separating the face from the cheeks; face and clypeus scarcely swollen; forehead, vertex, temples and cheeks closely, not very coarsely, evenly punctured, the punctures in rows on the temples; the face roughly but rather shallowly reticulate-punctured; the compound eyes small, the antennæ inserted below their middle, nearly filiform; scape one-sixth as long as the flagellum, less than one-fifth longer than joints 3 + 4; pedicel four-fifths as long as the third joint. Alitrunk short and stout; pronotum scarcely prolonged, slightly transversely incurved; humeral angles sharp; mesonotum and scutellum distinctly convex; punctuations on them smooth, close, a little coarser than on the forehead; those on the propodeum above the petiole close, numerous and smooth, but only about one-half the diameter of those on the dorsum proper; the lateral, anterior and parapsidal grooves wanting; the whole mesopleuræ smooth and highly polished, two or three pits in a longitudinal row across the centre; the venter with numerous coarser punctures, coarsest on the metaventer; the sculpture of the metapleuræ and sides of the propodeum as shown in Fig. 4; the propodeum posteriorly and below the petiole shallowly, not very coarsely reticulate.

The tibial spur is one-half the length of the metatarsus; the latter is one-fifth longer than joints 2–5 together; the tibiæ are minutely spinulose. The wings are hyaline.

The petiole is closely, moderately coarsely punctured. The abdomen is orbicular and polished. Length 5.5 mm.

Hab.—New Jersey (Farmingdale, July 14, 1899, H. L. Viereck).
Type.—In the author's collection (one specimen).

Hyptia prosetethetra n. sp.

(Fig. 1.)

Black, except the prothorax, mesonotum, scutellum and most of the mesopleuræ red. Clothed with white hairs. Head seen from above transverso-quadrate; the anterior edge slightly emarginate; posterior corners rounded; the eyes slightly prominent. Profile rounded above; eyes oblique; temples narrow above, considerably broader below; malar space less than one-third the length of the eye. Face from in front ovate, almost round, more pointed below; eyes not prominent; no antennal basin or interantennal carina; apex of mandibles red, their base black; the cheeks are separated from the face only by an indistinct carina, extending but a short distance along the margin of the eye; face and clypens not swollen; face, forehead, vertex, temples and cheeks closely, coarsely and umbilicately punctured, the punctures coarser and more distinct than in *H. hyptiogastris:* even and smooth on the forehead, vertex and temples, rough on the face; arranged in two or three rows on the temples; the antennæ inserted below the middle of the compound eyes; filiform; scape a little less than one-fifth as long as the flagellum; one-fifth longer than joints 3 + 4; pedicel three-fifths as long as the third joint. Alitrunk short and stout. Pronotum slightly prolonged into a collar, transversely incurved mesally; humeral angles rather sharp; mesonotum and scutellum strongly convex; lateral and anterior grooves absent; the parapsidal grooves absent, except for a slight impression near the anterior margin; the polished area on the mesopleuræ is large, with two small pits on the posterior part and one larger one above; the groove is long and deep, extending to the coxæ; the anterior swelling full, with a few quite small punctures; the mesoventer also with small punctures; the metaventer more coarsely punctured; the mesonotum and scutellum closely, coarsely and umbilicately punctured, the punctures large, smaller on the propodeum above the petiole, reticulate below the petiole. The sculpture of the metapleuræ and sides of the propodeum is as shown in Fig. 1; furcula with only very short lobes.

The tibiæ are minutely spinulose. The wings are hyaline.

The petiole is punctured on the side, a very narrow smooth stripe above. The abdomen is orbicular and polished. Length 6.5 mm.

Hab.—Tifton, Georgia.

Type.—In the U. S. National Museum. A specimen without locality in the collection of the American Entomological Society.

Hyptia hyptiogastris n. sp.

(Fig. 2.)

Black; the face below the antennæ, the dorsum and the upper part of the pleuræ red; front legs brown. Clothed with white hairs. Head seen from above strongly transverse; the anterior margin neither noticeably prominent nor mesally emarginate. Profile rather broad, rounded above; eyes nearly straight; forehead flat; temples not much widened below; malar space not one-half the length of the eyes. Face from in front oval, a little pointed below; eyes slightly prominent; no antennal basin; apex of mandibles red, their base black; the cheeks are separated from the face by an indistinct carina, passing from the upper angle of the base of the mandibles to the eyes, then within and close to

their inner margin to the altitude of the antennæ; face and clypeus somewhat swollen into a tubercle in the middle; face, forehead, vertex, temples and cheeks closely, coarsely and umbilicately punctured, the punctures more even and smooth on the forehead, vertex and temples, arranged in rows on the latter; no carinæ between the antennæ; these inserted below the middle of the compound eyes; filiform; scape a little under one-fifth as long as the flagellum; a little under one-sixth longer than joints 3 + 4; pedicel three-fifths as long as the third joint. Alitrunk short and stout, tapering posteriorly; pronotum not forming a distinct collar; humeral angles rather sharp; mesonotum and scutellum somewhat convex; with indistinct parapsidal and no anterior or lateral grooves; vertical part of the pronotum smooth, polished, impunctate; the polished area on the mesopleuræ large, shading below into a punctured area; the groove for the reception of the legs rather deep and prolonged; the anterior swelling and the entire venter and the coxæ are thickly covered with large, sometimes confluent punctures, among which are numerous minute shallow punctulations; the sculpture of the mesopleuræ and forward part of the propodeum is as shown in Fig. 2; entire dorsum to the petiole coarsely evenly punctured, propodeum below the petiole shallowly reticulate; middle coxæ moderately far apart; furcula consisting of two short tubercles.

The tibiæ are minutely spinulose. The wings are hyaline.

Petiole smooth and polished on the very top, obliquely wrinkled and striate on the sides. Abdomen orbicular, smooth, polished. Length 6.5 mm.

Hab.—Georgia (Tifton).

Type.—In the United States National Museum.

Hyptia texana n. sp.

(Fig. 5.)

♀.—Black; the four anterior legs beyond the coxæ testaceous. Head and entire dorsum closely, coarsely, umbilicately punctured, the face less coarsely and more shallowly. Antennæ filiform, the scape a little over one-fifth longer than joints 3 + 4; pedicel four-fifteenths the length of the scape, over one-half the length of joint 3; joints 3 and 4 equal. Humeral angles rather sharp; mesopleuræ smooth and polished, the anterior swelling punctured; lateral area of the propodeum consisting of three rows of oblong interstices (Fig. 28). Posterior tibial spur one-third the length of the metatarsus; the latter longer than the remaining joints together; claw with a small tooth within. Petiole obliquely coarsely wrinkled, above less distinctly wrinkly-punctate.

Hab.—Texas (Galveston, May, F. H. Snow, 1 specimen).

Type.—In the collection of the University of Kansas.

Hyptia brevicalcar Kieffer.

1904. *Hyptia brevicalcar* Kieffer, Ark. f. Zool., i, p. 541.

"♂. L. 6 mm. Schwarz. Mandibeln braun. Gesicht schwach behaart, und sowie die Stirne und der Scheitel netzartig punktiert; letztere unbehaart; Schläfen nach unten erweitert, mit einigen sehr groben Längsrunzeln, dazswischen grob punktiert; Wangen halb so lang wie der schaft, grob punktiert, vom Gesicht durch eine tiefe und breite sich am inneren Augenrande noch fortsetzende Furche getrennt; zwei sehr feine nach aussen bogig gekrümmte Furchen reichen von den Antennen bis zum Munde und begrenzen einen elliptischen

gewölbten Raum; Stirne fast flach, kaum eingedrückt. Fühler dunkelbraun, kaum vor der Augenmitte inseriert; vor ihnen keine wallartige Erhebung; Schaft so lang wie die 3 folgenden Glieder mitsammen; 2. Glied die Hälfte des 3. wenig überragend; dieses fast doppelt so lang als dick, nur wenig länger als das 4. Thorax oberseits mit groben, sich berührenden und benabelten Punkten; Tegulæ gelb; Parapsidenfurchen fehlend; Propleuren gerunzelt; Mesopleuren in der oberen hinteren Hälfte glänzend glatt, vorne und unten grob punktiert; Metapleuren und hinterer senkrecht abfallender Teil des Metanotums grob netzartig gerunzelt; Metasternalfortsatz kurz, ungegabelt, nur ausgerandet. Flügel glashell; Medialader vorhanden; Hinterflügel mit einer Subcostalader und 4 Frenalhäckchen. Beine dunkelbraun, die vorderen rotbraun; hintere Hüften punktiert und behaart, von den mittleren um ihre ganze Länge entfernt; längerer Sporn der hinteren Tibien nur ein Drittel des metatarsus erreichend; dieser so lang wie die 4 folgenden Glieder mitsammen. Abdomenstiel rotbraun, walzenrund, doppelt so lang wie sein Abstand vom Vorderrande des Metanotums, oberseits glatt, mit einigen Punktem, seitlich schräg gefurcht. Wisconsin."

I am unable to determine the relation of this species to our other American species from the above description, and have omitted it from the key.

THE EXOTIC EVANIINÆ.

TABLE TO THE GENERA OF EVANIINÆ.

1. Abdomen of the female distinctly triangular, the apex produced into a short process from which issues the ovipositor (Fig. 18); abdomen of the male more or less narrowly oval; antennæ inserted in a single distinctly impressed basin, bordered usually at least on the lower side by a carina; usually an interantennal carina present; metanotum as seen from the side more or less deeply depressed, the sides of the depression abrupt (Fig. 62), (Tribe EVANIINI) ..... (2).

   Abdomen of the female nearly circular (rarely somewhat triangular), the apex not produced into a process (or rarely slightly produced); abdomen of the male the same shape as that of the female (sometimes oval in *Evaniella*); antennæ not inserted in a distinct impressed basin, at least without any carina below or beside them, rarely if ever between them, the front usually distinctly convex; metanotum as seen from the side less deeply depressed, the sides sloping gradually (Fig. 63), (Tribe HYPTIINI) ..... (5).

2. Front wings with the cell R + 1st R_1 and M_4 not coalescent, M_{3+4} and r-m usually not interstitial, but strongly arcuate (Figs. 75–79) ..... (3).

   [Cells R + 1st R_1 and M_4 coalescent; M_{3+4} and r-m interstitial, forming a nearly straight line (Fig. 82) ..... **Evaniscus** Szepligeti.*]

3. Posterior tibiæ and tarsi provided with very distinct stout spines, arranged rather regularly over their surface ..... (4).

   Posterior tibiæ and tarsi without any spines (Fig. 60); labium modified into a highly chitinized pear-shaped plate, which nearly covers and conceals the ligula (Figs. 28 and 29) ..... **Evania** Fabricius.

* I have not seen this genus, but believe that it belongs in the Hyptiini rather than here.

4. Labium modified into a highly chitinized pear-shaped plate, which nearly covers and conceals the ligula. Hab.—Hawaii.

Szepligetella n. gen.

Labium consisting of a much narrower less chitinized oval plate, longitudinally divided in the middle; the ligula much longer and not concealed (Fig. 26). Hab.—Austro-Malayan and Australian subregions of the Australian.....**Acanthinevania** n. gen.

5. Forewings with only one or two completely enclosed cells.....(8).

Forewings with six or seven completely closed cells .... 6).

6. Forewings with seven completely closed cells, the base of the free part of M arising from the radius near the stigma (Fig. 83).

Evaniella Bradley.

Forewings with only six completely closed cells (Figs. 81 and 82), or if with seven, then the base of the free part of M arising from the radius far before the stigma (Fig. 80) .....(7).

7. Base of the free part of M between m-cu and R wanting, or indistinct and arising from R far anterior to the stigma (Figs. 80 and 81 .

Zeuxevania Kieffer.

Base of the free part of M present between m-cu and R, wanting between m-cu and r-m, so that cells R + 1st R_1 and M are coalesced (Fig. 82).

Evanisens Szepligeti.

8. Forewings with only the cells C and M present and distinctly closed (Figs. 84 and 85) ....(9).

Forewings with only cell C present and closed (Figs. 86 and 87) .....(10).

9. Flagellum of the female suddenly clavate from about the middle (Fig. 55); mesopleuræ with a distinctly polished impunctate area; claws with the inner ray much larger and stouter than the outer ray (Fig. 51).

Semæomyia n. gen.

Flagellum of the female evenly thickened from base to apex; mesopleuræ without any polished impunctate area; claws with the outer ray much the larger and more prominent (Fig. 53).

Semæodogaster Bradley (= *Brachygaster* preoc.).

10. Cubitus present in the front wings (Fig. 86); hind legs always much shorter than in any other genus of the subfamily that I have seen (Fig. 61).

Hyptia Illiger.

Cubitus absent, so that there are only two veins present in the front wings, C and Sc + R + M (Fig. 87)..... ....**Evaniellus** Enderlein.

EVANIA Fabr.

Type.—Evania appendigaster Linn.

For the description of this genus see the first part of this paper There are 63 species of which 35 come from the Neotropical region. The species of the Palearctic region are well tabulated by Szepligeti.* He includes *chinensis*, however, in his Oriental region.

E. appendigaster will not be included in any of the tables except

* Annales Musei Nationalis Hungarici, i, p. 379. 1903.

the following, although it has become naturalized in every region. The student should become familiar with it before using any of the other keys. Probably the majority of the Neotropical species really belong to *Evaniella*.

TABLE TO THE SPECIES OF EVANIA OF THE PALEARCTIC REGION.

1. European and Mediterranean subregions ..... (2).
   Manchurian subregion ..... (9).
2. Face and cheeks longitudinally and obliquely striate ..... (6).
   Face and cheeks not striate, but wrinkled, punctate or smooth ..... (3).
3. Scutellum flat, undivided ..... (4).
   Scutellum convex, emarginate and therefore two lobed; face and mesonotum punctured; forehead depressed.† ..... **schlettereri** Kohl.
4. Forehead excavated ..... (5).
   Forehead flat; face and mesonotum smooth, polished, with a few very fine scattered punctures. Black ..... **appendigaster** Linn.
5. Face with distinct scattered punctures; mesonotum with numerous sharp punctures. The petiole and more or less of the thorax red. **dimidiata** Spinola
   Face without distinct punctures. Thorax and abdomen black. **coxalis** Kieffer.
6. Antennæ inserted equidistant from the anterior margin and the middle of the eyes ..... (7).
   Antennæ inserted near the middle of the eyes ..... **flabellata** Kieffer.
7. Head, at least the face, white tomentose; front excavated; temples wrinkled and punctate ..... (8).
   Head smooth and polished; front convex, except for a small depression behind the antenna, traversed by a longitudinal carina; temples smooth. **striaticeps** Kieffer.
8. Hind wings with eleven frenal hooks; face, vertex and cheeks nearly smooth; propodeum and pleuræ weakly tomentose ..... **punctata** Brulle.
   Hind wings with eight frenal hooks; face, vertex and cheeks as thickly tomentose as the forehead ..... **incerta** Kieffer.
9. Face finely and thickly punctured ..... **chinensis** Szepligeti.

Evania dimidiata Spinola.

Szepligeti has properly credited this species to Spinola. The reference of it in Schletterer and in Dalle Torre's "Catalogus Hymenopterorum" to Fabricius, Syst. Piez., p. 179, 1804, is a pure mistake. Fabricius does not mention the name, and Spinola describes it as a new species.

TABLE TO THE SPECIES OF EVANIA OF THE ETHIOPIAN REGION.

1. Wings brown ..... (2).
   Wings hyaline ..... (3).

† Face and mesonotum coarsely wrinkled, and forehead flat in *cribrata* Semenov), said to be synonymous with *schlettereri*.

Forehead, face and cheeks exceptionally deeply, longitudinally channeled. Length 5.5 mm.....**villosa** Enderlein, Kamerun.

Forehead weakly punctured, face and cheeks smooth. Length 10–11 mm. **fumipennis** Enderlein, Kamerun.

Forehead, face and cheeks apparently wrinkly longitudinally striate, but obscured by the thick pubescence. Length 6 mm. **nyassica** Enderlein, German East Africa.

3. Furcula with parallel tynes or undivided.....(4).

Furcula with strongly diverging tynes; mesonotum rather finely and densely punctate. Length 3.5 mm.....**pusilla** Schletterer, Gold Coast.

4. Habitat, Madagascar. Black, base of flagellum and legs more or less pale. **animensis** Spinola, Madagascar.

Habitat, Cape of Good Hope.....(5).

5. Face, forehead and vertex smooth, polished and impunctate. Black. Length 5 mm.....**capensis** Schletterer, Cape of Good Hope.

Face with fine scattered punctures; forehead finely shagreened above the antennæ. Black, the base of the antennæ and the front legs yellow, apex of the petiole white. Length 3 mm. **levigena** Kieffer, Kaffraria.

TABLE TO THE SPECIES OF EVANIA OF THE ORIENTAL REGION, INCLUDING LOMBOK.

1. Hindostan, Ceylonese and Indo-Chinese subregions.....(2).

Malayan subregion.....(7).

2. Furcula diverging.....(5).

Furcula with parallel tynes.....(3).

3. Wings hyaline; petiole aciculate or smooth; Length 4 mm. or less.....(4).

Wings smoky; face with a distinct mesal keel; petiole rather coarsely obliquely wrinkled. Color black. Length 8–9 mm. **antennalis** Westwood, India and Ceylon.

4. Face and cheeks very finely longitudinally to obliquely striate, and with a scarcely perceptible mesal longitudinal keel; mesonotum shining and smooth, scarcely perceptibly punctured; petiole longitudinally aciculate. More or less rufous.....**dolichopus** Schletterer, Ceylon.

Face and cheeks more coarsely obliquely to longitudinally striate; a distinct mesal longitudinal carina; mesonotum thickly punctured; petiole smooth and polished.....**erythrosoma** Schletterer, Ceylon.

5. Thorax black. Face without distinct keels.....6.

Thorax black; face and cheeks strongly longitudinally striate; mesonotum rugose-punctured; petiole smooth and polished, with a few shallow punctures anteriorly. Black; the base of the flagellum, of the petiole, the four anterior legs, apex of the posterior coxæ, the trochanters and the basal fourth of the femora brownish-yellow; wings clear grayish-brown.....**solox** Enderlein, Lower Burma.

Thorax red; base of the flagellum white; face with a keel on each side below the eyes. Length 6–7 mm. **curvicarinata** Cameron, Khasia Hills, India.

6. Legs marked with white.....**albitarsis** Cameron, Khasia Hills, India.
   Legs not marked with white. Color black, except the four anterior legs are brown, the petiole and propodeum posteriorly pale. Length 3-3.5 mm.....**brachystylus** Schletter, Ceylon.
7. Face striate.....(8).
   Face not striate.....(14).
8. Abdomen black or brown. Length about 6 mm.....(10).
   Abdomen reddish-yellow. Length 8 mm.....(9).
9. Face strongly striate; ocelli as far from each other as from the compound eyes; petiole wrinkled. Color black...**pubipennis** Szepligeti, Lombok.
   Face finely striate; ocelli farther from the compound eyes than from each other; petiole scarcely wrinkled. Color yellowish-red.
   pulchra Szepligeti, Lombok.
10. Habitat, Java.....11.
    Habitat, Singapore or the Phillipines. Length 4.5 mm. or less. Posterior tibiæ with a yellow or white ring; first three to five joints of the antennæ red; forehead punctured or with a finely striate area on each side and a smooth space between.....(13).
11. Dorsum reticulate; length 6 mm.; forehead strongly striate or with two striæ on each side and one in the middle, the rest interrupted by a smooth spot above each antenna. Entirely black, except the four anterior tibiæ and tarsi are brown, joints 2, 3 and sometimes 4 are yellowish-white, and the base of the posterior tibiæ may be white...(12).
    Dorsum rather coarsely and thickly punctured; length 4.5 mm.; forehead smooth and polished, except for five carinæ. Rust-red, except the head above, antennæ beyond the fourth joint, posterior legs except the coxæ, trochanters and base of the tibiæ are black; the face and cheeks, apical half of the petiole and the abdomen are dark brown; antennal joints 2-4, base of the posterior tibiæ and basal half of the petiole yellowish-white.....**multicolor** Kieffer, Java.
12. Forehead with two strong carinæ on each side close to the eye, and another in the middle, the rest interrupted below the middle by a smooth area above each antenna. Base of the posterior tibiæ not ringed with white; antennal joints 2, 3 and 4 dirty yellowish in the female.
    enderleini n. sp., Java.
    Forehead, face and cheeks finely striate, the middle carina more prominent than the others. Tibiæ at base and joints 2 and 3 of the antennæ white.....**annulata** Taschenberg, Java.
13. Forehead coarsely punctured; length 4.5 mm. Broad band at the base of the hind tibiæ, and the tibial spurs yellowish-white; first five segments of the antennæ honey-yellow.
    annulipes Ashmead, Phillipines.
    Forehead on both sides finely striated, in the middle a fine keel, and the space between smooth; length 2.2 mm. Ring at base of the hind tibiæ and the first three antennal segments only, yellowish-red.
    szepligetii n. nom. (= *parva* Szepligeti, nom. preoc.), Singapore.
14. Face and forehead thickly pubescent, apparently without sculpture. Head, antennæ and legs yellowish-red.
    lombokiensis Szepligeti, Lombok.

Face weakly swollen, smooth and polished, in the middle a small tubercle. Yellowish-red; the head, antennæ, hind legs, abdomen and petiole, except the apex, black; first two and half of the third joint of the flagellum, apex of the petiole, trochanters and base of the tibiæ white: anterior and middle legs except the coxæ and trochanters brownish.

kriegeriana Enderlein, West Borneo.

Evania szepligetii n. nom.

1903. *Evania parva* Szepligeti, Ann. Mus. Nat. Hungarici, vol. i, page 381, is preoccupied by *Evania parva* Enderlein, Archiv. für Naturg., 1901, p. 193.

Evania enderleini n. sp.

(Fig. 59, 65 and 78.)

♂, ♀.—Entirely black, except the four anterior tibiæ and tarsi are brown, and segments 2, 3 and 4 of the antennæ of the ♀ are dirty yellowish-white. Head seen from above transverse; eyes very prominent and with but little space behind them, the occiput being almost wanting; posterior ocelli equally far from each other and from the compound eyes. Profile with the compound eyes projecting above the vertex and very small, scarcely extending below the level of the antennæ, so that the malar space is about equal to the length of the eyes. The clypeus and face are very convex; about six carinæ on each side of the face, converging towards the apex of the clypeus, and about double their own length apart; a more strongly marked carina in the centre; about five carinæ on the cheeks extending from the base of the eyes to the mandibles; the temples above the base of the eyes and the vertex behind the ocelli are coarsely subreticulate. The forehead has a strong mesal carina, and two carinæ on each side parallel to the inner margin of the eyes, the remaining carinæ are interrupted below the ocelli by a depressed smooth area above each antenna; this area, while appearing smooth, is really slightly shagreened. In the male the sculpture of the head is much obscured by a dense whitish vestiture, which is present on the head, thorax and propodeum much more strongly than in the female, giving a decided silvery sheen; in the female the scape is very long (Fig. 59), a little less than one-half as long as the flagellum; at the end of the scape the antennæ are strongly elbowed, and the flagellum is thickened and strongly recurved at joints 5–7; joint 3 is about the length of joints 4 + 5, which are about equal in length to each other, and of the flagellum only the first joint is twice as long as broad; in the male the antennæ are not elbowed or recurved, entirely filiform, much longer than in the female; the scape about the length of joints 2 + 3; the latter about the length of joint 4 or 5, which are subequal, and all the joints of the flagellum are at least twice as long as broad.

Entire thorax and propodeum very coarsely reticulate, except the upper part of the mesopleuræ are smooth and polished, and the entire venter is more shallowly and less coarsely reticulate; the humeral angles are square; mesonotal grooves lacking; the furcula has divergent but blunt and not very long tynes (Fig. 65).

The wings are hyaline (Fig. 78); the veins M beyond m-cu, M_{1+2}, m and the longitudinal part of M_2 are very faint. The posterior coxæ, femora and tibiæ are coarsely punctured and hairy; the tarsal claw is very peculiar, in that it is bifid and the inner ray much stronger and longer than the outer ray, and thrown

somewhat out of plane with it; both are strongly incurved; the claw of the male is smaller; the longer tibial spur is a little less than one-half as long as the metatarsus, this is as long as the remaining joints together; a few minute spines on the tibiæ, difficult of detection.

Petiole on the sides obliquely coarsely wrinkled; above coarsely punctured; a little longer than the distance from its base to the metanotum. Abdomen of the female subtriangular, the pygidium produced into a point in which the ovipositor is concealed.

Hab.—Java, 3 males, 3 females.

Type.—Male and female in the collection of Cornell University.

The type female shall take precedence over the type male as type of the species.

TABLE TO THE SPECIES OF EVANIA OF THE NEOTROPICAL REGION.

1. Argentinian and Brazilean subregions.....(2).
   Central American subregion.....(29).
2. Antennæ filiform or gradually thickened.....(3).
   Antennæ incrassate beyond the fifth joint; head and thorax reticulate-rugose. Black; mesonotum and legs red. Length 7 mm.
   paraensis Spinola, Brazil.
3. Furcula with more or less distinct tynes.....(4).
   Furcula truncate, without distinct tynes; head smooth, very finely striate in front; dorsum smooth, polished. Red; scape and femora darker; abdomen brownish-red. Length 6 mm.
   rufa Taschenberg, Argentine Republic.
4. Furcula with divergent tynes.....(5).
   Furcula with parallel tynes.....(11).
5. Petiole smooth and polished.....(6).
   Petiole rugose or striate.....(7).
6. Forehead wrinkled; face very finely punctured; cheeks entirely smooth; vertex with shallow punctures. Black; face and cheeks yellow; the upper half of the thorax red; antennæ beneath and the four anterior legs yellowish-red; base of the posterior trochanters white. Length 6 mm.....**rufidorsum** Szepligeti, Brazil.
   Forehead in the middle and above the antennæ finely rugulose, toward the antennæ and the eyes subcoarsely punctured; a distinct median carina; face longitudinally carinulate, shining, toward the antennæ finely longitudinally striate; cheeks polished with very fine punctures; vertex moderately densely punctate. Black; middle of the antennæ and the legs more or less white. Length 7.5 mm.
   signata Schletterer, Colombia.
7. Face not striate.....(8).
   Face with a few indistinct striæ; two arcuate carina running from the base of the antennæ to the mandibles; cheeks and temples smooth, polished, with a few scattered punctures; forehead with scattered rather coarse punctures, among which fine punctures are thickly set; mesonotum polished, with thickly set microscopic punctures; petiole coarsely, rugosely punctured. Length 7 mm.....**brevigena** Kieffer, Brazil.

8. Face finely punctured; cheeks and forehead sometimes wrinkled..... (9).
Head coarsely punctured. Ferruginous; head, antennæ, abdomen and posterior legs black, other legs brown. Length 10.5 mm.
nobilis Westwood, Brazil.

9. Mesonotum not rugose; petiole one and one-half times as long as the distance from its origin to the scutellum ..... (10).
Mesonotum rugose or rugose-punctured..... (9a).

9a. Mesonotum weakly shining, thickly and finely rugose-punctured, also with large irregular shallow punctures; face weakly swollen, polished, very finely, shallowly and thickly punctured; forehead and vertex thickly but rather finely and deeply rugose-punctured. Yellowish-red; apex of the antennæ, abdomen and hind legs, except the coxæ, black. Length 9 mm..... **miniacci** Enderlein, Peru.
Mesonotum strongly rugose; petiole twice as long as the distance from its origin to the scutellum; head with thick but not deep punctures; cheeks with a few punctures. Black; the head and antennæ except the last four segments and the apex of the ninth orange-yellow; tarsi of all legs and tibiæ of the forelegs brown. Length 6 mm.
hænschi Enderlein, Ecuador.

10. Cheeks, forehead and vertex wrinkled; mesonotum with punctures confluent mesally; petiole one and one-half times as long as the distance of its origin from the scutellum. Yellowish-red; the abdomen and apex of the antennæ black; posterior tibiæ and tarsi brown. Length 8 mm.
pulcherrima Szepligeti, Brazil.
Head smooth and polished; forehead and vertex not wrinkled, but very finely punctured; face with microscopic scattered punctures; shoulders strongly right angled; mesonotum smooth, polished, with only minute punctures; petiole finely longitudinally striate. Length 4.5 mm..... **longitarsis** Kieffer, Brazil.

11. Propodeum with a smooth polished area around the petiole ..... (12).
Propodeum reticulate around the petiole, except sometimes above it.... (13).

12. Entire head and dorsum smooth and polished; petiole rugosely punctured. Length 5 mm..... **polita** Schletterer, South America.
Face smooth and polished in front, longitudinally wrinkled toward the eyes and antennæ; rest of the head punctured to rugose-punctured; mesonotum with moderately large, mesally dense punctures; petiole smooth and polished. Length 8 mm..... **areolata** Schletterer, Brazil.

13. Tibial spur two-thirds as long as the metatarsus or nearly so..... (14).
Tibial spur not over one-half as long as the metatarsus ..... (20).

14. Petiole smooth or punctured..... (15).
Petiole rugose or striate ..... (18).

15. Petiole with large isolated punctures (see *concolor*) ..... (20).
Petiole smooth and polished ..... (16).

16. Mesonotum (at least slightly) and scutellum punctured ..... (17).
Mesonotum smooth, polished; scutellum wrinkled; head polished, the sculpture obscured by vestiture. Black; the antennæ and legs beyond the apex of the femora brownish-red. Length 5 mm.
curvipes Taschenberg, Argentine Republic.

17. Forehead not wrinkled, irregularly, rather coarsely, confluently punctured on the sides, and minutely in the center; well separated, moderately large punctures on the mesonotum in front and along the deep parapsidal grooves, fine irregular punctures posteriorly; scutellum with moderately large separated punctures. Black; the pronotum and mesonotum red; the anterior legs yellow; the four posterior legs brown; the base of the trochanters white. Length 5 mm.
Evaniella cameroni n. sp., British Guiana.
Forehead finely obliquely or arcuately wrinkled; mesonotum finely and sparsely punctate; parapsidal lines not deep; scutellum finely punctate, the punctures obsolete in the middle. Black; antennæ and legs brown. Length 4 mm ..... **tarsalis** Schletterer, Colombia.
18. Head and dorsum coarsely punctured ..... (see *nobilis*, 7).
Head and dorsum finely punctured ..... (19)
19. Dorsum strongly rugose ..... (see *hænschi*, 8).
Dorsum with scattered fine punctures and finer ones between. Black. Length 5 mm ..... **calcarata** Schletterer, Colombia, Brazil.
20. Mesonotum impunctate ..... (21).
Mesonotum punctured ..... (23).
21. Petiole smooth or punctured ..... (22).
Petiole longitudinally striate; head finely punctate; scutellum laterally rugose. Black; anterior legs pale. Length 4 mm.
minor Schletterer, Brazil.
22. Petiole smooth, impunctate ..... (see *curvipes*, 14).
Petiole with large isolated punctures. Black; the anterior tibiæ and tarsi brown. Length 5 mm ..... **concolor** Taschenberg, Brazil.
23. Petiole smooth or punctured ..... (25).
Petiole rugose ..... (24).
24. Coarsely punctate ..... (see *nobilis*, 7).
Head and dorsum finely punctate; humeral angles rounded. Black; antennæ and the forelegs rusty brown. Length 5-5.5 mm.
carinulata Schletterer, British Guiana.
25. Humeral angles sharp ..... (26).
Humeral angles rounded; head finely punctate; mesonotum smooth, several large shallow punctures in the center. Black. Length 5 mm.
dispersa Schletterer, Colombia.
26. Petiole smooth and polished ..... (27).
Petiole closely punctured. Black; head, thorax and petiole more or less reddish; four anterior legs pale. Length 6 mm.
ferruginescens Schletterer, Venezuela.
27. Habitat, Brazilean subregion ..... (28).
Habitat, Argentinean subregion. Black. Length 5 mm.
chilensis Spinola, Chile.
28. Tibial spurs equaling one-half the length of the metatarsus; joint 3 of the antennæ in the male at lease four times as long as the pedicel, the fourth five time as long. Black; head reddish, four anterior legs pale. Length 7 mm ..... **geminata** Schletterer, Colombia.
Tibial spur not one-half as long as the metatarsus; joint 3 of the antennæ in the male only three times as long as the pedicel, the fourth three to

three and one-half times as long as the pedicel. Black; thorax ferruginous; antennæ, four anterior legs and the petiole yellowish. Length 4.5–5 mm..... **nana** Schletterer, Brazil.

29. Furcula with distinctly diverging tynes.....(30).
Furcula with parallel tynes.....(33).

30. Face distinctly punctured ..... 31).
Face impunctate, carinate in the center and less distinctly so laterally; a very strong interantennal process; humeral angles rounded; mesonotum with large separated punctures. Black. Length 11–12 mm.
tinctipennis Cameron, Costa Rica, Panama.

31. Color chiefly black..... 32).
Color entirely rusty red. Length 8 mm.....**ferruginea** Kieffer, Mexico.

32. Black; wings hyaline. Length 9.5 mm.....**fascialis** Spinola, Mexico.
Black; face white; wings smoky. Length 11–12 mm.
albofacialis Cameron, Panama.

33. Mesonotum smooth and polished, punctured only on the anterior border, sometimes wrinkled laterally but smooth in the middle .... (34).
Mesonotum punctured, at least in the middle .....(35).

34. Face impunctate; antero-lateral angles of the mesonotum transversely wrinkled with punctures in the wrinkles. Black; antennæ pale in the middle. Length 6.5 mm.....**flagellata** Schletterer, Mexico.
Face finely scarry punctate, almost shagreened; antero-lateral angles of the mesonotum with distinct punctures, among which are minute ones. Black. Length 5 mm..... **maximiliana** Schletterer, Mexico.

35. Parapsidal grooves distinct ....(36).
Parapsidal grooves obsolete; fac[illegible] punctured. Black; pronotum and mesothorax red; antennal [illegible] trochanters and apex of the petiole white. Length 6.5 mm....**t**[illegible]**anterata** Cameron, Panama.

36. Longer tibial spur one-half as long as the metatarsus or less.....(37).
Longer tibial spur three-fourths as long as the metatarsus; face punctured, not keeled mesally. Black; face white. Length 8 mm.
albispina Cameron, Panama.

37. Hind coxæ obscurely or finely punctured..... ...(38).
Hind coxæ coarsely to rugosely punctured..... ... .(39).

38. Forehead with a mesal keel, on each side of which it is shagreened; mesonotum rugosely punctured. Black; antennal joints 2–4 and apex of the petiole white. Length 7–8 mm..**ornaticornis** Cameron, Panama.
Forehead without a mesal keel, finely punctured, a depression above each antenna; middle of the mesonotum with large punctures, sides shining, aciculated. Thorax, head, scape and feet in part red; antennal joints 2–4, trochanters and apex of the petiole white; abdomen black. Length 6.5 mm..... **varicornis** Cameron, Panama.

39. Mesonotum mesally with large deep punctures, laterally slightly shagreened; scutellum rugosely punctured. Black. Length 7 mm.
rugifrons Cameron, Panama.
Mesonotum mesally subcoarsely and sparingly, anteriorly very finely, punctate, laterally smooth; scutellum coarsely and rather closely punctate; posterior coxæ rugose-punctate above. Black; thorax ferruginous. Length 6 mm..... ..... **robusta** Schletterer, Mexico.

SZEPLIGETELLA n. gen.

Type.—Evania sericea Cameron.

This genus differs from *Acanthinevania* in the mouth parts, which resemble more closely those of *Evania;* the labrum is broad and highly chitinized and the ligula long; the third joint of the labial palpus is very much inflated, two or three times as broad as long. The posterior tibiæ and tarsi are spiny, as in *Acanthinevania.*

So far only one species is known, the only member of the subfamily native to the Hawaiian Islands.

I take great pleasure in dedicating this genus to Herr Victor Szepligeti, whose work on the Evaniidæ as well as on other insects is most admirable.

Szepligetella sericea Cameron.

Three males, Kona, Hawaii, September, 1896 (Koebele); July, 1892, 600 feet (Perkins). One female, Kona, Hawaii, July, 1892, 600 feet (Perkins).

Specimens in the collection of the U. S. National Museum.

ACANTHINEVANIA n. gen.

Type.—Evania princeps Westwood.

This genus differs from *Evania* in the arrangements of the mouthparts and in the spiny character of the posterior tibiæ. The labium consists of two moderately chitinized plates which fold in the middle and do not conceal the long ligula; the third joint of the labial palpi is not dilated and thus not noticeably different from the second (Fig. 26). The cheeks are usually long, and the head seen from in front has usually an oblong appearance. The spiny character of the posterior legs may be used as a reliable recognition character.

The genus replaces *Evania* in the Australian region. The two mingle in the Malayan subregion of the Oriental, and two African species are doubtfully referred to this genus.

TABLE TO THE SPECIES OF ACANTHINEVANIA.

ORIENTAL REGION, MALAYAN SUBREGION.

1. Wings hyaline or light brown.....(2).
   Wings fusco-violaceus.....**shelfordi** Cameron, Borneo.
2. Furcula with divergent tynes.....(3).
   Furcula with parallel tynes or rudimentary.....(6).

3. Wings light brown; mesonotum wrinkled ..... (5).
Wings hyaline; mesonotum smooth, with a few scattered punctures..... (4).
4. Petiole obliquely, rather coarsely wrinkled; humeral angles sharp. Length 7-7.5 mm..... **verrucosa** Schletterer, Philippines.
Petiole very finely longitudinally striated; humeral angles strongly rounded. **sumatrensis** Enderlein, Sumatra.
5. Petiole wrinkled. Length 8 mm..... **alboannulata** Szepligeti, Java.
Petiole shining, the wrinkles obsolete. Length 11 mm. **orientalis** Szepligeti, Borneo.
6. Furcula with parallel tynes; propodeum above thickly and coarsely punctured; mesonotum with coarse scattered punctures. **impressa** Schletterer, Philippines and Polynesian subregion.
Furcula rudimentary; propodeum wrinkled above; mesonotum with microscopic punctures..... **micholitzi** Enderlein, Sumatra.

AUSTRALIAN REGION, AUSTRO MALAYAN AND AUSTRALIAN SUBREGIONS.

1. Head and mesonotum distinctly punctured, wrinkled or striate (finely punctured and weakly shining in *australiensis*)..... (2).
Head and mesonotum smooth and polished, the latter with a few scattered punctures. Tibiæ, tarsi and apex of the femora of the anterior legs and antennal joints 4-7 rusty yellow. Length 9 mm. **argenteocauda** Enderlein, New Guinea.
2. Furcula with parallel tynes..... (3).
Furcula with divergent tynes. Color black...**magretti** Schletterer, Celebes.
3. Humeral angles sharp..... (8).
Humeral angles rounded ..... (4).
4. Face wrinkled or striate..... (5).
Face finely punctured, with a long median carina. Length 7 mm. **lucida** Schletterer, Australia.
5. Length 11-14 mm.; face channeled or finely striate ..... (6).
Length 4 mm.; face finely wrinkled, weakly shining. **australiensis** Szeplegeti, New South Wales.
6. Face coarsely longitudinally channeled, without a distinct median carina. Length 13-14 mm..... (7).
Face finely longitudinally striate, with a short median carina. Length 11-12 mm..... **exima** Schletterer, Australia.
7. Forehead longitudinally wrinkled, above, together with the vertex, irregularly wrinkled; temples with very coarse punctures, almost reticulate; sides of the face and forehead and the temples strongly silvery hairy. **princeps** Westwood., New South Wales and near New Guinea.
Forehead and vertex as strongly and regularly channeled as the face; temples longitudinally striate, with coarse punctures between; inner orbit and the temples weakly hairy.... **striatifrons** Kieffer, Australia.
8. Truncature of the propodeum concave, with a more or less distinct mesal angle..... (9).
Truncature of the propodeum flat or convex (very slightly impressed in *similis* and *similata* ..... (15).

9. Truncature of the propodeum moderately impressed, the surface coarsely reticulate ..... (10).

Truncature of the propodeum very deeply impressed, the middle entirely smooth; mesonotum coarsely and sparingly punctured.

impressa Schletterer, Philippines, Polynesia and New Guinea.

10. Face with a few longitudinal wrinkles, a distinct mesal carina, and sometimes one on each side, in addition to the carina separating the face from the cheeks; mesonotum coarsely and rather thickly punctured ..... (12).

Face punctured or rugosely punctured, without mesal, but sometimes with lateral carinæ; petiole one and one-half times as long as the distance from its insertion to the scutellum or less ..... (11).

11. Face plainly but shallowly wrinkly punctured; mesonotum with coarse punctures, mesally dense. Black.

mediana Schletterer, New Britain.

Face finely punctured with a few coarse punctures; mesonotum polished with very fine scattered punctures and a few coarser ones. Black; scape, femora and tibiæ of the four anterior legs yellowish-red..

tomentosa Szepligeti, New Guinea, New Pommern.

12. Face with three carinæ, one in the middle and one on each side separating the face from the cheeks; posterior metatarsus as long as the three following joints together ..... (13).

Face with five carinæ; one in the middle and two on each side, the outer pair separating the face from the cheeks; posterior metatarsus only as long as the two following joints together; petiole with scattered punctures, twice as long as the distance from its origin to the scutellum. Black; forelegs, except the coxæ and trochanters, middle femora and tibiæ. hind coxæ and under side of the femora, propodeum and petiole, red; tarsi of the middle legs, trochanters, upper side of the femora, and the tibiæ and tarsi of the hind legs reddish-brown.

quinquelineata Kieffer, Australia.

13. Petiole with scattered punctures; one and one-half times as long as the distance from its origin to the scutellum ..... (14).

Petiole thickly punctured among longitudinal wrinkles; twice as long as the distance from its origin to the scutellum. Entirely black, except a red spot at the base of the hind femora..**villosicrus** Kieffer, Australia.

14. Red; base of the cheeks, a stripe on the face, antennæ, middle and posterior tarsi, hind tibiæ, end of the middle tibiæ and of the hind femora and the abdomen black or brownish-black.

versicolor Kieffer, Australia.

Black; front tibiæ and tarsi, and the abdomen, except its apex, red; middle and hind legs dark reddish-brown.

versicolor var. **erythrogaster** Kieffer, Australia.

15. Propodeum above the petiole more or less rugose; face rugose or striate; parapsidal lines inconspicuous or obsolete ..... (16).

Propodeum above the petiole not rugose ..... (18).

16. Petiole longitudinally wrinkled or striate; the longer tibial spur as long as or longer than one-half the metatarsus ..... (17).

Petiole subdensely confluently punctured; longer tibial spur less than one-half the length of the metatarsus; face shallowly scarry punctured; forehead very thickly and coarsely punctured; mesonotum coarsely, in the middle densely, punctured. Black. Length 12 mm.

humerata Schletterer, Australia.

17. Face shallowly punctured and indistinctly longitudinally wrinkled; mesonotum scarry punctured, forming indistinct wrinkles posteriorly; petiole rather coarsely longitudinally wrinkled. Black; antennæ and legs brown. Length 7 mm.....**helleri** Schletterer, East Australia.

Face coarsely, longitudinally to obliquely striate; mesonotum indistinctly longitudinally wrinkled, with thick, coarse, scarry punctures among the wrinkles; petiole obliquely to longitudinally striate. Black. Length 9 mm..... **scabra** Schletterer, Australia.

18. Petiole obliquely striate above.....(19).

Petiole not striate but smooth, punctured or at most rugose-punctured above.....(22).

19. Mesonotum coarsely rugosely punctured; parapsidal grooves absent....(20).

Mesonotum sparingly coarsely punctured; parapsidal grooves very indistinct; humeral angles very sharp. Length 7 mm.

angulata Schletterer, Australia.

20. Posterior ocelli farther from each other than from the compound eyes..(21).

Posterior ocelli nearer to each other than to the compound eyes.....(24).

21. Head and mesonotum coarsely rugose; posterior legs plainly wrinkled on the sides; longer tibial spur somewhat longer than one-half the metatarsus. Length 7 mm..... **major** Szepligeti, New South Wales.

Vertex punctured; forehead wrinkled; face longitudinally striate, the striæ sometimes confluent; mesonotum coarsely rugosely punctured; posterior legs smooth or microscopically punctate, a very few larger punctures on the femora, and the coxæ coarsely punctured.

szepligeti n. sp., New South Wales.

22. Petiole smooth above .....(23).

Petiole punctured or rugosely punctured above .....(25).

23. Posterior ocelli nearer to each other than to the compound eyes; head and mesonotum rugose. Length 5 mm.....(24).

Posterior ocelli a little nearer the compound eyes than to each other; face longitudinally to irregularly wrinkled; mesonotum rugose-punctate. Length 8–9 mm...**mulleri** Schletterer, Australia and New Britain.

24. Scape of the male somewhat longer than the third joint, this twice as long as the second and shorter than the fourth.

similis Szepligeti, New South Wales.

Scape of the male somewhat shorter than the third joint; scape of the female as long as joints 2 + 3; the third joint three times as long as the second and somewhat longer than the fourth.

similata Szepligeti, New South Wales.

25. Face punctured.....(26).

Face rugose, at least laterally, or striate.....(27).

26. Longer hind tibial spur shorter than one-half the metatarsus; furcula obtuse, with scarcely distinct tynes (see 16). Length 12 mm.

humerata Schletterer, Australia.

Longer hind tibial spur as long as one-half the metatarsus; furcula with distinct tynes; petiole finely punctured; face sparingly scarry punc-punctured; mesonotum very thickly and coarsely punctured. Length 8–9 mm.....**australis** Schletterer, Australia.

27. Petiole twice as long as the distance from its origin to the metanotum; mesonotum only slightly convex .....(28).

Petiole only one and one-half times as long as the distance from its origin to the metanotum; mesonotum and scutellum strongly convex; rather closely and very coarsely scarry punctate, with a tendency to wrinkling; petiole distinctly and rather closely punctured. Length 7–9 mm.....**genalis** Schletterer, Australia.

28. Petiole more or less rugosely punctate, laterally obliquely rugose; mesonotum in the middle coarsely and thickly punctured, at the sides almost smooth. Black, except the tibiæ and tarsi of the forelegs and the antennæ except the apex are reddish-yellow. Length 6 mm.
erythrocnemis Schletterer, New Britain.

Petiole finely and densely punctured; face longitudinally wrinkled; forehead rugosely punctured; mesonotum subcoarsely and moderately densely punctured. Black. Length 10–11 mm.
longigena Schletterer, Australia.

Acanthinevania princeps Westwood.

(Figs. 10, 48, 64 and 79.)

One male and five females in the collection of the American Museum of Natural History, and one female in the author's collection, all from New South Wales.

Acanthinevania genalis Schletterer.

(Fig. 26.)

One male and three females in the collection of the American Museum of Natural History, and one female in the author's collection, all from New South Wales. The propodeum is rufous.

Acanthinevania longigena Schletterer.

Male.—Scape about as long as joint three; pedicel about one-fourth as long as joint three; this scarcely shorter than the fourth joint; abdomen oval. Entirely black. Length 8.5 mm.

One male in the collection of the American Museum of Natural History.

Acanthinevania szepligeti n. sp.

(Fig. 47.)

Female.—Black. Sternum sericeous. Head seen from above transverse-quadrate; the eyes prominent; the vertex behind them deep. Eyes moderately long and narrow; their inner margins divergent below; the malar space long, two-thirds or more of their length; the antennæ inserted a little above the base of the eyes; temples broad, very broad below; posterior ocelli a little nearer the compound eyes than to each other; vertex umbilicately punctured, the punctures

well separated; forehead depressed, coarsely punctured to longitudinally wrinkled; a strong mesal carina and two lateral carinæ on the convex face which remain parallel, not converging toward the apex of the clypeus; the lateral carinæ join anteriorly the strong carina which separates the cheeks from the face; between the carinæ the face is longitudinally striate, the striæ not coarse; the cheeks below the eyes are longitudinally wrinkled; the temples are punctured like the vertex; the scape is slightly longer than the distance on the vertex between the compound eyes; about one-tenth longer than joints 2 + 3; the pedicel is a little under one-quarter the length of the third joint, which is one-quarter longer than the fourth.

The humeral angles are very short, the anterior margin of the dorsum appearing as a straight line; the pronotum and upper corner of the mesopleuræ are smooth and polished; the mesonotum and scutellum are coarsely, rugosely punctured, tending to longitudinal wrinkling; the propodeum and less markedly the pleuræ are reticulately punctured; the venter more finely scarry punctured; the furcula has parallel tynes.

Posterior coxæ closely, coarsely punctured; rest of the legs very finely punctured with a few larger pock marks on the femora; posterior tibiæ and tarsi with strong spines; the longer tibial spur considerably longer than one-half the metatarsus; the latter as long as joints 2-4 together; claw (Fig. 47) with a small tooth within, at right angles to and much smaller than the outer ray. Wings hyaline; veins M beyond m-cu, M_{1+2}, M_1, longitudinal part of M_2 and m faintly marked.

Petiole coarsely obliquely wrinkled, above longitudinally. Abdomen black, polished, subtriangular; the second to fourth segments with a few punctures above; pygidium produced into a short process which normally conceals the ovipositor.

Hab.—New South Wales.

Type.—One female in the collection of Cornell University.

I take pleasure in dedicating this species to Herr Victor Szepligeti, who has made substantial contributions to our knowledge and classification of the Evaniidæ of this and other regions.

EVANIELLA Bradley.

Type.—*Evaniella semavoda* Bradley.

For a description of this genus see page 142.

It is probable that nearly all the neotropical species listed under *Evania* really belong here. I have made no attempt to separate them.

The following new species is included in the table of the genus *Evania*, in which the determination of all specimens falling in this genus from outside of the United States should be sought.

Here belongs *Evania semirubra* Cresson from Cuba.

Evaniella cameroni n. sp.

Black; pronotum and mesonotum red; anterior legs, except the apex of the trochanters externally, which are brown, and base of the middle and posterior trochanters, yellow. Sparingly pubescent. Head from above transverse-quadrate; eyes prominent; posterior ocelli nearer the compound eyes than to each other. From the side the temples are narrow, little widened below; the eyes very large; the malar space quite small. From in front the face is nearly round, the inner margins of the compound eyes almost straight, slightly diverging below; the sculpture of the face almost obscured by vestiture, in a favorable light seen to be finely and irregularly but not very roughly punctate; a long distinct carina extends on each side from the outer margin of the clypeus upward to below a point midway between the antennæ and the margin of the eyes; forehead with fine close punctures, in front of the compound eyes these are replaced by larger more separated round punctures, which continue on the vertex, temples and cheeks; forehead with a distinct median carina. Antennæ filiform; scape over four times as long as the pedicel, five-eighths as long as joints 3 + 4; the pedicel one-third as long as joint 3, the latter three-fourths as long as joint 4.

Pronotum scarcely notched above by the mesonotum; humeral angles squarely cut; mesonotum anteriorly and the side of the scutellum with a few scattered round punctures, otherwise smooth; anterior, parapsidal and lateral grooves very distinct; mesopleuræ punctured, with a small smooth and polished area above; furcula with short indistinct parallel tynes; propodeum reticulate; the reticulations produced into oblique bars over a short area on the sides. Posterior tibial spur two-thirds as long as the metatarsus.

Petiole impunctate; abdomen broadly elliptical; the apical segments pubescent.

Hab.—British Guiana, Bartica, May 10, 1901, R. J. Crew.

Type.—In the author's collection.

ZEUXEVANIA Kieffer.

1902. *Zeuxevania* Kieffer, Gen. Insec., 2, p. 4.

Type.—*Evania dinarica* Schletterer.

In this genus (see Figs. 80 and 81) the cell M_4 is elongate and situated nearer to the base of the wing than in *Evania*, the veins m-cu and part of the base of M form its anterior boundary, and join together to form a regular arc. At the same time r-m and M_{3+4} become interstitial, appearing as a single almost longitudinal vein, instead of r-m joining M a short distance before the separation of M_{1+2} and M_{3+4}, as is the case in *Evania*. It is evident that the modification has proceded from the type that we have in *Evania* by the base of the free part of M migrating backward along R to a distance almost halfway between the base of the wing and the stigma, and then in some of the species becoming lost, but in a new species that I have here to describe remaining as a faint vein (Fig. 80).* The mouthparts are shown in Fig. 32.

Occurs in the Palearctic, Ethiopian and Oriental regions. Six species in all.

* This has been recently described as *Parevania*, see addenda.

TABLE TO THE SPECIES OF ZEUXEVANIA.

1. Palearctic region.....(2).
   Ethiopian region.....(3).
   Malayan subregion of the Oriental.....(4).
2. Petiole punctured.....**splendidula** Costa, Sardinia.
   Petiole striated.....**dinarica** Schletterer, Austria, Egypt.
3. Petiole twice as long as the distance of its insertion from the metanotum, smooth and impunctured.
   tenuistylus Enderlein, German East Africa.
   Petiole but little longer than the distance of its insertion from the metanotum, smooth and with a few punctures.
   globiceps Enderlein, German East Africa.
4. Entirely black; petiole obliquely striate.....**javanica** Westwood, Java.
   Prothorax and mesothorax, anterior part of the metapleuræ and anterior coxæ red; petiole smooth and polished .....**schlettereri** n. sp., Java.

Zeuxevania schlettereri n. sp.

(Figs. 32, 50, 80.)

♀.—Black, except the prothorax and mesothorax, anterior part of the metapleuræ and the anterior coxæ are red; the anterior tibiæ and less distinctly the middle tibiæ are yellowish-brown; base of the posterior tibiæ and trochanters white. Slightly sericeous. Head seen from above subglobular; posterior margin truncate; deep behind the eyes, which are not prominent; the postero-lateral corners slightly rounded. The profile is broad, the eye moderately long, only slightly oblique; the temples only slightly widened below; the antennæ inserted on the convex forehead at about the lower third of the eye; malar space about one-third the length of the eye or less. Face from in front almost round. Entire head very minutely, rather closely punctate, appearing smooth under a low power; a carina separating the cheeks and face; two short tooth-like processes just below the antennæ; ocelli forming an equilateral triangle; the posterior ones about equally far from each other and from the compound eyes; antennæ filiform, the scape little longer than joint three, the latter subequal to joint four, and more than twice as long as the pedicel.

The humeral angles rounded; the mesonotum, mesoventer and scutellum punctured similarly to the head; the upper part of the mesopleuræ variously finely punctured, wrinkled or smooth; the rest of the propodeum shallowly reticulate; the furcula with divergent tynes, but these are very small and at first glance one would be led to think it truncate and without tynes; the middle and posterior coxæ are placed close together.

The wings are hyaline, a little dusky at the apex (Fig. 80). The legs are moderately elongate; the posterior coxæ closely punctured; the tibiæ and tarsi without distinct spines; the longer tibial spur two-thirds as long as the metatarsus; the latter as long as joints 2–4 together; the claw bifid, with a stout inner ray and a much more slender outer ray (Fig. 50).

Petiole smooth and polished; abdomen nearly round, the pygidium not produced.

One paratype has the apex of the petiole white.

I take pleasure in dedicating this species to Dr. August Schlett-

erer, who has done more to bring order out of chaos in this family than any other man.

Hab.—Java.

Type and two paratypes in the collection of the Cornell University. One paratype in the author's collection.

EVANISCUS Szepligeti.

(1903. *Pseudevania* Kieffer, misprint for *Zeuxevania*, Zeitschr. f. Hym. u. Dipt., iii, p. 111, see corrigenda to volume.)

1903. *Evaniscus* Szepligeti, Ann. Mus. Nat. Hung., i, pp. 375, 378.

Type.—*Evaniscus tibialis* Szepligeti.

In the Zeit. f. Hymen. u. Dipt., iii, p. 111, Kieffer says that *Evania trochanterata* Cameron and *E. marginata* Cameron belong to *Pseudevania* (misprint for *Zeuxevania*, see Zeitsch. f. Hym. u. Dipt., vol. iii corrigenda). *E. trochanterata* Cameron is a true *Evania*, to which genus it must be returned forthwith. The wing venation as figured by Cameron in the Biologia Centrali-Americana is that of *Evania*, and not of *Zeuxevania* or other genus. *E. marginata* is neither an *Evania* nor a *Zeuxevania*, but is congeneric with the subsequently described *Evaniscus tibialis* of Szepligeti. Hence it should stand in the genus *Evaniscus* Szepligeti of which *tibialis* is the type.

TABLE TO THE SPECIES OF EVANISCUS.

1. Propodeum coarsely reticulate.... .....(2).
   Propodeum rugosely punctured; furcula with parallel tynes.
   marginata Cameron, Guatemala.
2. Petiole curved, with six rather distinct longitudinal carinæ, between these strongly aciculated; furcula with divergent tynes.
   tibialis Szepligeti, Venezuela.
   Petiole moderately slender, finely and thickly punctured, on the sides somewhat aciculate.....**rufithorax** Enderlein, Bolivia and Peru.

SEMÆOMYIA n. gen.

Evania and *Brachygaster* of authors in part.

Type.—*Semæomyia kiefferi* n. sp.

Color usually black, with more or less red or yellow. Head large, broader than the thorax, scarcely or somewhat transverse as seen from above (Fig. 15); eyes large, often very large, extending far toward each other on the vertex and leaving but a small malar space and a narrow front (Fig. 14); ocelli nearly in an equilateral triangle, large and usually very close to the eyes. Antennæ filiform in the males, in the females strongly incrassate beyond the fifth segment (Fig. 55). The mouth parts are shown in Figs. 33 and 34.

Body sometimes elongate, the middle coxæ being placed far posteriorly; mesopleuræ smooth and polished, with a distinct femoral groove; sculpture of a small area on the side of the propodeum of distinctive character, sometimes smooth and polished; furcula usually consisting of a long process with very small parallel or divergent tynes.

Posterior legs long; the tarsal claw bifid, the inner ray larger and stouter than the outer one, the latter sometimes nearly obsolete (Figs. 51 and 52).

Wings hyaline; the venation as shown in Fig. 85.

Abdomen similar in both sexes, nearly round, the pygidium not produced.

The size is usually small, the thorax slender and tapering posteriorly. The punctation is generally fine or absent. There are 13 species, all from the Neotropical region.

TABLE TO THE SPECIES OF SEMÆOMYIA.

1. Central American subregion ..... (2).
   Brazilian and Argentine subregions ..... (3).
2. Mesonotum plainly punctate; posterior metatarsus plainly longer than the remaining joints taken together; cheeks of the male as long as the scape; first joint of the flagellum of the male one and one-half times as long as the pedicel, second twice as long as the pedicel; parapsidal grooves obsolete; head coarsely punctured; pronotum with prominent humeral angles. Length 3.5–4 mm.... **azteka** Schletterer, Mexico.
   Mesonotum smooth and polished, or with a few scarcely noticeable shallow punctures; the posterior metatarsus only as long as the remaining joints together; forehead moderately closely punctate; temples of even width from above to below; scape of the male one-half as long as joints 2 and 3; joint 3 two and one-half times as long as the pedicel; pronotum with rounded humeral angles. Black. Length 4 mm. **nitida** Cameron, Panama.
3. Mesonotum plainly punctured ..... (4).
   Mesonotum not punctured ..... (8).
4. Propodeum between the metanotum and the insertion of the petiole punctured, not wrinkled; furcula with short divergent tynes..... (7).
   Propodeum above indistinctly transversely wrinkled; furcula with parallel tynes..... (6).
   Propodeum reticulate ..... (5).
5. Propodeum on the sides coarsely reticulate; head thickly and moderately finely punctured; face thickly, very finely and moderately shallowly punctured; mesonotum shiny, polished, the middle piece with sparse shallow punctures; parapsidal and lateral carinæ distinct. Length 5–6 mm..... **magna** Enderlein, Peru.

Propodeum very finely reticulate, more finely near the lateral edges; head thickly and finely punctured; mesonotum polished and shiny, the middle piece sparsely and finely punctured, the lateral pieces rather thickly and very finely punctured; parapsidal and lateral carinæ distinct. Length 4-5 mm..... **reticulifer** Enderlein, Peru.

6. Face finely and densely punctured. Black. Length 6-7 mm.
gredleri Schletterer. Brazil.

Face moderately, finely and sparsely punctured, with minute intermediate punctures. Black, except the face, mandibles and antennæ beneath are pale yellow; the four anterior legs rusty yellow.
flavescens Schletterer, Brazil.

7. Face very finely and moderately closely punctate, temples much more shallowly punctate; anterior part of the side of the propodeum concave, with closely parallel cross-bars; body normal, the middle coxæ not placed exceptionally distant from the anterior. Red; the face, four anterior legs, posterior coxæ beneath and trochanters at base yellow; abdomen black; posterior legs brown. Length 4 mm.
taschenbergi n. sp., British Guiana.

Face less finely and more deeply punctured; cheeks and temples smooth and polished with a very few minute punctures; anterior part of the side of the propodeum scarcely concave, smooth and polished; without cross-bars, except along the edge. Red; abdomen brown. Length 6 mm.....**barticensis** n. sp., British Guiana.

8. Furcula with parallel tynes.....(9).
Furcula with divergent tynes.....(10).

9. (See also *fraterna* under 14.)

Posterior metatarsus shorter than the four remaining joints together; longer tibial spur shorter than one-half the length of the metatarsus. Black; first four antennal joints and the coxæ except their apex yellowish-red; fifth antennal joint and the apex of the petiole white. Length 4 mm..... **oculata** Szepligeti, Brazil.

Posterior metatarsus as long as the remaining four joints together; tibial spur as long as one-half the matatarsus. Ferruginous; face, cheeks, temples and two anterior legs white; petiole pale reddish posteriorly, propodeum darkened, especially posteriorly. Length 4 mm.
albata Schletterer, Colombia.

10. Face distinctly punctured.....(11).

Face smooth and impunctate; mesonotum smooth and polished with fine parapsidal lines. Ferruginous; propodeum black; abdomen and posterior legs brown. Length 3-3.5 mm.
gayi Spinola, Colombia and Argentine subregion.

11. Face in the middle with a distinct tubercle; head and face very finely and shallowly punctured.....(12).

Face without a median tubercle; head and face less finely punctured...(13).

12. Cheeks smooth, polished and impunctate; antennæ inserted far below the middle of the eyes; ocelli large and close together; humeral angles rounded; posterior coxæ finely punctate; posterior tibial spur one-half the length of the metatarsus. Black, except the first five antennal joints, anterior legs except the tarsi, middle legs except the tibiæ and

tarsi, posterior coxæ and trochanters, mesopleuræ, venter, spot on the truncature of the propodeum and the apex of the petiole yellow. Length 3.5 mm..... **kiefferi** n. sp., British Guiana.

Cheeks moderately finely and densely punctate; antennæ inserted at the middle of the eyes; posterior ocelli a little farther from each other than from the compound eyes; humeral angles moderately sharp; posterior coxæ beneath subcoarsely and densely punctured; tibial spur one-half as long as the metatarsus. Black; four anterior legs brown. Length 3-3.5 mm... **læviuscula** Spinola, Colombia, Chili.

13. Forehead with a number of widely separated fine punctures; face with close fine punctures, transverse wrinkly just below the antennæ. Brown, with antennæ, at least their bases, pale yellowish; anterior and middle legs, posterior femora and the apex of the petiole whitish. Length 3 mm..... **trinidadensis** Ashmead, Trinidad.

Forehead and face conspicuously, finely and subdensely punctate.....(14).

14. Petiole with only a few shallow punctures. Length 3.5 mm.

fraterna Enderlein, Peru.

Petiole laterally furrowed its entire length.

basalis Schletterer, Colombia.

Semæomyia kiefferi n. sp.

(Figs. 14, 15 and 52.)

♀.—Black; the first five joints of the antennæ, the mesopleuræ, vertex, large spot on truncature of the propodeum, anterior legs except tarsi and apex of tibiæ, posterior coxæ and base of trochanters and the apex of the petiole yellow. Head seen from above (Fig. 15) rounded, somewhat transverse, the eyes very large, on the vertex comparatively close, reaching almost to the posterior margin of the head; ocelli in an equilateral triangle, the posterior ones over twice as far from each other as from the compound eyes. From the profile (Fig. 14) nothing is seen except the compound eye and a narrow bit of cheek and temple below; the antennæ are inserted below the lower two-thirds of the eyes. From in front the head is round, the front narrow, the inner margins of the eyes diverging a little below; a distinct tubercle in the middle of the face below; face and forehead densely, finely punctured; cheeks, temples, vertex and occiput impunctate, smooth and polished; scape one-third longer than joints 2 + 3; these subequal, as is also 4; beyond the fourth joint the antennæ are strongly inflated, tapering again apically.

The humeral angles are rounded; mesonotum and scutellum and most of the mesopleuræ smooth, polished and impunctate; metapleuræ and propodeum shallowly reticulate, the area on the side irregularly shallowly wrinkled; furcula with the tynes divergent but very short.

Wings hyaline; longer tibial spur one-half the length of the metatarsus; the latter one-fifth longer than joints 2-5 together; the tarsal claw small, bifid, the inner ray much stouter than the outer one (Fig. 52).

The petiole is smooth; the abdomen round and polished. Length 3.5 mm.

Hab.—Bartica, British Guiana, May 10, 1901, collected by R. J. Crew, and presented to the writer by Mr. Henry L. Viereck.

Type.—In the author's collection.

Semæomyia barticensis n. sp.

(Figs. 33, 34, 51, 55 and 85.)

♀.—Red; apex of the petiole and the four anterior legs yellowish; posterior tarsi brown; abdomen and antennæ beyond the fifth segment black. Head seen from above transverse, rounded in front and truncate behind; the eyes very large, reaching far up on the vertex and to the posterior margin; ocelli large, in an equilateral triangle, the posterior ones about their diameter's length apart, a little less removed from the compound eyes. In profile little is visible except the compound eyes; the malar space moderately long, the temples obsolete above, widened below; the antennæ are inserted below the middle of the eyes. From in front the head is slightly triangular, the margins of the eyes diverging below; the face has no median tubercle, is moderately closely punctate; the forehead more closely; the temples and cheeks smooth and polished with only a few small punctures; antennæ shown in Fig. 55.

Humeral angles rounded; the mesonotum smooth and polished, with several moderate sized punctures scattered over it, these a little thicker on the scutellum and on the propodeum above the petiole; anterior, parapsidal and lateral grooves distinct; mesopleuræ impunctate, shining, except the anterior swelling which is finely punctured; propodeum except above the petiole shallowly reticulated, the area on the side smooth and shining; the middle coxæ are placed far posteriorly, in juxtaposition to the posterior, the body being considerably elongated; the furcula has very short divergent tynes.

The wings are hyaline. The longer tibial spur is more than one-half the length of the metatarsus; the latter is about one-fourth longer than the remaining joints united. The tarsal claws are very small and mostly broken off in the type, but in the remaining one the inner ray seems to be stout and the outer ray rudimentary (Fig. 51).

The petiole is sparingly punctured above and at the base of the sides, the apex of the sides being transversely wrinkled; it is more than twice as long as the distance from its insertion to the metanotum. Abdomen round, polished. Length 6 mm.

Hab.—Bartica, British Guiana, collected by R. J. Crew and presented to the author by Mr. H. L. Viereck.

Type.—One ♀ in the author's collection.

Semæomyia taschenbergi n. sp.

Red; face, cheeks and temples, scape beneath, trochanters at base and tibial spurs and apex of petiole yellow; rest of posterior legs and base of the petiole brown; abdomen and propodeum around the coxæ black. Head seen from above truncate behind, rounded in front, the anterior edge prominent and emarginate mesally between the eyes; these reaching to the posterior edge; ocelli farther from each other than from the compound eyes. Profile broad, the temples linear above and widened below; malar space moderate; antennæ inserted below the middle of the eyes. From in front the eyes are prominent; their inner margins diverging below; face moderately, finely punctured; temples and cheeks much more sparingly; forehead more closely and coarsely punctured, the vertex smooth.

The humeral angles are rounded; the anterior, lateral and parapsidal grooves well marked; the mesonotum, scutellum and propodeum above the petiole smooth and polished, with few moderate sized scattered punctures; the mesopleuræ smooth and shining; the anterior swelling peppered with exceedingly minute punctulations; the metapleuræ and propodeum reticulate, the area between them concave, with transverse cross-bars; the furcula has very short divergent tynes.

Wings dusky at the apex. Longer tibial spur one-half as long as the metatarsus; this as long as the remaining joints together; claws small, bifid, the inner ray longer and stronger than the outer.

Petiole sparingly punctured. Abdomen round. Length 4 mm.

I take pleasure in dedicating this species to Professor E. Taschenberg, one of the few contributors in recent years to our knowledge of this family.

Hab.—Bartica, British Guiana, collected by R. J. Crew, May 17, 1901.

Type.—In the author's collection.

SEMÆODOGASTER n. nom.

(Figs. 30, 31, 53 and 84.)

Brachygaster Stephens, *preoc.*, Syst. Cat. Brit. Insec., 1, p. 343.

The name *Brachygaster* has usually been dated from Leach, 1817, Edinburgh Encyclopaedia, but the name as there employed is a *nomen nudum* and without standing. At the place cited, in an article on entomology, Leach under the genus *Evania* mentions *Evania minutus.* As synonymous with this, he parenthetically mentions *Brachygaster minutus* Leach MSS. That is Leach's only reference to the name in print. The first person to properly use the name in Hymenoptera was Stephens in 1829. But in 1826 Meigen had used it in Diptera, and it has since been used in Crustacea and Coleoptera. So it is necessary to change it.

The only described species is the European *minuta* Ol., which Kieffer* maintains is different from the *minuta* of Schletterer.

HYPTIA Illiger.

Type.—*Evania petiolata* Fabricius.

The species *petiolata* of Fabricius is unrecognizable, and until its identity be ascertained, *Evania thoracica* Blanchard, as identified in the first part of this paper, shall stand as type of the genus.

For description of the genus, see the first part of this paper. It is confined to the Nearctic and Neotropical regions.

* Ann. Soc. Ent. France, lxvii, p. 816.

TABLE TO THE SPECIES OF HYPTIA OF THE NEOTROPICAL REGION.

1. Brazilian and Argentine subregions.....(2).
   Central American subregion.....(11).
   Antillean subregion.....(16).
2. Posterior tibiæ and tarsi without distinct spines.....(4).
   Posterior tarsi with distinct spines.....(3).
3. Mesonotum irregularly reticulate; tibiæ with short spines. Black; dorsum except the scutellum red; forelegs partly brownish-red. Length 9 mm..... **hirsuta** Taschenberg, Brazil.
   Mesonotum coarsely punctured, sparingly in front and laterally, more densely posteriorly. Black; thorax and anterior legs reddish. Length 8-9 mm..... **amazonica** Schletterer, Brazil.
4. Face impunctured, smooth and polished.....(5).
   Face punctured or rugose or both.....(6).
5. Dorsum strongly punctured; cheeks weakly longitudinally striate. Black; base of the legs and antennæ brown. Length 2.5 mm.
   parva Enderlein, Peru.
   Dorsum impunctate, smooth and polished. Yellowish-red and black. Length 4.5 mm..... **festiva** Taschenberg, Brazil.
6. Face finely punctured, or coarsely punctured with fine punctures between.....(7).
   Face rugose or rugose-punctured.....(9).
7. Petiole about twice as long as the distance from its insertion to the scutellum. Black; temples beneath and four anterior legs reddish-brown.
   chalcidides Enderlein, Peru.
   Petiole but little longer than the distance from its insertion to the scutellum.....(8).
8. Furcula with parallel tynes. Head and antennæ yellowish-red; thorax reddish. Length 3 mm..... **ruficeps** Shuckard, Venezuela, Brazil.
   Furcula with divergent tynes. Black; mesonotum and scutellum red; anterior legs yellowish-red, except the coxæ and trochanters.
   rufosignata Kieffer, Argentina.
9. Furcula with parallel tynes.....(10).
   Furcula with divergent tynes. Yellowish-red; the flagellum and abdomen black; posterior tarsi brown. Length 5 mm.
   nigriventris Szepligeti, Brazil.
10. Longer hind tibial spur shorter than one-half the metatarsus; wings light brown. Shoulders more strongly angled; propodeum coarsely wrinkled, the truncature flat; petiole coarsely and somewhat obliquely wrinkled. Black; scape and the four anterior legs red. Length 5 mm..... **similis** Szepligeti, Brazil.
    Longer hind tibial spur longer than one-half the metatarsus; wings hyaline. Black and more or less rusty red. Length 6 mm.
    soror Schletterer, Guiana, Brazil.
11. Petiole striate.....(12).
    Petiole punctured.....(14).

12. Thorax rugose-punctate. Red; apical half of the antennæ, two spots on the propodeum above, abdomen and posterior tarsi black; apex of the petiole pale. Length 3 mm.....**crassa** Cameron, Panama.
Thorax with separated punctures.....(13).
13. Face transversely rugose-punctured; petiole smooth, except striate above. Black; face, tegulæ, pronotum (= mesonotum ?) and scutellum red. Length said to be 3-7 mm. This may be an error as Schletterer points out, or two species may be here confused.
guatemalensis Cameron, Guatemala.
Face finely but not rugosely punctured; petiole entirely distinctly striulate. Entirely black, except scape and four anterior legs pale. Length 2 mm..... **bakeri** n. sp., Guatemala.
14. Mesonotum coarsely rugosely punctured.....(15).
Mesonotum coarsely and densely punctured. Black; thorax rusty reddish. Length 4 mm....**ocellaria** Schletterer, Mexico, St. Thomas, Cuba.
15. Hind coxæ punctured behind. Black; head, except vertex, more or less of the thorax and the anterior legs red. Length 5 mm.
cameroni Schletterer, Panama.
Hind coxæ impunctate. Black; pronotum and mesonotum red. Length 6 mm..... **rugosa** Cameron, Guatemala.
16. Head at most rugose-punctate; thorax punctured .....(17).
Head and thorax strongly rugose. Black; anterior legs brown. Length 7-8 mm..... **servillei** Guérin, San Domingo.
17. Forehead and mesonotum closely punctured; forehead sometimes thickly pubescent..... 18).
Head, mesonotum and scutellum with a few regularly scattered punctures; parapsidal grooves distinct except posteriorly. Velvety black, except that the propodeum is bright red. Length 5 mm.
johnsoni Ashmead, Jamaica.
18. Pronotum not mesally emarginate above; petiole shallowly or wrinkly punctate.....(20).
Pronotum mesally emarginate above; petiole very sparingly punctured or the sculpture obscured by thick white vestiture.....(19).
19. A distinct patch of white hairs near the base of the abdomen above; cheeks very sparingly, face coarsely and closely punctured. Black; the pro- and mesonotum and mesopleuræ above red. Length 5 mm.
weithi Ashmead, Haiti.
No patch of hairs on abdomen; petiole with a few small scattered punctures, cheeks with a few round punctures; face with an indistinct median longitudinal protuberance, with larger irregular punctures over and between which are close minute punctures, giving it a roughened appearance; forehead with remarkably evenly placed, separated, round punctures. Red; antennæ, legs, except coxæ more or less, vertex and abdomen with petiole black..... **pocyi** Guérin, Cuba.
20. Face immediately in front of the base of the antennæ with a median longitudinal protuberance, and very fine wrinkly punctation; forehead clothed with yellowish hairs; furcula truncate, not forked; the longer tibial spur two-thirds as long as the metatarsus. Rusty red; head in part and the abdomen black. Length 4 mm.
stimulata Schletterer, Cuba.

Face without a protuberance, and coarsely sculptured like the rest of the head; forehead bare; furcula with distinct but parallel tynes; the longer tibial spur scarcely one-half the length of the metatarsus. Black; thorax rusty reddish.

ocellaria Schletterer, Mexico, St. Thomas, Cuba.

Hyptia soror Schletterer.

This species was described from both North and South America. But such a range seems almost impossible in view of what we know of the distribution of these insects. I believe that two species have been confused, and I have not included it in the North American fauna.

Hyptia poeyi Guérin.

♂.—Red; antennæ, vertex, legs, except anterior pair in front which are brown, and posterior coxæ behind which are red, abdomen with petiole, except the apex which is black, yellow. Head from above transverse oval, the anterior margin prominent; the vertex forming a rather sharp crest upon which are placed the ocelli; the posterior ocelli more than twice as far from each other as from the compound eyes. From the side the forehead convex; the eye moderate; the temples moderate, slightly widened below; the malar space about one-third the length of the eye. From in front the head is nearly round, somewhat pointed below; the inner margins of the eyes almost parallel; an ill-defined carina separates the cheeks from the face and runs within and removed from the eyes to the altitude of the base of the antennæ; face with irregular confluent coarse punctures, which are everywhere covered and almost obliterated by minute punctures; forehead covered with vestiture, among which a number of round remarkably evenly placed punctures are visible; temples and cheeks with a few moderate punctures. Antennæ filiform; the pedicel one-third as long as the scape, two-thirds as long as joint 3; the latter equalling joint 4; joints 3 + 4 equalling the scape.

Pronotum emarginate above; humeral angles moderately sharp; mesonotum and scutellum evenly covered with round, moderate, separated punctures, between which are a few small ones; parapsidal grooves indistinctly marked in front; mesopleuræ smooth and polished, much depressed mesally; venter minutely punctulate; propodeum shallowly reticulate, coarsely punctured above between the scutellum and the petiole; the sides with two oblique carinæ, between which are almost obliterated irregular cross-bars; furcula with short parallel indistinct tynes.

Posterior tibial spur four-fifths the length of the metatarsus; the latter almost as long as joints 2-5 together; claws with the inner ray much stouter than the outer.

Petiole with a few small scattered punctures; abdomen highly polished; the remaining segments almost concealed under the second and third.

♀.—The female differs from the male in having very dense yellow pubescence on the forehead, giving it a very striking appearance of bearing a yellow mane; the crest on which the ocelli are placed is not so prominent; the flagellum is distinctly thickened beyond its second joint, tapering again at the apex; the pedicel two-ninths as long as the scape, two-thirds as long as joint 3; the latter one-half

longer than joint 4; 3 + 4 over one-half the length of the scape. The tibial spur is almost as long as the metatarsus; the second segment occupies almost the entire abdomen.

I have recognized this species from two probably authentic specimens sent to Mr. Cresson many years ago and now in the collection of the American Entomological Society. As the original description is too meagre to identify the species from, I have drawn up the above description from two specimens sent me by Professor C. F. Baker, collected by him in Havana, Cuba.

Hyptia bakeri n. sp.

Brownish-black; scape and pedicel, four anterior legs mostly, and base of posterior trochanters yellowish. Ocelli almost twice as far from each other as from the compound eyes; latter large; temples narrow, widened below; malar space small; face with a prominent medial V-shaped area, roughened with minute and coarse punctures, on the sides two rows of large separated punctures; a row of punctures surrounds the eyes, and border the temples and cheeks posteriorly; the latter otherwise very scantily punctured; antennæ slightly thickened, the scape equalling joints 2 + 3 + 4, over three times as long as the pedicel, which is one-fifth less than joint 3; the latter slightly less than joint 4; the forehead, vertex and entire dorsum are regularly covered with round separated but rather close punctures, the humeral angles sharp; the mesonotal grooves wanting; mesopleuræ smooth, polished; propodeum shallowly but very coarsely reticulate laterally and posteriorly; furcula short, with parallel tynes. Posterior tibial spur one-half the length of the metatarsus, which equals the rest of the tarsus. Petiole longitudinally striate. Length 2 mm.

Hab.—Champerico, Guatemala, C. F. Baker, one specimen.

Type.—In the collection of C. F. Baker, Para, Brazil.

Hyptia johnsoni Ashmead.

The locality for this should be Jamaica and not Philadelphia, as I pointed out in the Canadian Entomologist, xxxvii, p. 64. Besides the type in the U. S. National Museum, there are two specimens in the collection of the American Entomological Society.

EVANIELLUS Enderlein.

1905, April 11th. *Evaniellus* Enderlein, Zool. Anzeig., xxviii, p. 70.

Type.—Evaniellus peruanus Enderlein.

Evidently unaware that I had established a genus *Evaniella* for *Evania californica* Ashmead and others in February, 1905, in the Canadian Entomologist, Enderlein in April of the same year established *Evaniellus* for some South American species. It is to be regretted that the two names are so near alike in form, but the recommendation under Article 36 of the International Code as

given by Dr. Stiles provides that names are not to be rejected because they differ only in termination, so we must retain both names, confusing as such a course may seem in the present instance.

Evaniellus seems to differ from *Hyptia* only in the loss of Cu, so that it is one step further in the evolutional series that the family presents in the reduction of the wing veins (Fig. 87).

There are four species, all from the Brazilian region of the Neotropical.

TABLE TO THE SPECIES OF EVANIELLUS.

1. Face finely punctured.....(2).
   Face rugose or rugose punctured.....(3).
2. Head above rather coarsely punctured; face finely and thickly punctured; diameter of the hind ocellus less than its distance from the compound eyes; petiole strongly, thickly and coarsely punctured, on the side distinctly aciculate. Length 3 mm....**peruanus** Enderlein, Peru.
   Head above rather finely and thickly punctured; face very finely and shallowly punctured; diameter of the hind ocellus equal to its distance from the compound eyes; petiole long, finely but sharply longitudinally striate. Length 4 mm.....**gracilis** Enderlein, Peru.
3. Head rather coarsely rugose; thorax coarsely rugose-punctured, the parapsidal lines not very distinct, the lateral parts polished behind; propodeum coarsely reticulate; petiole distinctly longitudinal wrinkled. Black; flagellum rust red; wings light brown. Length 5 mm. **brasiliensis** Szepligeti, Brazil.
   Head above rather coarsely punctured, face very finely wrinkly punctured; mesonotum coarsely punctured; parapsidal furrows marked by a thickly punctured line; propodeum above thickly punctured, on the sides more reticulate; petiole rather strongly, very thickly punctured and longitudinally striate. Black; the face, cheeks, temples, scape and anterior pair of legs rust yellow; the middle legs yellowish-brown. Length about 4 mm. **chalcidipennis** Enderlein, Bolivia.

ADDENDA.

The descriptions of the following species were not accessable to the author until too late for inclusion in the keys.

EVANIA.

Oriental Region.—*E. hirtipes* Kieffer; *peradeniyæ* Cam.; *interstitialis* Cam.; *hirsuta* Enderl.; *hirsuta* var. *rufofemorata* Enderl.; *setosa* Enderl.; *binghami* Cam.; *deesaensis* Cam.

Ethiopian Region.—*E. schönlandi* Cam. (allied to *Zeuxevania*); *meridionalis* Cam.; *fulvospina* Cam.; *peringueyi* Cam.; *rimosa* Enderl.

Neotropical.—*E. sancti-pauli* Kieff.

ACANTHINEVANIA.

Oriental.—*A. satanus* Enderl.; *simillima* Enderl.

Australian.—*A. meraŭkensis* Cam.

ZEUXEVANIA.

Oriental.—(*Parevania*) *rubra* Cam.; (*Parevania*) *semirufa* Kieff. See note below.

SEMÆOMYIA.

Brazilian Subregion.—*S. lüderwaldti* Enderl.; *lævis* Enderl.

The author has not had access to descriptions of the following species: *Evania coxalis* Kieff; *flabellata* Kieff.; *rufonotata* Kieff.; *parvula* Kieff; *tomentella* Kieff.; *canaliculata* Kieff.; *bicarinata* Kieff.; *carinigera* Kieff.; *beauforti* Cam. The last is probably an *Acanthinevania*, and said to be close to *A. meraŭkensis* Cam.

PAREVANIA Kieffer.

(Fig. 80.)

1906. *Parevania* Kieffer, Berl. Ent. Zeitschr., li, p. 270.

Type.—Parevania semirufa Kieffer.

Kieffer erects this genus for *P. semirufa* n. sp., which is either identical or very close to my *Zeuxevania schlettereri* described on page 179. About the only difference evident between this genus and the type of *Zeuxevania—Z. dinarica* Schletterer—is that the base of the free part of M is not entirely atrophied. For the present, at least, I should not incline to assign it more than subgeneric rank.

Evania rubra Cam. is a closely related, although distinct species. Cameron hesitates to place it in *Zeuxevania*, with which he admits its affinities, on account of its possessing the longitudinal sector of the base of the free part of M, which he states is absent in *Zeuxevania*, doubtless thinking of his *E. marginata*, which, however, really belongs to *Evaniscus* and not *Zeuxevania*.

FŒNINÆ.

I have recently recognized an additional genus of Fœninæ, resembling *Pseudofœnus* in wing venation, but occurring in California with one new species and in Guatemala. The description of this genus and species and of a new species of *Fœnus* from California, with additional observations on the classification of the subfamily, I shall shortly publish elsewhere.

EXPLANATION OF THE PLATES.

Plate V.

1. *Hyptia prosetethetra* n. sp., sculpture on side of pronotum
2. *Hyptia hyptiogastris* n. sp., " " "
3. *Hyptia harpyoides* n. sp., " " "
4. *Hyptia nyctoides* n. sp., " " "
5. *Hyptia texana* n. sp., " " "
6. *Hyptia thoracica* Blanchard, " " "
7. *Hyptia reticulata* Say, " " "
8. *Hyptia mylacridomanes* n. sp., " " "

Plate VI.

9. *Evaniella californica* Ashm., lateral view of head.
10. *Acanthinevania princeps* Westw., top view of head.
11. *Evaniella semæoda* n. sp., " "
12. *Hyptia harpyoides* n. sp., " "
13. *Evania appendigaster* L., " "
14. *Semæomyia kiefferi* n. sp., profile.
15. *Semæomyia kiefferi* n. sp., top view of head.
16. *Evaniella semæoda* n. sp., profile.
17. *Evania appendigaster* L., profile.
18. *Evania appendigaster* L.
19. *Hyptia*, thorax from in front, the head being removed.

Plate VII.

20. *Hyptiogaster humeralis* Schl., labium.
21. *Hyptiogaster humeralis* Schl., maxillæ.
22. *Fœnus incertus* Cresson, labium.
23. *Fœnus incertus* Cresson, maxillæ.
24. *Odontaulacus editus* Cresson, labium.
25. *Odontaulacus bilobatus* Prov., maxillæ.
26. *Acanthinevania genalis* Schl., labium as seen from the side.

Plate VIII.

27. *Evania appendigaster* L., maxilla.
28. *Evania appendigaster* L., labium, dorsal view.
29. *Evania appendigaster* L., " ventral view.
30. *Semæodogaster minuta* Ol., labium, ventral view.
31. *Semæodogaster minuta* Ol., maxilla.
32. *Zeuxevania schlettereri* n. sp., mouth-parts.
33. *Semæomyia barticensis* n. sp., labium.
34. *Semæomyia barticensis* n. sp., maxilla.
35. *Evaniella semæoda* n. sp., mouth-parts.
36. *Hyptia harpyoides* n. sp., maxilla.
37. *Hyptia harpyoides* n. sp., labium, ventral view.
38. *Hyptia harpyoides* n. sp., " dorsal view.

PLATE IX.

39. *Pammegischia ashmeadi* n. sp., posterior tarsal claw.
40. *Odontaulacus editus* Cr., " "
41. *Oleisoprister stigmaterus* Cr., " "
42. *Pristaulacus niger* Shuck., " "
43. *Fœnus incertus* Cr., " "
44. *Evania appendigaster* L., " "
45. *Evania urbana*, n. sp., " "
46. *Evania tinctipennis* Cam., " "
47. *Acanthinevania szepligeti* n. sp., " "
48. *Acanthinevania princeps* Westw., middle "
49. *Evaniella semæoda* n. sp., posterior "
50. *Zeuxevania schlettereri* n. sp., " "
51. *Semæomyia barticensis* n. sp., " "
52. *Semæomyia kiefferi* n. sp., " "
53. *Semæodogaster minuta* Ol., " "
54. *Hyptia harpyoides* n. sp., " "

PLATE X.

55. *Semæomyia barticensis* n. sp., ♀, antenna.
56. *Evania appendigaster* L., ♀, "
57. *Hyptia harpyoides* n. sp., ♂, "
58. *Hyptia harpyoides* n. sp., ♀, "
59. *Evania enderleini* n. sp., ♀, "
60. *Evania appendigaster* L., posterior leg.
61. *Hyptia harpyoides* n. sp., " "
62. *Evania appendigaster* L., metanotum as viewed from the side.
63. *Hyptia* sp., metanotum as viewed from the side.
64. *Acanthinevania princeps* Westw., furcula.
65. *Evania enderleini* n. sp., "
66. *Evania urbana* n. sp., "

PLATE XI.

67. *Aulacinus fusiger* Schl., front wing (after Kieffer).
68. *Pammegischia ouelleti* Brad., front wing, abnormal, see text.
69. *Pammegischia ashmeadi* n. sp., front and hind wings.
70. *Interaulacus kiefferi* n. sp., front wing.

PLATE XII.

71. *Odontaulacus editus* Cr., front and hind wings.
72. *Hyptiogaster humeralis* Schl., front and hind wings.
73. *Fœnus incertus* Cr., front wing.
74. *Pseudofœnus pedunculatus* Schl., front wing.

PLATE XIII.

75. *Evania* sp., part of front wing.
76. *Evania appendigaster* L., front and hind wings.
77. *Evania urbana* n. sp., front wing.
78. *Evania enderleini* n. sp., front wing.

PLATE XIV.

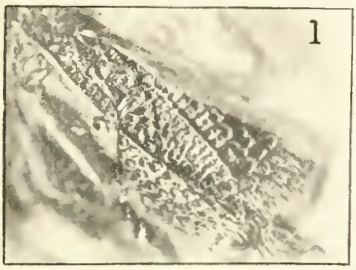
79. *Acanthinevania princeps* Westw., front wing.
80. *Zeuxevania* (*Parevania*) *schlettereri* n. sp., front wing.
81. *Zeuxevania dinarica* Schl., " (after Kieffer).
82. *Evaniscus marginatus* Cam., " (after Cameron)
83. *Evaniella neomexicana* Ashm., "

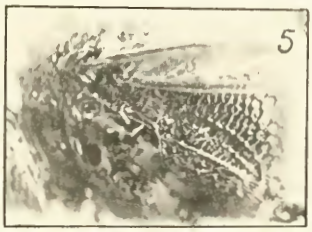
PLATE XV.

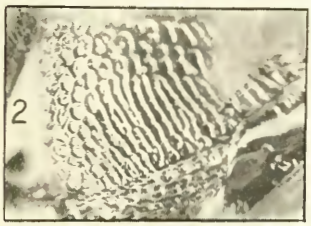
84. *Semæodogaster minuta* Ol., front wing.
85. *Semæomyia barticensis* n. sp., "
86. *Hyptia* sp., front and hind wings.
87. *Evaniellus* sp,. front wing (after Enderlein).

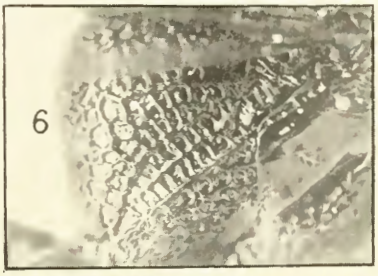
ERRATA.

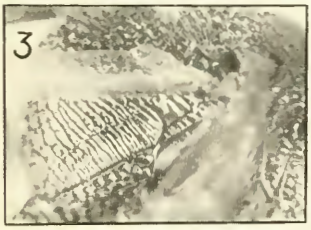
Page 101, title, Read **ARCHAIC** for **ARCHIAC.**
" 109, 5th line, *Fœnus sericeum* Cameron for *F. maculicorne.*
" 133, 8th line, read Fœninæ for Gasteruptioninæ.
" 133, 29th and 34th lines, read m-cu for m cu.
" 136, 3rd column, 17th line, read ? 2^4 for ? 2^*.
" 137, 29th line, read *Ichneumon appendigaster* for *Evania appendigaster.*
" 163, 39th " " " " " " "
" 168, line 1 of table, read Argentine and Brazilian subregions.

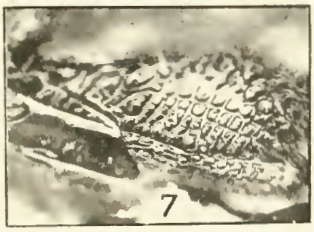


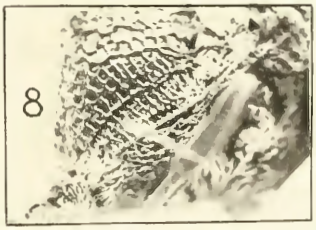












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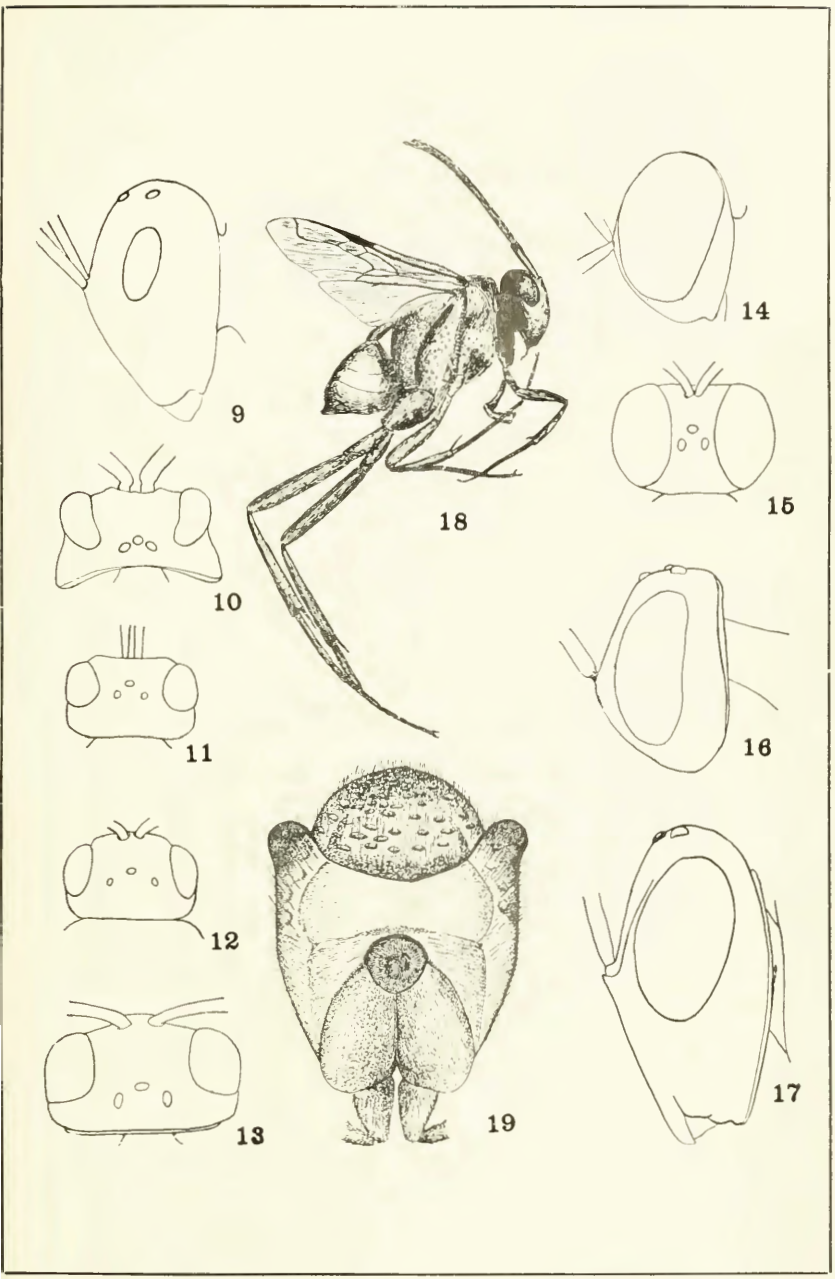

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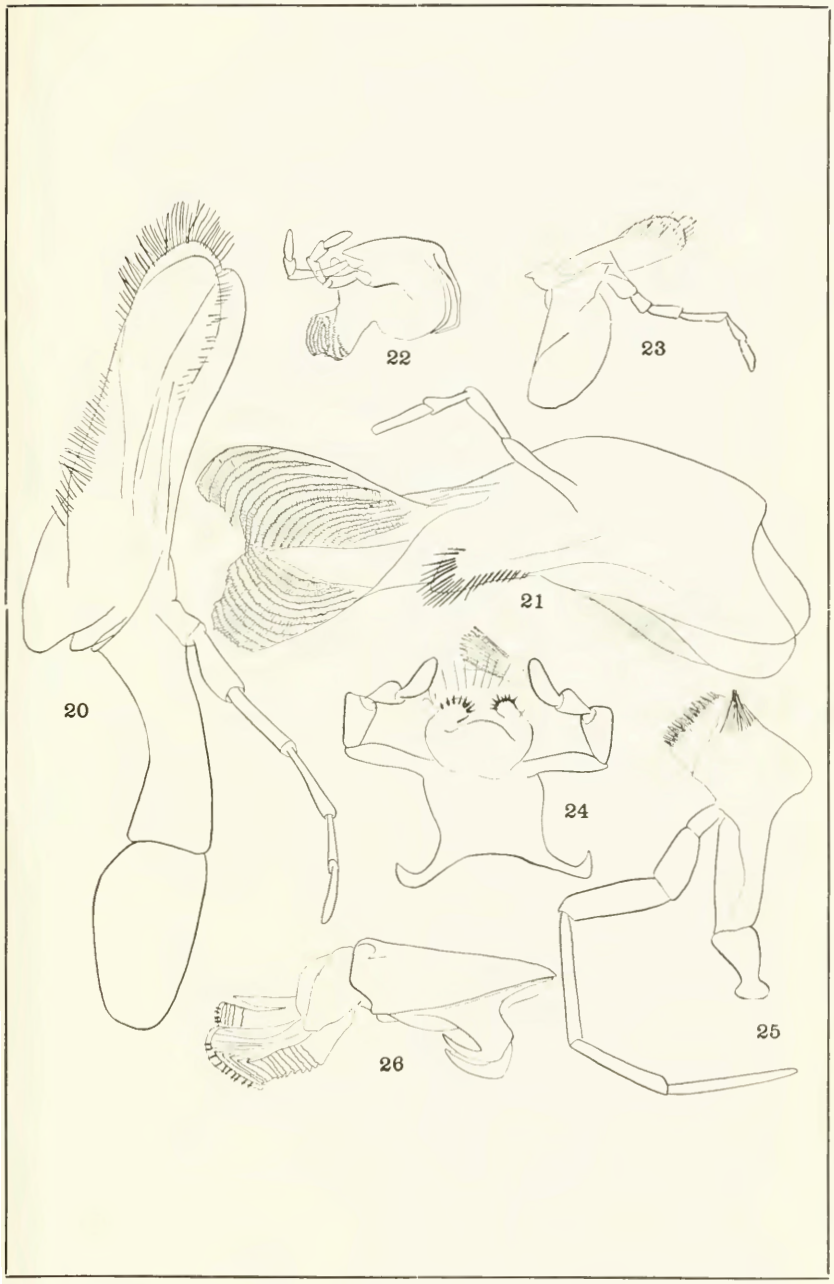

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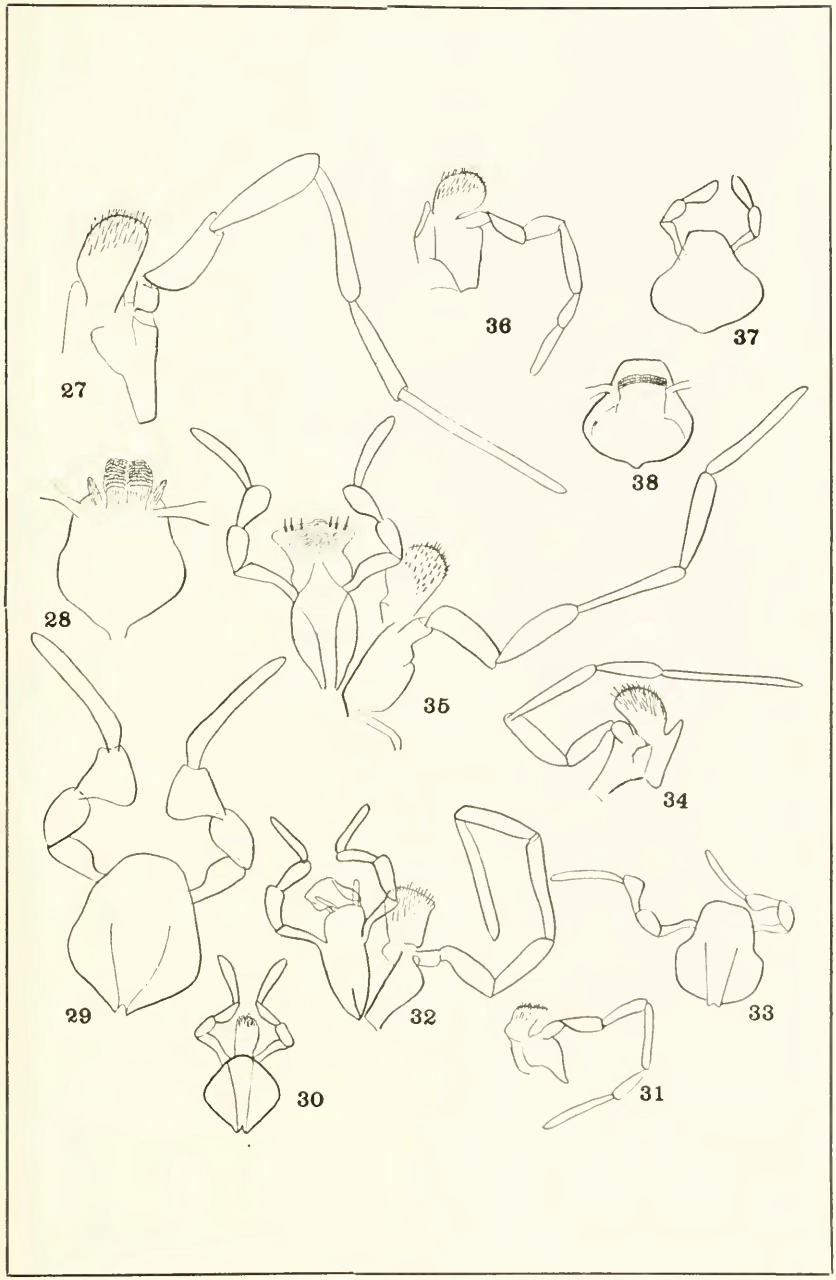

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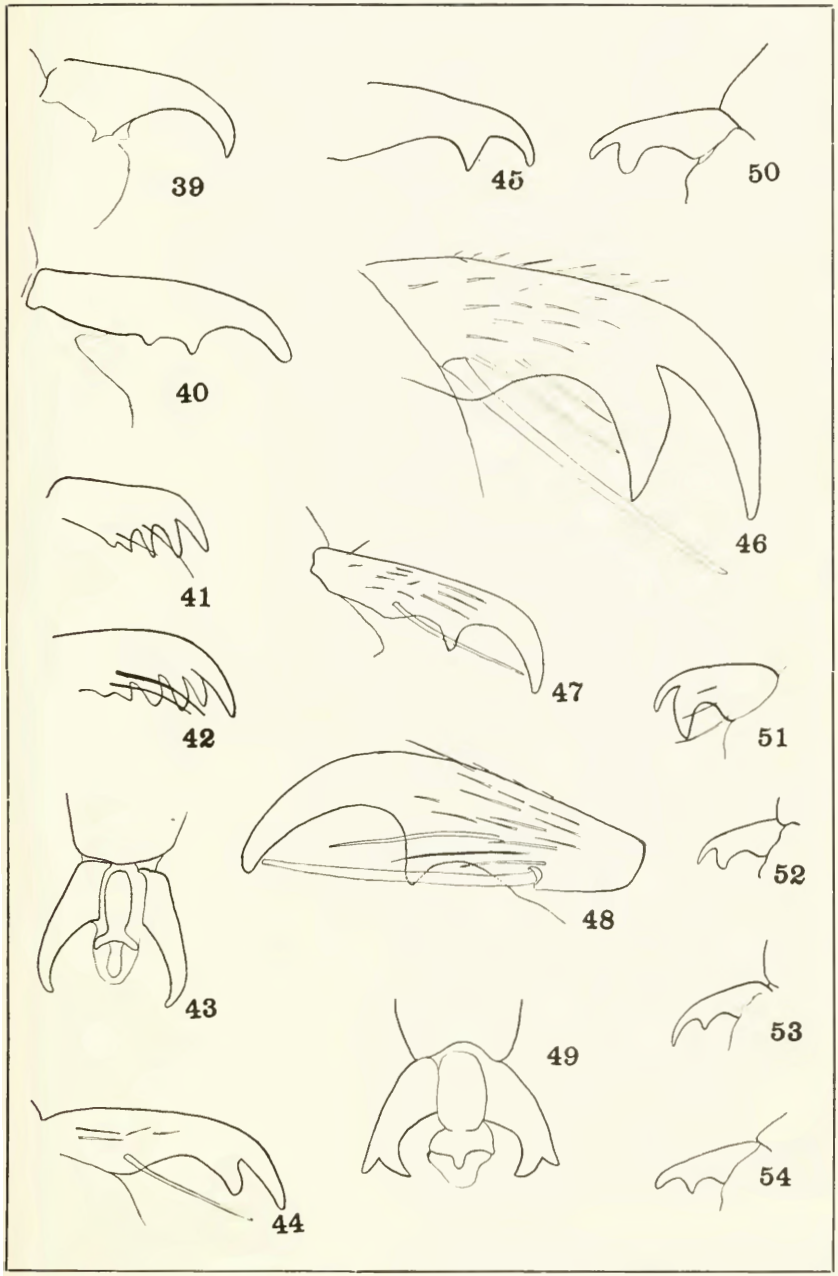

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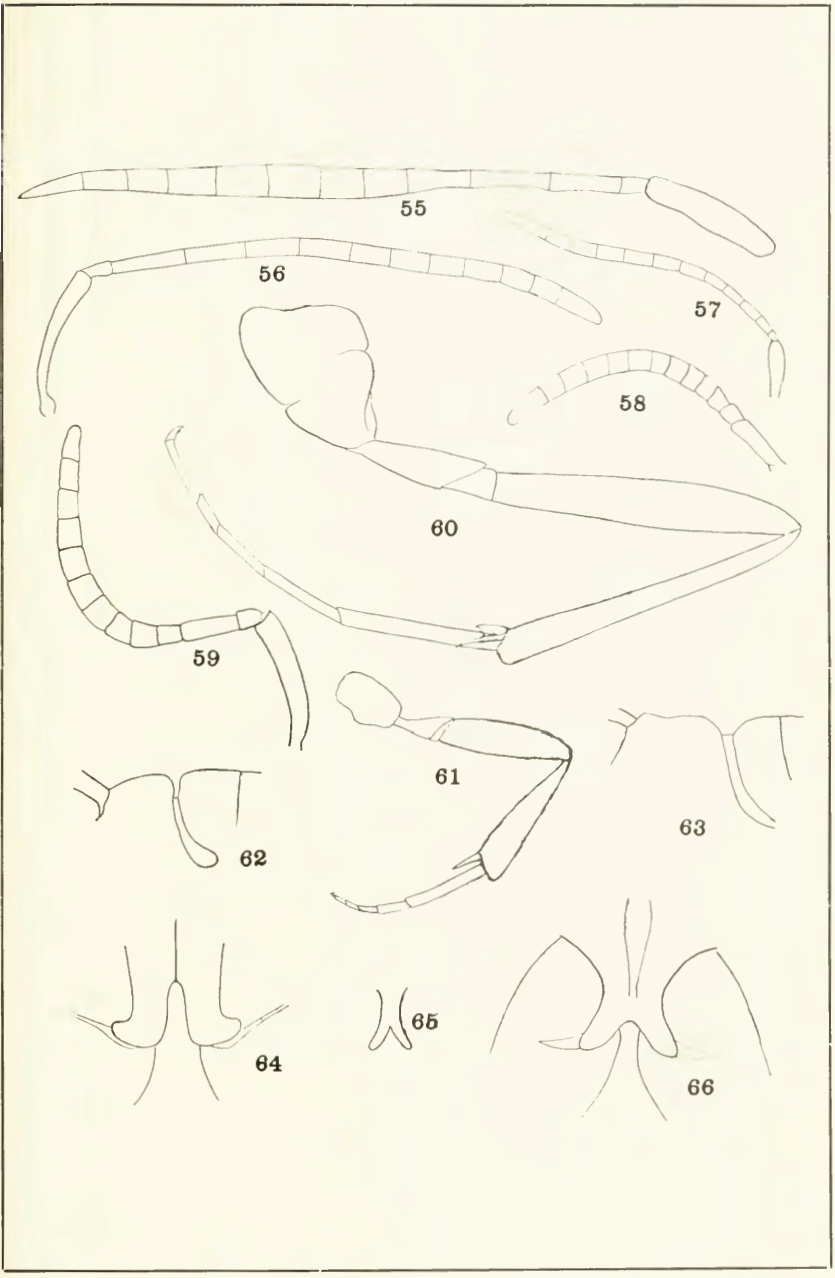

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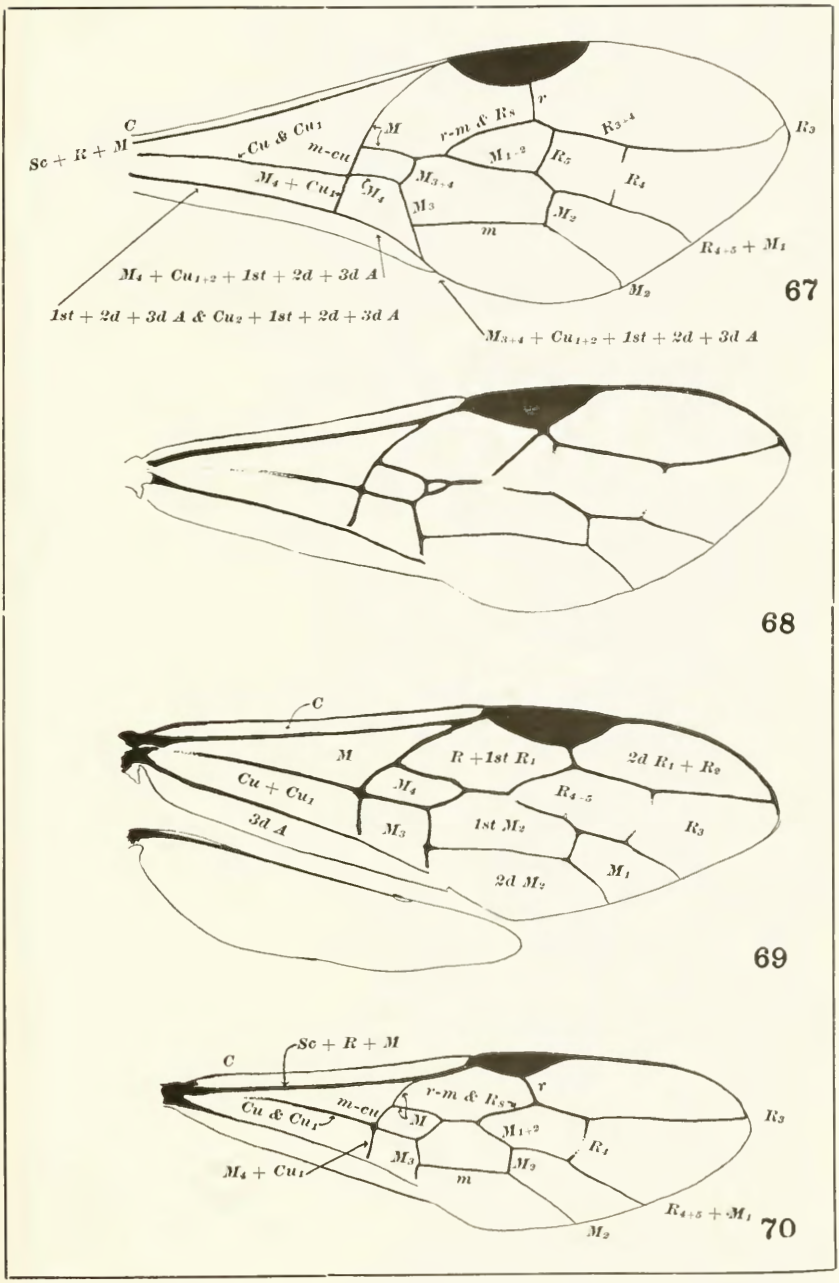

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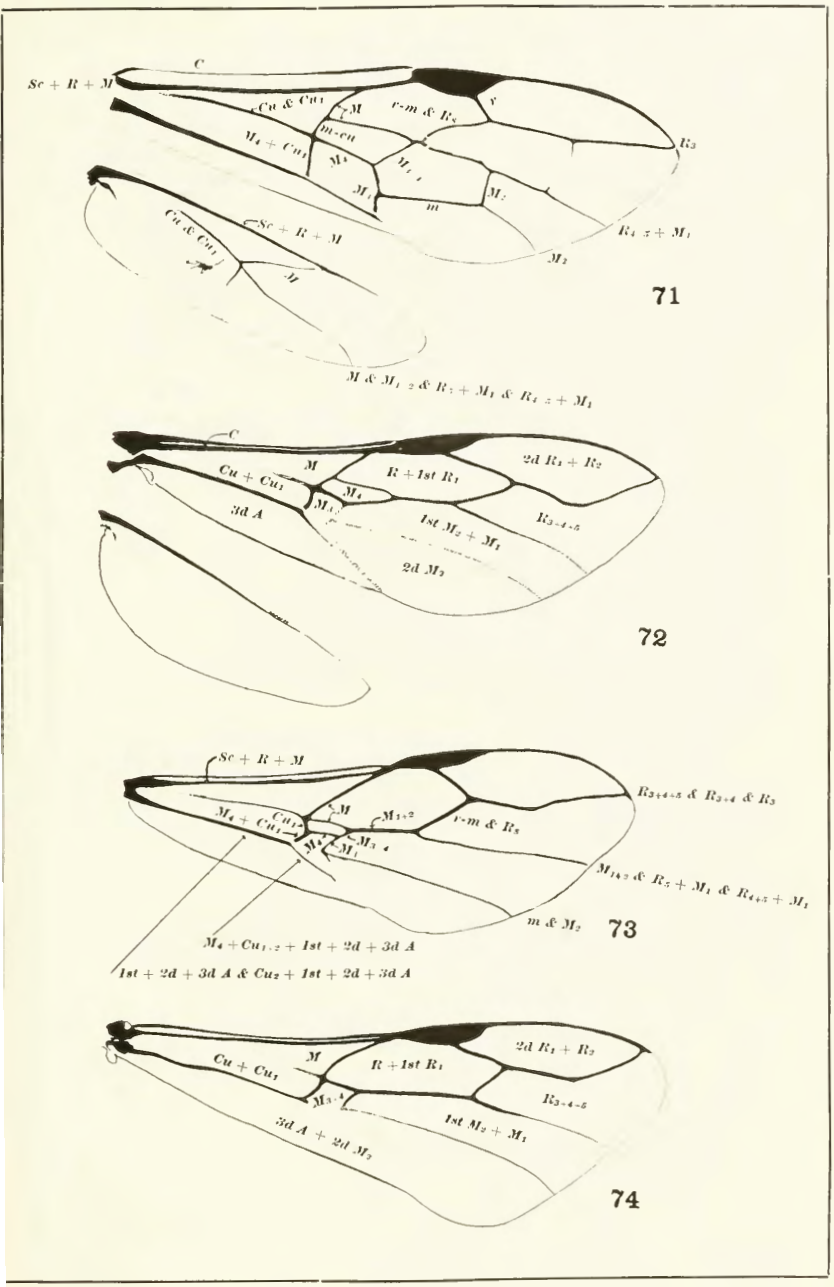

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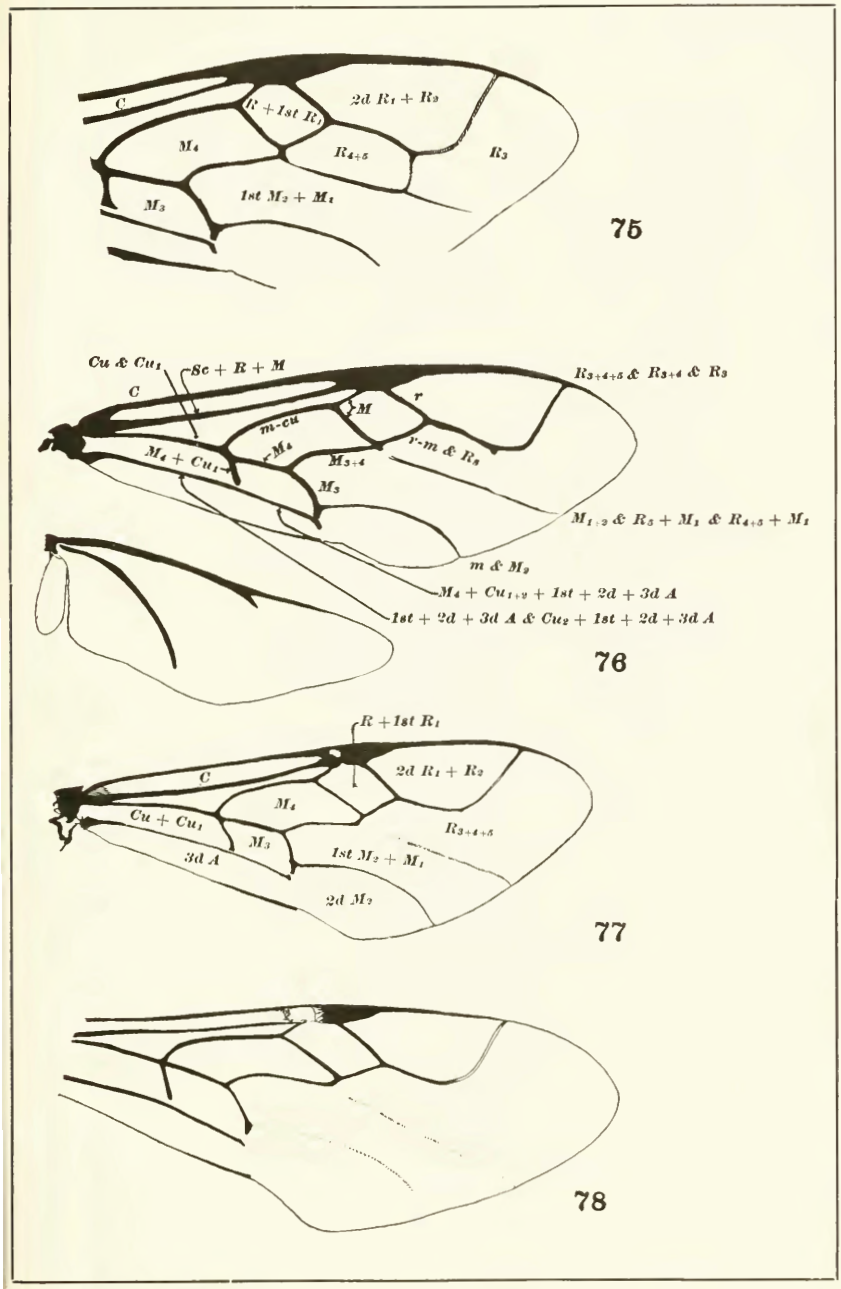

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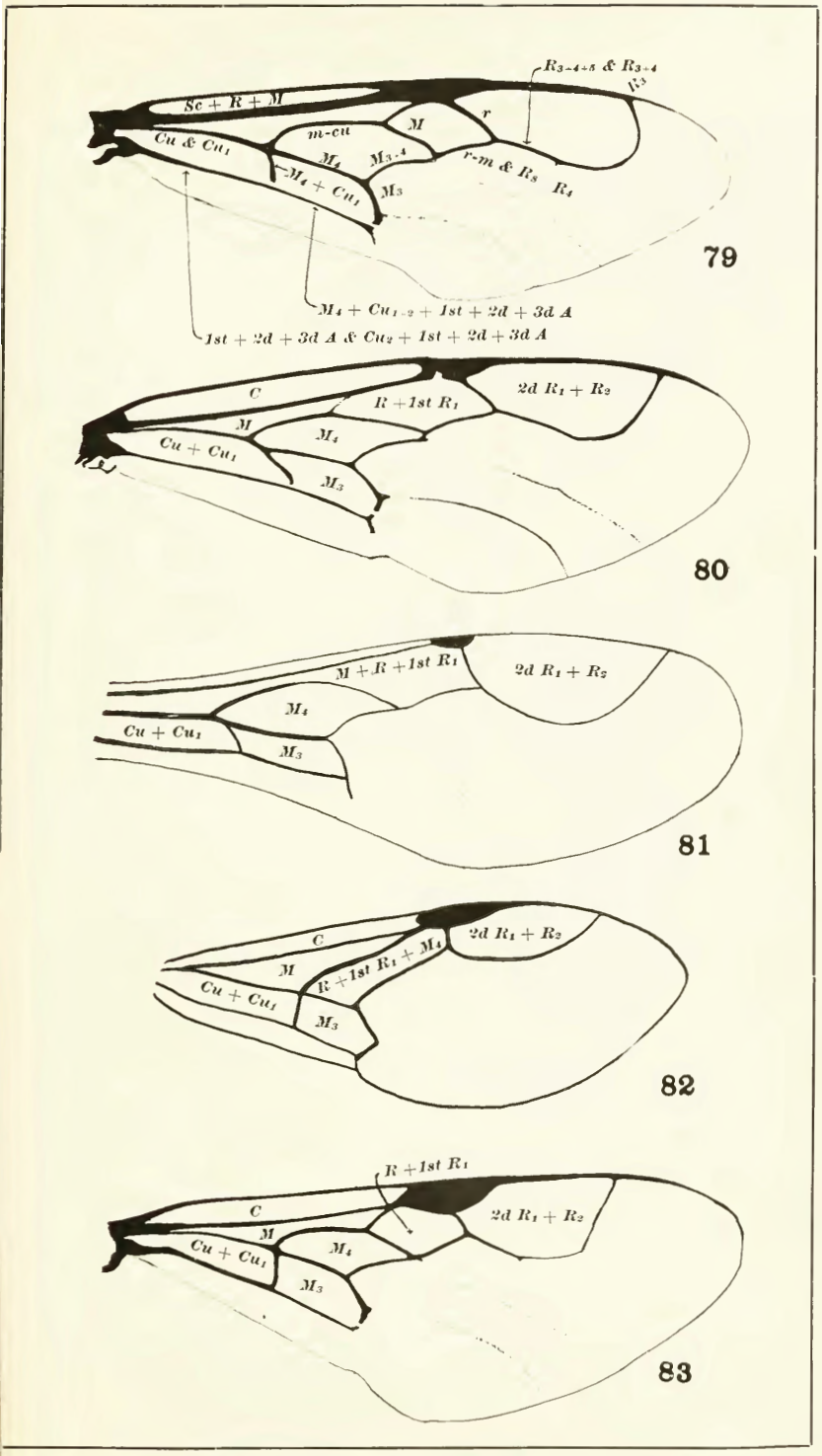

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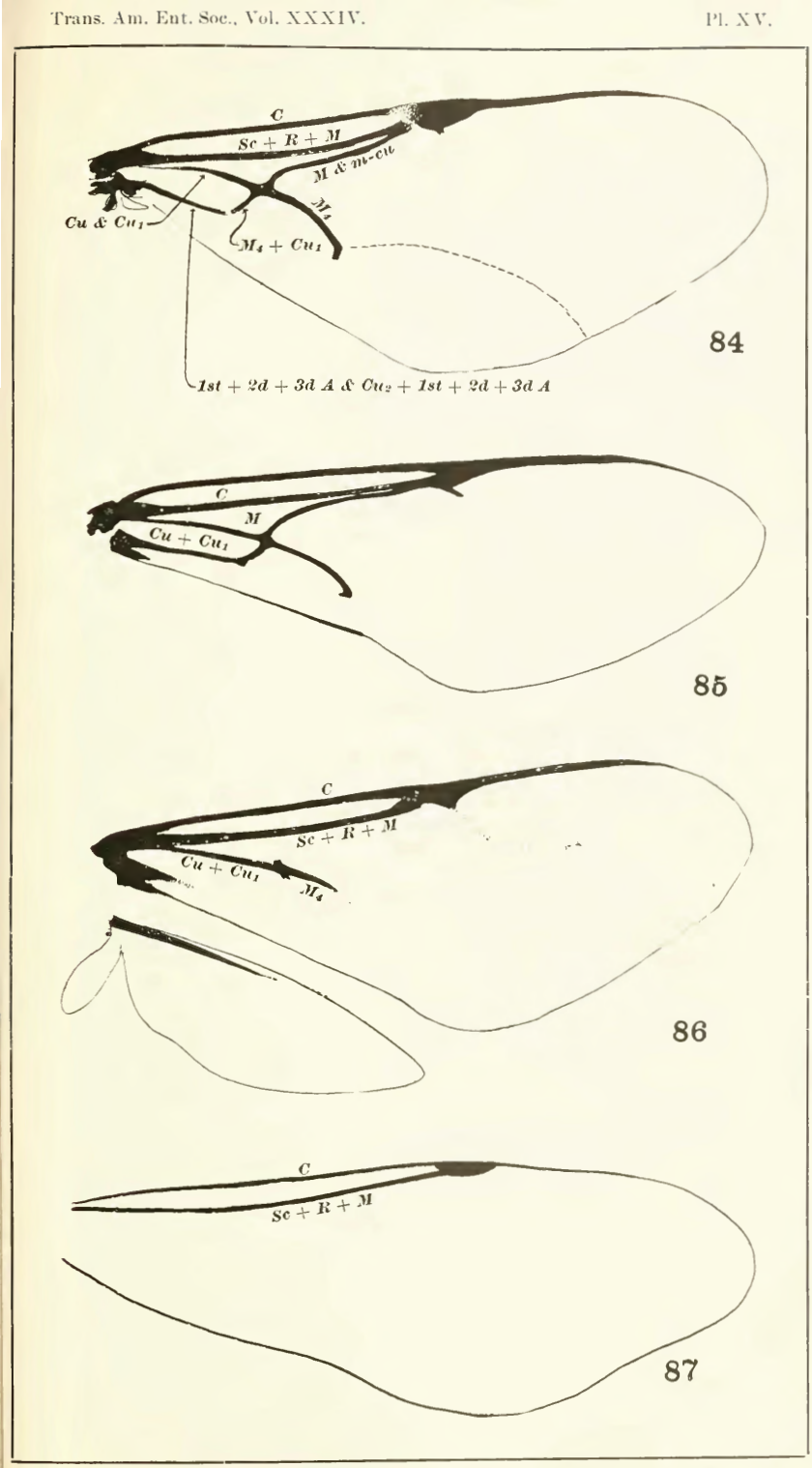

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