6-1-1900

Classification of the Fossorial, Predaceous and Parasitic Wasps, or the Superfamily Vespoidea No.2-4

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CLASSIFICATION OF THE FOSSORIAL, PREDACEOUS AND PARASITIC WASPS, OR THE SUPERFAMILY VESPOIDEA.

BY WILLIAM H. ASHMEAD, ASSISTANT CURATOR, DIVISION OF INSECTS,
U. S. NATIONAL MUSEUM.

(Paper No. 2.—Continued from page 155.)

SUBFAMILY I.—Pepsine.

To this subfamily belong the giants of the family, although many species in it are of moderate or insignificant size. Here belong the "Tarantula Killers," or Pompilids, belonging to the genus *Pepsis*, large, brilliantly-coloured species, often with fiery red wings, or blue or black wings marked with white or red, etc., that prey upon the genuine Tarantulas and other large species of spiders.

The species belonging to this group are at once distinguished from all others, except the *Ageniinae*, by the second ventral segment in both sexes being traversed by a transverse grooved line, impression or emargination. This transverse grooved line, or emargination, is present in no other group, except in the females belonging to the *Ageniinae*, but these are readily distinguished by their smooth hind tibiae, which are always simple, without teeth or spines and without a longitudinal ridge. In the *Pepsine* the hind tibiae in the females are most frequently toothed or serrate, as well as distinctly spinous; but very rarely simple, without teeth or spines, but in the few genera without these characteristic features the hind tibiae have a longitudinal ridge or carina, not possessed by the *Ageniinae*.

Table of Genera.

2. Wings ample, extending far beyond the tip of the abdomen; second cubital cell larger than the third

| Hind tibiae in ♀ strongly serrated; ocelli placed in an obtuse triangle; mandibles bidentate; maxillae normal; hind tibiae in ♂ simple, not serrate, the tarsi compressed, flat, the basal joint usually curved or bent; fourth or fifth ventral segments with long bristles, often in two groups; claws with a tooth before middle... | (1) *Pepsis*, Fabr. |
| Type *P. ruficornis*, Fabr. |
Hind tibiae in ♀ smooth or nearly; ocelli triangularily arranged; mandibles 4 dentate; maxillae at base with two long divergent brushes of pale hairs; claws with a median tooth

beneath........................................(2) Dipogon, Fox.

(Type D. populator, Fox.)

Wings much abbreviated, not extending to tip of abdomen; second cubital cell smaller than the third; submedian cell longer than the median; cubitus in hind wings originating beyond the transverse median nervure; claws with one tooth beneath........................................(3) Sphictostethus, Kohl.

(Type P. Gravesii, Hal.)

3. Submedian cell in front wings not longer than the median or clearly shorter, the transverse median nervure interstitial with the basal nervure, or uniting with the median vein before the origin of the basal nervure..................................................9.

Submedian cell in front wings distinctly longer than the median, the transverse median nervure uniting with the median vein beyond the origin of the basal nervure.

Marginal cell pointed at apex; claws not cleft, but with one tooth beneath; inner angle of first discoidal cell without a glabrous spot at base, or only faintly indicated........7.

Marginal cell broadly rounded, or squarely or obliquely truncate at apex; inner angle of first discoidal cell with a distinct glabrous spot at base (rarely wanting)........4.

4. All claws cleft, or with one or more teeth beneath..........5.

Front claws alone cleft, the others with a tooth

beneath........................................(4) Heteronyx, Sauss.

5. Marginal cell scarcely thrice as long as wide, the first recurrent nervure received by the second cubital cell beyond the middle or towards apex, but considerably before the second transverse cubitus; claws cleft........................................6.

Marginal cell very long, four times, or nearly, longer than wide; first recurrent nervure interstitial, or very nearly, with the second transverse cubitus; inner angle of first discoidal cell usually with a glabrous spot; cubitus in hind wings originating before the transverse median nervure (rarely interstitial).

Claws with one tooth beneath; outer ridge on hind tibiae in ♀ distinctly serrate, the face with short, stiff bristles........................................(5) Mygnimia, Shuckard.

(Type M. flava, Fabr.)
Claws with *two* teeth beneath in ♀ cleft; metanotum with a tubercle on each side of thespiracles, otherwise as in *Mygnumia*............................ (6) Hemipepsis, Dahlb. 
(Type H. capensis, Dahlb.)

Claws with *four* teeth beneath and closely and longly combed with bristles; outer ridge on hind tibiae in ♀ simple, not at all serrate (Africa).......(7) Tetraodontonyx, Ashm., n. g. 
(Type T. rufipes, Ashm., m. s.)

6. Front tibiae spined above, the front tarsi with a long comb, consisting of 7 or 8 long spines; hind tibiae and tarsi armed with large spines. Second and third cubital cells small, the third the smaller of the two..............(8) Schiztonyx, Sauss.

Front tibiae not spined above, the front tarsi armed with short spines; hind tibiae and tarsi armed with small spines arranged in rows; second and third cubital cells large, the third the larger of the two....................(9) Cyphononyx, Dahlb.

7. First recurrent nervure received by the second cubital cell *at*, near, or a little beyond the middle, but rarely as far as its apical third, the second recurrent nervure received by the third cubical cell before its middle................................. .8.

First recurrent nervure received by the second cubital cell *near* its apex, or at or beyond the apical third; submedian cell much longer than the median; wings ferrugino~1J;i..ii11argined with black; cubitus in hind wings interstitial with the transverse median nervure...........................(10) Pallosoma, Lepel. 
(Type P. barbara, Lepel.)

8. Cubitus in hind wings *interstitial* or originating a little before the transverse median nervure; eyes *not*, or only slightly, convergent above; clypeus with the anterior margin more or less distinctly sinuate medially (rarely truncate), the labrum slightly exposed.

Front tarsi *with* a comb; hind tibiae in ♀ strongly serrate, in ♀ with short, indistinct spines; second cubital cell receiving the first recurrent nervure near its apical third...........................(11) Salius Fabricius. 
= Priocnemis, Schiodte (pars).
= Priocnemoides, Sauss.

Front tarsi *without* a comb; hind tibiae in ♀ *not* serrate, or with only slight traces of teeth, but with some short, stout spines, in ♀ *without* or at most with very short, feeble
spines; second cubital cell receiving the first recurrent nervure at or only a little beyond its middle ............... (12) Calopompilus, Ashm., n. g. (Type P. maculipennis, Smith.)

Cubitus in hind wings originating beyond the transverse median nervure, or at least somewhat beyond it, never interstitial; clypeus squarely truncate anteriorly; second cubital cell receiving the first recurrent nervure at or a little before its middle ............... (13) Hemipogonius, Sauss. (Type H. venustipennis, Sauss.)

9. Submedian and median cells in front wings equal the transverse median nervure, interstitial with the basal nervure.

Pronotum as long or longer than the mesonotum .............. 11.
Pronotum distinctly shorter than the mesonotum .............. 10.

10. Eyes convergent above; pronotum anteriorly abruptly truncate; first recurrent nervure joining the second cubital cell a little beyond the middle; claws with a tooth beneath; cubitus in hind wings interstitial ............... (14) Calicurgus, Lepel. (Type C. fasciatellus, Lep.)

11. First recurrent nervure received by the second cubital cell at or near its middle; cubitus in hind wings interstitial, or nearly, with the transverse median nervure .... (15) Ferreolomorpha, Ashm, n. g. (Type Priocnemis pedestris, Smith.)

THE GENUS CATOCALA.

BY G. H. FRENCH, CARBONDALE, ILL.

It is 16 years since the Rev. G. D. Hulst undertook a revision of this genus along the lines of “Structural Characters.” As a new Check List of the moths is to be published soon, it seems proper that another arrangement of the genus be made. The structure of the genitalia as a basis of the separation of the species has been regarded by many eminent lepidopterists as of doubtful value. It is certain that in this genus its use was not warranted by larval characters or field observation. For these reasons the last revision has not been satisfactory to those who were familiar with many species in their native haunts, or who had bred them. The writer does not say, however, that the present revision will be faultless, for as yet too few of the species are known in their adolescent stages.
THE CANADIAN ENTOMOLOGIST.

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N. Illinoensis ♀ may be distinguished from the female of N. Sayi by the form of the pygidium and the joints of antennae. All of the specimens of N. Sayi ♀ have the abdomen four-spotted. In all except two specimens of N. Illinoensis ♀ the abdomen is five-spotted, or six-spotted, when the mark on segment 4 is broken in two. The single specimen of N. parva ♀ has the abdomen eight-spotted. I separate the ♀ of N. Illinoensis from that of N. Sayi by the joints of antennae. In N. parva ♀ the scape is stouter, and the ornaments of abdomen are different.

N. Sayi is closely related to N. Cressonii, differing mainly in size and colour.

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(Paper No. 3.—Continued from page 188.)

SUBFAMILY II.—Ageniinae.

The majority of the species falling in this subfamily are usually smaller and much less conspicuous than those in the other subfamilies, and with totally different habits. None are true diggers, but, on the contrary, build small oblong, or oval, clay cells, beneath the loose bark of old trees, under stones, or in crevices in old stone walls, etc., not unlike some of the Potter wasps (Eumenidae).

The group comes evidently nearest to the Pepsinae, the females having, as in that group, a transverse grooved line, impression or emargination on the second ventral segment. From that group, however, it is at once separated by the difference in the legs, the hind tibiae being smooth, never serrate or spinous, or with a longitudinal ridge, but, at the most, with only a few very minute, scarcely perceptible spines.

These characters readily distinguish the Ageniinae from all other Pompilids.

The beginner at first might possibly confuse some males in this group with some small males belonging in the subfamily Pompilinae, since there is a superficial resemblance in some, but strongly spined legs, always existing in the males of the latter group, ought readily to differentiate the two.
Only five genera fall into this group, distinguishable as follows:

Table of Genera.

Cubitus in hind wings interstitial with the transverse median nervure... 2.
Cubitus in hind wings originating beyond the transverse median nervure... 4.


Mesosternum armed with a large conical tooth or spine just before the middle coxæ.

Second and third cubital cells along the cubitus subequal, the third the broadest; femora in ♂ much thickened... .................. (1) Macromeris, Lepel.

3. Second and third cubital cells equal, or very nearly, united only about as long as the first.

Mandibles simple, edentate; antennæ in ♂ with the flagellar joints pectinate (♀ unknown)............. (2) Clavelia, Lucas.
Mandibles bidentate; antennæ in ♀ normal, the hind coxæ produced anteriorly into a conical tubercle, in ♀ simple; metathorax with a median longitudinal furrow.................... (3) Paragenia, Bingham.

Second cubital cell much shorter than the third; clypeus usually triangular, more or less prominently pointed, subconvex medially; mandibles dentate; antennæ filiform......... (4) Pseudagenia, Kohl.

4. Third cubital cell, along the cubitus, as long or a little longer than the second; claws cleft or with a tooth near the middle, rarely simple; eyes extending to base of mandibles; abdomen with a constriction between segments 1 and 2.

Body variable; head transverse, wider than the thorax; maxillæ in ♀ with a bunch of long, beardlike hairs at base; abdomen ovoid, sessile, subsessile, or briefly petiolate; claws cleft or with a tooth beneath................ (5) Agenia, Schiodte. = Pogonius, Dahlb.

Body very slender; head lenticular; maxillæ in ♀ normal, not bearded; abdomen very long, subcompressed, clavate, the first segment distinctly petiolate; claws simple ................... (6) Stenagenia, Saussure.
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BY WILLIAM H. ASHMEAD, A. M., ASSISTANT CURATOR, DIVISION OF INSECTS, U. S. NATIONAL MUSEUM.

(Paper No. 4.—Continued from Vol. XXXII., 1900, p. 296.)

Subfamily III.—Aporinae (=Pompilinae).

1815. Aporida, Leach, Edinb. Encyc. IX., p. 149.

Pompilus, Fabr., is preoccupied, and the family name Pompilidae must be changed to Ceropalidae, as has been shown recently by Fox (vide Ent. News, Vol. XII., 1901, p. 268). In consequence, my subfamily Pompilinae must be changed to Aporinae.

This subfamily is unquestionably the largest in number of genera and species of any of the groups of the family Ceropalidae (Pompilidae). Most of the species, in comparison with those found in the Pepsinae, are of medium size or small, few attaining much over an inch in length, while the vast majority are much smaller.

All of the species, so far as we know, dig burrows in the ground, in which they store up spiders as food for their young. I suspect, however, that some of the genera, judging from their structural characters and the absence of a tarsal comb, will prove to be inquilinous in the nests of others, as with the Psithyridae, Stelididae and other families in the Hymenoptera.

The characters made use of in my table of subfamilies readily separate the subfamily. The spiny or strongly bristly legs, which are never smooth nor serrate, and the absence of a transverse grooved line or furrow on the second ventral segment separate it from the Pepsinae and the Ageniinae; the antennae being placed higher up on the face, and not low down on or below an imaginary line drawn from the base of the eyes, April, 1901.
or the non-produced clypeus, separate it from the Planicepinae and from males in the Ageniina; while from the Notocyphinae and the Ceropalinae it is separated by the hidden or only partly visible labrum, which is never very large or free, and by other characters.

The Aporinae may be separated into two tribes:

Front wings with three cubital cells, the second and third each receiving a recurrent nervure. Tribe I., Anopliini.
Front wings with only two cubital cells, rarely with only one, the second usually receiving both recurrent nervures, rarely receiving only one—the first; head lenticular, the antennae inserted only slightly above an imaginary line drawn from the base of the eyes. Tribe II., Aporini.

Tribe I.—Anopliini.

Many new genera have been recognized in this tribe, and I have restored many genera suppressed by various authorities, but I believe these may all be readily separated now by the characters made use of in the following table:

Table of Genera.

Cubitus in hind wings originating before the transverse median nervure, the submedian always shorter than the median.................. 2.
Cubitus in hind wings not originating before the transverse median nervure, either interstitial or originating from beyond the transverse median nervure.

Cubitus in hind wings interstitial, or very nearly, with the transverse median nervure........................................... 10.
Cubitus in hind wings originating beyond the transverse median nervure................................................................. 23.

2. Metathorax posteriorly rounded, not impressed, and without a median impressed line or furrow above, or the impressed line very vaguely defined.................................................... 7.
Metathorax posteriorly rather abruptly or obliquely truncate, impressed or emarginate, or with a more or less distinct median impressed line or furrow above; anterior tarsi in ♀ combed.

Pronotum shorter than the mesonotum; eyes extending close to the mandibles; third cubital cell subquadangular or trapezoidal, rarely subtriangular............................... 3.
Pronotum long, as long or a little longer than the mesonotum; eyes not quite extending to base of mandibles, a linear space between; third cubital cell narrowed above or subtriangular;
submedian and median cells equal or nearly; claws in ♀ with a tooth beneath, in ♂ cleft; first joint of flagellum in ♀ not longer than the second, in ♂ shorter... (1) Ferreola, Lepel.
(Type F. algerica, Lepel.)

3. Head viewed from in front not wider than long, usually a little shorter than wide, the eyes not strongly converging above, although usually slightly converging. ........................................ 4.

Head viewed from in front wider than long, the eyes strongly converging above.

Claws in ♀ with a median tooth, in ♂ cleft; first joint of flagellum in ♀ longer than the second, in ♂ not longer, about equal; submedian cell in front wings a little shorter than the median...........(2) Batozonus, Ashm., g. nov.
(Type Pompilus algidns, Smith.)

4. Claws in ♀ with a median tooth beneath, in ♂ cleft. ............ 5.

5. Clypeus in ♀ anteriorly entire; metathorax posteriorly obliquely truncate or more or less impressed; tarsal comb in ♀ long.

Wings black, fuscous or subhyaline; first joint of flagellum in both sexes elongate, longer than the second; basal joint of front tarsi shorter than tibia; abdomen usually marked with white............... (3) Spilopompilus, Ashm., g. nov.
(Type Pompilus biguttulatus, Fabr.)

Wings red or ferruginous, the tips black; first joint of flagellum in ♂ not longer than the second; basal joint of front tarsi longer than tibia; abdomen not marked with white, sericeous............. (4) Paracyphonyx, Magretti.
(Type P. metemmensis, Magr.)

6. Clypeus and labrum with a median sinus anteriorly; pronotum with the hind margin arcuately or very obtusely angularly emarginate.

Abdomen wholly black; second joint of front tarsi less than half the length of the first......(5) Pompilogastra, Ashm., g. nov.
(Type Pompilus aethiops, Cress.)

Abdomen with the second segment marked with red or yellow; second joint of hind tarsi fully half as long as the first................. (14) Arachnophroctonus, Ashm. (part).

7. Metathorax bare or nearly, at least not clothed with a silvery pubescence; claws in ♀ with a median tooth, in ♂ cleft.......8.
Metathorax clothed with a fine, usually dense, silvery pubescence; claws in ♀ cleft, in ♂ with a median tooth.

Submedian and median cells equal, the transverse median nervure interstitial with the basal nervure; third cubital cell large, trapezoidal; mandibles 2-dentate; first joint of flagellum in ♂ as long as the second... (6) Sericopompilus, Ashm., g. nov. (Type Pompilus cinctipes, Cress.)

Submedian cell a little longer than the median; third cubital cell subtriangular; mandibles 3-dentate; first joint of flagellum in ♂ short, shorter than the second................. (7) Nannopompilus, Ashm., g. nov. (Type N. argenteus, Ashm., M. S.)

8. Pronotum normal and always shorter than the mesonotum ...... 9.

Pronotum broad and as long as the mesonotum.

Submedian cell in front wings much longer than the median; third cubital cell large, not or only slightly narrowed above......................... (8) Hypoferreola, Ashm., g. nov. (Type Ferreola cephalotes, Sauss.)

9. Wings red or ferruginous, their tips black; third cubital cell sub-quadrangular or trapezoidal, never distinctly triangular; mandibles 2-dentate, the inner tooth large, acute...... (9) Epizuron, Schiöötde. = Cryptocheilus, Panzer. (Type Pompilus rufipes, L.)

Wings differently coloured, not red, usually fuscous or subfuscous; mandibles in ♀ 3-dentate, the inner tooth small, in ♂ 2-dentate; body marked with yellow or red.......................... (10) Poecilopompilus, Ashm., g. nov. (Type Pompilus navus, Cress.)

10. Metathorax posteriorly rounded, not impressed, and without a distinct median longitudinal impressed line or furrow above, or this line is very vaguely defined....................... . .............. 19.

Metathorax posteriorly truncate, impressed or emarginate, or with a more or less distinct median longitudinal impressed line or furrow above.

Third cubital cell triangular, subtriangular, or at least always strongly narrowed above and sometimes petiolate; claws in ♀ with a median tooth, in ♂ cleft.......................... 16.
Third cubital cell large, trapezoidal, or at least never distinctly triangular nor petiolate. 11.

11. Claws in ♀ with a median tooth, in ♂ cleft; metathorax posteriorly not striate. 12.
   Claws cleft in both sexes; metathorax posteriorly striate. (11) Pseudoferreola, Radoszk.
   (Type P. striata, Radosz.)

12. Transverse median nervure in front wings *interstitial* with the basal nervure, the median and submedian cells of an equal length. 14.
   Transverse median nervure in front wings not *interstitial* with the basal nervure, the submedian cell more or less distinctly the longer. 13.

13. Clypeus anteriorly truncate or very slightly rounded, *without* a median sinus; body black or blue-black; pronotum posteriorly obtusely angularly emarginate, first joint of flagellum in ♀ longer than the second, in ♂ not or scarcely longer than the second, but at least thrice as long as thick; tarsal comb short and sparse. (12) Pycnopompilus, Ashm., g. nov. (Type Pompilus scelestus, Cress.)

14. Clypeus in ♀ with a median sinus, in ♂ simple, the labrum slightly exposed. 15.
   Clypeus in both sexes truncate or slightly rounded, *without* a median sinus.
   Body black or blue-black, the abdomen partly red; first joint of flagellum very elongate, much longer than the second; posterior face of metathorax concave, the upper and lower angles obtusely dentate; third cubital cell very large, the second quadrangular. (Siam) (13) Tachypompilus, Ashm., g. nov. (Type T. Abbotti, Ashm., M. S.)
   Head and thorax black, the abdomen towards base marked with red; posterior face of metathorax only slightly impressed; third cubital cell triangular. (21) Entypus, Dahlb. (part).

15. Abdomen red or marked with red or yellow, rarely wholly black; first joint of flagellum in ♀ elongate, longer than the second; in ♂ short, never longer than the second. (14) Arachnophroctonus, Ashm., g. nov. (Type Pompilus ferrugineus, Say.)
16. Third cubital cell small, distinctly triangular, and either petiolate or
subpetiolate, rarely elliptical

Third cubital cell larger, triangular or subtriangular, but never
petiolate, the marginal cell obliquely truncately pointed at
apex.

17. Transverse median nervure in front wings interstitial with or originating
a little before the basal nervure; pronotum as long or nearly as long
as the mesonotum.

Pronotum with the hind margin in ♀ obtusely angularly
emarginate, in ♂ arcuatey emarginate; first joint of flagellum
in ♀ elongate, much longer than the second, in ♂ not longer
than the second

(15) Schiztosalius, Sauss.
(Type S. Elliotii, Sauss.)

Pronotum with the hind margin in both sexes arcuatey
emarginate; first joint of flagellum in ♀ short, not longer
than the second, in ♂ shorter than the
second

(16) Sophropompilus, Ashm., g. nov.
(Type Pompilus ingenuus, Cress.)

18. Transverse median nervure in front wings not interstitial with the basal
nervure, the submedian cell most frequently distinctly longer than
the median.

Transverse median nervure in front wings interstitial with the basal
nervure, the submedian and median cells equal.

Pronotum shorter than the mesonotum, with the hind margin
obtusely angularly emarginate (rarely arcuate); first joint of
flagellum in ♀ elongate, much longer than the second, in ♂
not longer than the second

(17) Pompiliodes, Radoszk.
(Type P. unicolor, Radosz.)

19. Marginal cell not elliptical, but triangularly pointed at apex; claws in
♀ with a median tooth beneath, in ♂ cleft.

Marginal cell elliptical; claws cleft in both sexes.

Second and third cubital cells longer than wide, narrowed above;
first recurrent nervure interstitial with the second transverse
cubitus, the second recurrent nervure joining the third cubital
cell a little beyond the
middle

(18) Lophopompilus Radoszkowski.*
(Type Pompilus grandis, Eversm.)

*I do not know this genus; judging from the shape of the marginal cell, it ma
probably prove to belong to the Pepsina.
20. Third cubital cell trapezoidal or, at most, subtriangular, never distinctly triangular or petiolate; abdomen black. 

21. Pronotum hardly shorter than the mesonotum, the hind margin acutely emarginate; first joint of flagellum in ♀ longer than the second, in ♂ not longer than the second; tarsal comb not long. (19) Pompilinus, Ashm., g. nov. (Type Pompilus cylindricus, Cress.)

22. Pronotum shorter than the mesonotum, the hind margin obtusely angularly emarginate; first joint of flagellum in ♀ very elongate, longer than the second, in ♂ about equal to the second; tarsal comb long, flexible. (20) Agenioideus, Ashm., g. n. (part).

23. Metathorax posteriorly rounded, neither impressed nor obliquely truncate, and usually without a distinct median longitudinal impressed line or furrow above, the latter, if present, is very vaguely defined; pronotum rarely much lengthened. (21) Entypus Dahlbom. (Type E. ochraceus, Dahlb.)

24. Front tarsi in ♀ without a distinct long comb, at most with a scopa of short stiff bristles beneath and a few short bristles at apex of the joints. 

25. Submedian and median cells in front wings equal, the transverse median nervure being interstitial with the median nervure. 

26. Third cubital cell trapezoidal, usually as large or nearly as the second.
Third cubital cell in front wings triangular or subtriangular, smaller than the second and sometimes petiolate. 27.

27. Body wholly black, but more or less distinctly clothed with a silvery or sericeous pubescence; first and second joints of flagellum in both sexes equal or very nearly. (22) Anoplius, Lepel. (Dufour).

(Type Pompilus nigerrimus, Scopoli.)

Body not wholly black and not clothed with a silvery pubescence, the abdomen smooth, shining, always red at base; first joint of flagellum in ♀ longer than the second, in ♂ about equal. (24) Arachnophila, Ashm., g. nov.

(Type Pompilus divisus, Cress.)

28. Body wholly black, usually more or less clothed with a silvery pubescence; first joint of flagellum in ♀ longer than the second, in ♂ not longer than the second. (23) Aporoideus, Ashm., g. nov.

(Type Pompilus sericeus, V. de Lind.)

29. Pronotum with the hind margin obtusely angularly emarginate; first joint of flagellum in ♀ always longer than the second, in ♂ sometimes shorter. 31. Pronotum with the hind margin arcuately emarginate. 30.


(Type Pompilus cylindricus, Cress.)

31. Body black and usually with a more or less distinct silvery pubescence, especially in males; abdomen black, immaculate; third cubital cell triangular and often petiolate or subpetiolate. (22) Anoplius, Lepel. (Dufour.)

(Type Pompilus nigerrimus, Scopoli.)

Head and thorax usually black, but without a silvery pubescence, the abdomen smooth and shining, always red basally; third cubital cell variable, sometimes triangular and petiolate. (24) Arachnophila, Ashm., g. nov.

32. Pronotum with the hind margin obtusely angularly emarginate. 33. Pronotum with the hind margin arcuately emarginate.

33. Submedian cell in front wings a little longer than the median; third cubital cell trapezoidal or narrowed above, never distinctly triangular or petiolate; mandibles in ♀ 3-dentate, in ♂ 2-dentate.
Third cubital cell usually a little smaller than the second; first joint of flagellum in ♂ longer than the second, in ♀ not longer than the second, about thrice as long as thick; claws in ♀ with a median tooth, in ♂ cleft. (25) Aphiloctenus, Ashm., g. nov. (Type Pompilus virginiensis, Cress.)

Third cubital cell larger than the second; first joint of flagellum in ♀ elongate, nearly as long as 2 and 3 united, in ♀ not or scarcely longer than the second, but about four times as long as thick; claws cleft in both sexes. (26) Hemisalius, Sauss. (Type H. albistylus, Sauss.)

Tribe II.—Aporini.

The front wings with one or two cubital cells, never three as in the tribe Pompilini, and the slight difference in the insertion of the antennæ, will readily distinguish the tribe.

The group comes quite close to the subfamily Planicpinæ, in which are found forms with only two cubital cells in the front wings, so that the closest attention must be given to the characters used in separating the subfamilies or the student will go astray and confuse some of these forms with genuine Aporini.

Table of Genera.

1. Metathorax posteriorly rounded, the hind angles unarmed. .................. 2.
2. Metathorax posteriorly truncate, depressed or emarginate, the hind angles more or less distinctly produced into conical teeth or spines.
   Cubitus in hind wings usually interstitial or nearly; tarsal comb present; claws with teeth; mandibles 3-dentate. .................. (1) Aporus, Spinola. (Type A. unicolor, Spin.)
3. Cubitus in hind wings originating beyond the transverse median nervure. .................. 4.
4. Cubitus in hind wings interstitial with the transverse median nervure. .................. 3.
5. Transverse median nervure in front wings interstitial with the basal nervure; tarsal comb in ♀ present; claws toothed and combed; mandibles 2-dentate. .................. (2) Evagetes, Lepeletier. (Type Pompilus bicolor, Fabr.)
6. Transverse median nervure in front wings uniting with the median vein beyond the origin of the basal nervure. .................. 5.
Transverse median nervure in front wings interstitial or uniting with the 
median vein before the origin of the basal nervure............. 6.

5. Hind margin of pronotum arcuate; antennæ rather thick; front tarsi with a comb; claws in♀ with a tooth beneath, in♂ cleft; second cubital cell receiving one recurrent nervure, the second recurrent joining the cubitus beyond the second transverse cubitus.........................(3) Actenopoda, Ashm., g. n. 
(Type A. Rileyi, Ashm., MS.)

6. Front tarsi combed; claws cleft, without or, at most, with only a rudimentary comb.............................................. 8.

Front tarsi not combed; claws with a tooth and combed........... 7.

7. Pronotum not large, the hind margin obtusely angularly emarginate; second cubital cell triangular ..............(4) Xenaporus, Ashm., g. n. 
(Type Pompilus amoenus, Klug.)

8. Front wings with two cubital cells; hind margin of the pronotum obtusely angularly emarginate........(5) Gonaporus, Ashm., g. nov. 
(Type Pompilus gracilis, Klug.)

Front wings with only one cubital cell; hind margin of the pronotum arcuate.........................(6) Aporinus, Ashm., g. nov. 
(Kohls gr. 17.)

NEW COCCIDÆ FROM THE ARGENTINE REPUBLIC AND PARAGUAY.

BY T. D. A. COCKERELL, E. LAS VEGAS, N. M.

The Coccidæ herein described were collected by Professor L. Bruner in 1897 and 1898. I examined the collection with more than ordinary interest, as practically nothing was known of the Coccidæ of the Argentine or Paraguay. The flora of the southern part of South America resembles in many respects that of the arid region of North America, and it was therefore not wholly unexpected that this resemblance should extend to the Coccidæ. The collection is too small to show how far such a resemblance may extend, but the species of Orthesia and Lichtensia, at least, are entirely representative of North American types.

1.) Orthesia ultima, n. sp.—♀. Waxy lamellæ in two dorsal series, with a deep median sulcus, and the usual lateral series; the dark surface of the back is narrowly exposed between the dorsal and lateral series; anterior lamellæ of the dorsal series thick, prolonged over the head, but not greatly produced nor divergent; posterior lateral lamellæ narrow and April, 1902.