

DESCRIPTIONS OF NEW HYMENOPTERA, NO. 6.

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In this paper where both sexes of a species are described, that last described is the allotype.

Comparative measurements where given in figures were made with the Zeiss binocular microscope equipped with No. 2 eyepieces and the a_3 objective and an eyepiece micrometer.

Superfamily APOIDEA.

EUGLOSSA SURINAMENSIS Linnæus.

A single male of this species was taken at Brownsville, Texas, March 23, 1908, on *Opuntia lindheimeri* (Jones and Pratt coll.). This is, so far as I know, the first record of a species of this family in the United States.

PROTANDRENA SWENKI, new species.

Female.—Length about 6 mm. Black, with a small yellow spot on middle of upper edge of clypeus; front and middle knees, tubercles and a spot on tegulæ, yellow; face below antennæ coarsely punctured, the punctures separated by more than a puncture width; the punctures on the clypeus coarser than on sides of face; above insertion of antennæ the punctures finer and closer; process of labrum subtruncate apically and the sides straight; flagellum beyond basal joints fulvous, somewhat darkened above; mesoscutum and scutellum coarsely and closely punctured, punctures on disk of mesoscutum more sparse than elsewhere; on scutellum coarser than on scutum; metanotum rugoso-punctate; basal triangle of propodeum irregularly rugulose; sides of propodeum punctured; truncation finely rugoso-punctate; wings dusky, stigma and veins light brown; legs dark brown; abdomen punctured, segments 1–3 closely and coarsely punctured, segment 4 obliquely so and more shiny than basal segments; segment 5 about as 4; apical margins of segments 1–4 broadly depressed, brownish, finely and closely punctured, the punctures crowded.

Type-locality.—West Point, Nebraska.

Type.—Cat. No. 15299, U.S.N.M.

One specimen taken on September 6, 1912, flying around *Physalis* and other low weeds. (J. C. Crawford, collector.)

This species is the size of *P. heteromorpha* Cockerell, but that species is more shining, has the mandibles with a yellow mark, a large clypeal mark, process of labrum broadly rounded apically and the sides convex; the punctures of the mesonotum fine, of the abdomen somewhat sparser and with the sculpture of the third segment like that of 4 and 5 rather than 1 and 2.

This species is named in honor of Prof. Myron H. Swenk, in recognition of the fine work which he is doing on the bees of Nebraska.

AUGOCHLORA MACULIVENTRIS, new species.

Female.—Length about 6 mm. Head and thorax green, abdomen brown; face with white, subappressed pubescence, closely and very finely punctured above antennæ, below more like the fine reticulations and on clypeus and supraclypeal area more so than on sides of face; supraclypeal area with a median smoother area; clypeus along anterior portion with a yellowish mark which medially extends upward to a point; the maculate portion with large punctures, the rest reticulate and with a few fine scattered setigerous punctures; mesoscutum finely closely punctured but almost concealed by the short erect subappressed yellowish pubescence; tubercles yellow; tegulæ testaceous; scutellum and metanotum with pubescence similar to that on mesoscutum; dorsal surface of propodeum long, angularly separated from sides and truncation and with very fine thimble-like punctures, the posterior margin medially notched; this notch at the head of the furrow on posterior face; lateral angles of truncation well rounded; wings slightly dusky and with the apical margin distinctly darkened; stigma light brown, veins lighter; second submarginal slightly shorter than the third, receiving the recurrent nervure just before apex, and narrowed almost one-half anteriorly; mesopleuræ with sculpture similar to that on propodeum; legs brown, anterior tibiæ mostly yellow and with a narrow darkened stripe; inner hind spur with about 4 long teeth; abdomen finely sericeous; second segment with a triangular spot at base on each lateral margin, the spot extending along lateral margin for a greater distance than the width at base; third segment with a transverse spot at each side almost meeting medially, fourth and fifth segments with complete bands, that on fifth segment often concealed by the retraction of the segment.

Habitat.—Coroico, Yungas, Bolivia.

Type.—Cat. No. 15317, U.S.N.M.

Described from five females, some of which have the abdomen extended sufficient to show the band on segment 5 and others have it completely concealed.

In Vachal's tables ¹ this runs to *trinax* which is said to have all the spots on the abdomen large, almost meeting, the truncation of propodeum not rounded laterally and the wings dirty hyaline. He also mentions maculations only on segments 2 and 3; but as he also says the same for *A. callichroma* Cockerell, which in the original description mentions marks on segments 2-5, this may be a typographical error.

AUGOCHLORA PURA (Say).

Halictus astios VACHAL.

Augochlora banksiella COCKERELL.

Mr. Charles Robertson has well redescribed this species and given the earlier synonymy ² and there can be no doubt that he is correct. Specimens from the same set of cells taken at Plummer's Island, Maryland, are either entirely blue-green or distinctly brassy, and this latter is the individual variation described by Professor Cockerell. What Mr. Vachal had under the name *pura* in his extensive table ³ is undoubtedly in need of a new name.

The minutely truncate marginal cell, the keel or tooth on the first ventral segment of the female and the falcate inner hind spur on the posterior tibiæ characterize the species of this group.

In *A. pura* the keel is subtriangular in outline and small.

Superfamily SERPHIDOIDEA.

TELENOMUS GONIOPIIS, new species.

Female.—Length about 1.12 mm. Black, antennæ and femora light brown; coxæ dark brown, the trochanters, tibiæ and tarsi testaceous, the tarsi lighter than the tibiæ; head transverse, twice as wide as thick (viewed from above) medially; head excavated behind and from above subreniform in outline; first joint of funicle somewhat longer than broad, shorter than the pedicel; second joint of funicle subquadrate, joints 3 and 4 transverse, club composed of the last five joints; vertex finely reticulated; in front of anterior ocellus, smooth, polished; inner orbits just above level of insertion of antennæ with a small area which is reticulated, rest of face smooth, polished; meso-scutum finely reticulated, dull; scutellum, except base, smooth, polished; metanotum rugose; wings hyaline, veins pallid; first abdominal segment with a row of pits at base; second segment with a similar row and back of this medially a few very faint lines; second segment almost twice as long as the width at apex.

¹ Misc. Ent., vol. 12, 1904, pp. 115 *et seq.*

² Trans. Acad. Sci. St. Louis, vol. 7, No. 14, 1897, pp. 323-324.

³ Misc. Ent., vol. 19, 1911, pp. 9-24 and 41-50.

Male.—Length about 1 mm. Head and thorax above reddish brown, abdomen dark brown; lower part of face testaceous shading into brown above; pleuræ dark honey color; antennæ testaceous, flagellum above brownish; legs including coxæ testaceous; otherwise very similar to the female.

Habitat.—Plummer's Island, Maryland.

A large series (about 70) of which only eight are males, reared from the eggs of *Goniops chrysocoma*, July 11, 1910, by Mr. W. L. McAtee.

Type.—Cat. No. 15417, U.S.N.M.

TELENOMUS LATISULCUS, new species.

Female.—Length about 2 mm. Black, scape, pedicel, joints of funicle and legs, except coxæ, reddish-testaceous; rest of antennæ brown, the transition gradual; face with three carinæ running from mouth part to eyes, the lower one forming the border of the face, the two upper ones with a furrow between them; orbits carinate, the posterior ones more distinctly; face medially transversely, carinate, the carinæ less numerous and less distinct toward eyes; first joint of funicle longer than pedicel; club 6-jointed; mesoscutum irregularly reticulately rugose, toward rear the rugæ becoming longitudinal; scutellum separated from the scutum by a deep fissure; scutellum with sculpture similar to that on scutum, at apex with a row of pits; metanotum covered by a row of pits; marginal vein short, about half as long as the stigmal and about one-third as long as the postmarginal; first abdominal segment longitudinally carinate and with a basal row of pits; second segment carinate for about three-fourths its length and with a basal row of pits; second segment wider than long (about as 26 : 19).

Male.—Unknown.

Habitat.—Taihoku, Formosa.

Bred from the eggs of *Biprorulus bibax* by T. Shiraki and sent under his No. 107.

Type.—Cat. No. 15104, U.S.N.M.

Superfamily CYNIPOIDEA.

GANASPIS HOOKERI, new species.

Female.—Length about 1.25 mm. Black or brownish-black, the abdomen more distinctly brownish, becoming lighter ventrad; legs, including coxæ, flavous; mandibles testaceous with apices dark; antennæ flavous with the last five joints dark; third joint of antennæ fully as long as scape, following four joints submoniliform, eighth joint somewhat enlarged, apical five joints forming the club; head and thorax smooth, polished; elevation of scutellum narrow, area surrounding elevation coarsely roughened; propodeum medially excavate,

the excavation bounded on each side by a carinate ridge; wings hyaline, veins light honey color.

Habitat.—Mayaguez, Porto Rico.

Three females with the additional data, No. 5064, bred from the mango fruit fly known as "the jobo," September 5, 1912. (C. W. Hooker, collector.)

Type.—Cat. No. 15318, U.S.N.M.

In color this species resembles *G. iridipennis* Ashmead, but in that species the elevation of the scutellum is broad and each cheek has a vertical carina.

The species is named after the collector.

Superfamily CHALCIDOIDEA.

Family CALLIMOMIDÆ.

PODAGRION SHIRAKII, new species.

Female.—Length about 2.75 mm.; ovipositor about 3.75 mm. Green; similar to *repens* Motschulsky but with coarser sculpture; propodeum with an inverted V-shaped carina and with thimble-like punctures; antennæ testaceous, with one ring joint, the first joint of the funicle longer than the pedicel; the club moderately enlarged; metapleuræ with the disk shiny, with a few impressed lines visible only under high magnification; front and middle legs testaceous, more or less infuscated and the coxæ with some green at bases; hind coxæ as long as their femora, green; hind femora outwardly green, with about 7 short teeth, the two apical ones the longest; rest of hind legs testaceous; abdomen subsessile.

Male.—(The abdomen and the apical joints of the antennæ missing.) Similar to the female in structure.

Habitat.—Taihoku, Formosa.

Specimens reared from the egg masses of *Paratenodera aridifolia* by Prof. T. Shiraki (after whom the species is named) and sent under his No. 109.

Type.—Cat. No. 15089, U.S.N.M.

P. repens Motschulsky has the teeth on the hind femora long and the whole of the metapleuræ distinctly sculptured with parallel rugulæ.

Family EUPELMIDÆ.

BRUCHOCIDA, new genus.

Belongs to the tribe Eupelmini as defined by Ashmead; mandibles 3-toothed; maxillary palpi with the apical joint greatly enlarged and flattened in the female and slightly so in the male; eyes with short inconspicuous hairs; in the female the marginal vein about one-half as long as the submarginal, about twice as long as the postmarginal;

the stigmal vein about as long as the postmarginal; in the male the postmarginal somewhat longer than the stigmal; hind legs with one apical spur; pubescence in female flattened, scale-like, in the male normal; axillæ at base not widely separated; lateral ocelli somewhat more than the diameter of an ocellus from the eye margin; in the female the first four abdominal segments deeply incised medially; in the male, the basal segment only; antennæ 13-jointed with a subquadrate ring joint; the three apical joints forming a club distinctly enlarged in the female and slightly in the male; ovipositor in the female exerted.

Type of the genus.—*Bruchocida vuilleti* Crawford.

In Doctor Ashmead's classification of this group¹ this genus runs to couplet No. 19 and runs out, since it has segments 1-4 of the abdomen incised apically. The genus can be recognized by this, by the swollen apical joint of the maxillary palpi and in the female by the appressed pubescence.

BRUCHOCIDA VUILLETI, new species.

Female.—Length about 3 mm.; sheaths of ovipositor about 0.75 mm. Green with bronzy tints; the head and thorax with thimble-like punctures, where coarsest somewhat resembling reticulations by carinæ; those at rear of mesopleuræ coarse and deep, on disk of mesopleuræ very fine, anteriorly somewhat coarser; scape testaceous, pedicel greenish, rest of antennæ dark brown; first joint of funicle about one and one-half times as long as pedicel; the following joints of funicle successively decreasing in length, the last subquadrate; sides of abdominal segments reticulate-punctate; dorsal surface finely reticulated on segments 1-4; segment 5 reticulate-punctate; legs reddish, coxæ green, tarsi whitish, wings slightly dusky, hairs on wings all dark.

Male.—Length about 2.25 mm. Green with some brassy tints; head and thorax reticulate-punctate, the scutellum reticulate; antennæ more elongate than in the female; scape testaceous, pedicel brown with a small green spot above; rest of antennæ dark brown; wings not as dusky as in female nor as distinctly hairy, but all hairs dark colored; abdomen finely reticulated; coxæ green, front and middle femora æneous with greenish reflections posteriorly; hind femora green; tibiæ brown, with lighter colored bases and apices; tarsi whitish.

Habitat.—Koulikoro, Haut Senegal-Niger.

Described from four females and two males reared from *Bruchus quadrimaculatus* by Mr. J. Vuillet, after whom the species is named, and transmitted by Mr. A. Vuillet.

Type.—Cat. No. 15300, U.S.N.M.

¹ Mem. Carnegie Mus., vol. 1, 1904, p. 287 *et seq.*

BRUCHOCIDA ORIENTALIS, new species.

Female.—Length about 4 mm.; sheaths of ovipositor exposed 1 mm. Bronzy, with tints of green, the scape of antennæ reddish, pedicel green, rest of antennæ dark brown; first joint of funicle about one and one-half times as long as the pedicel, the following joints successively decreasing in length, the last somewhat longer than broad; very similar in sculpture to *B. vuilleti*; wings with white hair as far out as the apex of submarginal vein, beyond this the hairs dark, longer and more numerous than in *vuilleti* and the wings somewhat infuscated; front and hind coxæ bronzy; front and middle legs and middle coxæ reddish; hind legs darker with bronzy tints; tarsi white.

Three females Bangalore, India, reared from *Bruchus chinensis*. (L. C. Coleman, collector.)

Type.—Cat. No. 15301, U.S.N.M.

Easily separated from *B. vuilleti* by the color and the white hairs on the base of the wings.

TANAOSTIGMODES PORTORICENSIS, new species.

Female.—Length about 1.8 mm. Deep brown or blackish-brown; face with large punctures separated from each other by somewhat less than the width of a puncture; scape yellowish, pedicel light brown, rest of antennæ dark brown; first joint of funicle longer than the pedicel; extreme lateral edges of mesoscutum and prepectus somewhat lighter than rest of mesoscutum; parapsidal furrows indistinct except from point of juncture to apex of scutum; anterior of the furrows the surface very finely almost transversely rugulose; back of them the rugulæ irregular appearing almost as very fine crowded punctures or thimble-like punctures; axillæ with sculpture similar to that on rear of scutum but punctures in the outer portion much finer; base of scutellum with similar sculpture, rest with somewhat finer and longitudinally elongate sculpture making them appear as if in rows and the surface therefore somewhat longitudinally rugulose, especially medially; femora, except apices, brown; rest of legs yellowish; wings hyaline, veins brown, the postmarginal and stigmal subequal in length and shorter than the marginal.

Male.—Length about 1.6 mm. Similar to the female but the face below the antennæ medially about the color of the prepectus; joints of funicle (1-6) produced on one side, the first the most and the rest successively less so that the fifth and sixth are very slightly so; joints of funicle clothed with long whitish hairs; veins of wings yellowish.

Habitat.—Mayaguez, Porto Rico.

Type.—Cat. No. 15315, U.S.N.M.

Three females and one male with the additional data I. 27, 1910, and the number H 1623. (C. W. Hooker, collector.)

This species is the color of *T. tychei* Ashmead, but that species has no large punctures on the face; *T. mayri* Ashmead from Grenada described from the male apparently differs in having the face and pleuræ largely brownish-yellow and no mention is made of the excision of the sixth joint of the funicle and the funicle is said to have dark hairs.

COCCIDOXENUS, new genus.

Mandibles with a sharp tooth and a broad one at apex; the genus runs to couplet 10 in Ashmead's Classification of the chalcid flies in the tribe Ectromini; head thin, the eyes touching the posterior margin; eyes large, prominent, converging above, the lateral ocelli touching eye margins and separated from each other by about the diameter of one ocellus; front ocellus about five or six times its own diameter anterior of the others and not its own diameter from the eye margin on either side of it; antennæ in the female inserted a little above the mouth parts, but still below the level of the eyes, in the

male inserted slightly above the level of the eyes; in the female the funicle 6-jointed, one ring joint, club 3-jointed, the component parts of the club distinct (see fig. 1); in the male the funicle 6-jointed, the joints of the funicle elongate and with a whorl of hairs near base and one near apex; vertex carinate; axillæ not

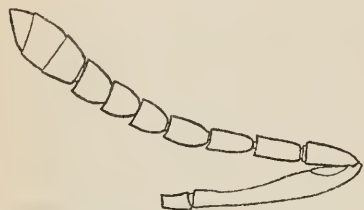


FIG. 1.—COCCIDOXENUS PORTORICENSIS.
OUTLINE OF ANTENNÆ OF FEMALE.

quite meeting medially; hind tibiæ with two apical spurs; marginal vein almost punctiform, the postmarginal longer, the stigmal longer than the postmarginal.

This genus differs from *Anagyryrus* by the scape not being swollen, the front narrow with the lateral ocelli touching eye margins, etc.; from *Taftia* by the narrow front with the lateral ocelli touching eye margins, the antennal fossa not carinate above, the shorter non-curved stigmal vein, etc.; from *Anusia* by the scape not swollen, the funicle not compressed, the axillæ not meeting medially, etc.

Type of the genus—*Coccidoxenus portoricensis* Crawford.

COCCIDOXENUS PORTORICENSIS, new species.

Female.—Length about 2 mm. Head greenish, with some purple reflections, mesoscutum purplish, scutellum and axillæ aeneous, abdomen basally bluish, rest of abdomen aeneous with greenish tints; face closely and minutely punctured, under a low magnification appearing as finely reticulately lineolate; face along inner orbits with a single row of punctures; antennæ reddish-testaceous, with conspicuous black hairs, the club black; mesoscutum finely transversely

lineolate; scutellum finely reticulately lineolate; both with setigerous punctures bearing long black hairs; legs yellowish, middle and hind coxæ brown; wings hyaline; sheaths of ovipositor extending slightly beyond tip of abdomen.

Male.—Length about 1.15 mm. Similar to the female, but mostly aeneous, the head greenish-blue, the pleuræ and the base of the abdomen with some greenish reflections; scape testaceous, rest of antennæ light brown.

Habitat.—San Juan, Porto Rico.

Many specimens reared from "the wax scale" by W. V. Tower.

Type.—Cat. No. 15093, U.S.N.M.

ANASTATUS FORMOSANUS, new species.

Female.—Length about 2.75 mm. Head and thorax varying tints of blue and green, with the portions of the mesoscutum with thimble-like punctures bronzy; face roughened, around ocellar triangle finely reticulately lineolate; ocelli in an equilateral triangle, the lateral ocelli about half the diameter of an ocellus from the eye margin; scape reddish, pedicel green, rest of antennæ dark brown; first joint of funicle longer than the pedicel; scutellum, axillæ, and anterior elevated median portion of mesoscutum with thimble-like punctures, rest of mesoscutum finely lineolate, the lines becoming obsolete toward rear; median portion with thimble-like punctures fully three times as long as from apex of this area to the tip of the mesoscutum; wings dusky with a light stripe near base and one about the middle of the marginal vein; marginal vein about twice as long as the postmarginal vein, this about twice as long as the stigmal; legs brown, with metallic tints and the coxæ green or bluish, the middle tibiæ whitish; abdomen finely reticulated, with a whitish band near base.

Male.—Length about 2 mm. Green, the scape and pedicel testaceous, rest of antennæ brown; pedicel not longer than broad; head and mesoscutum reticulately lineolate, the latter without thimble-like punctures; wings hyaline, marginal vein only slightly longer than the postmarginal; stigmal about half as long as the postmarginal; femora and hind tibiæ brown with green tints, front and middle tibiæ and all tarsi whitish; abdomen aeneous.

Habitat.—Taihoku, Formosa.

Bred from the eggs of *Biprorulus bibax* June, 1911, by T. Shiraki and sent by him under his No. 106 (female) and 108 (male).

Type.—Cat. No. 15103, U.S.N.M.

This species somewhat resembles *A. japonicus* Ashmead, but that species has, in the female, the portion of the mesoscutum with thimble-like punctures only about twice as long as the portion to the rear of it and the abdomen without the transverse band; in the male the scape is metallic and the middle tibiæ are dark.

Family PTEROMALIDÆ.

BRUCHOBIUS LATICEPS Ashmead.

Female.—Type, length about 2.5 mm. Green, with brassy tinges; head wider than thorax, head and thorax, including pleuræ and propodeum, with coarse thimble-like punctures, those on the mesonotum so coarse as to somewhat resemble irregular reticulations; antennæ 13-jointed, honey color, with three ring joints, the third subquadrate; first joint of funicle almost twice as long as pedicel, the following joints almost subequal in length, the second joint of funicle about two-thirds as long as first; pronotum sharply truncate anteriorly; propodeum completely covered with thimble-like punctures, with lateral folds, the spiracles large, elongate-ovate, situated basad; marginal vein short, about one-third as long as submarginal; postmarginal slightly longer than marginal; stigmal and marginal subequal in length; femora and bases of tibiæ reddish-honey color; rest of tibiæ and tarsi whitish; abdomen about as long as head and thorax combined.

Male.—Length about 1.75 mm. Similar to the female; antennæ with two ring joints, the third being elongated into a joint of the funicle, being as long as the pedicel, but not as long as the following joint of the funicle; abdomen with a large basal white spot.

The type material consists of four females and four males and is labeled "Washington, D. C., Nov. 12, 1896;" bred from *Bruchus quadrimaculatus*. (F. C. Pratt, collector.)

There are other specimens with the same record which were not included in the type material, and one of these on dissection shows the right mandible to be 4-toothed and the left 3-toothed.

BRUCHOBIUS COLEMANI, new species.

Female.—Length about 2.5 mm. Similar in color and sculpture to *B. laticeps* Ashmead, but the third ring joint transverse; marginal vein over half as long as the submarginal; postmarginal shorter than the marginal (about as 12:17); stigmal shorter than postmarginal (about as 8:12); stigmal knob enlarged; femora dark, the hind femora mostly greenish anteriorly.

Male.—Length about 2 mm. Similar to the female, the antennæ with two ring joints, the scape and pedicel reddish-honey color, funicle somewhat lighter, club darker; first joint of funicle as long as the second; legs reddish-honey color; hind femora somewhat darkened and with a small spot with metallic reflections; abdomen no longer than propodeum.

Habitat.—Bangalore, Mysore, India.

Type.—Cat. No. 15302, U.S.N.M.

Described from six females and four males from a series from *Bruchus chinensis*. (L. C. Coleman, collector.)

In this species also the right mandible is 4-toothed and the left 3-toothed.

ZACALOCHLORA, new genus.

Belongs to the tribe Rhaphitellini as defined by Ashmead; right mandible 4-toothed, left mandible 3-toothed, antennæ inserted above the level of the lower eye margins, 13 jointed, with three ring joints, the third subquadrate, the last three joints forming a club which is slightly enlarged; pronotum sharply angulated anteriorly; scutellum without a transverse line; propodeum with a median carina and a very short neck; lateral folds and spiracular sulci present; spiracles oval; marginal and postmarginal veins subequal in length, stigmal shorter.

Type of the genus.—*Zacalochlora milleri* Crawford.

In Doctor Ashmead's tables this genus runs to *Mormoniella*, which has two ring joints, the mandibles 4 and 3 toothed, and belongs to the Eutelini, where it occurs under the name *Nasonia*.

ZACALOCHLORA MILLERI, new species.

Female.—Length about 3 mm. Coppery green, head and thorax, including mesopleuræ and propodeum between lateral folds, with thimble-like punctures; pedicel longer than first joint of funicle; metapleuræ smooth; propodeum with a basal row of pits and a row separating the neck from the rest of the propodeum; propodeum laterad of the lateral folds smooth; wings hyaline; legs reddish-honey color; abdomen longer than the head and thorax combined.

Male.—Unknown.

Type-locality.—Yreka, California.

Type.—Cat. No. 15316, U.S.N.M.

Eight specimens received from the Bureau of Entomology, United States Department of Agriculture, with the record "Hopkins, U. S., No. 11413c, J. M. Miller, collector." This species is named after the collector.

TRICHOMALOPSIS, new genus.

Belongs to the tribe Rhaphitellini as defined by Ashmead; right mandible 4-toothed, left mandible 3-toothed, all teeth acute at apex; occipital foraminal depression margined; antennæ 13-jointed, with two ring joints, very similar in the two sexes, pedicel longer than first joint of funicle; parapsidal furrows incomplete; scutellum near apex with an indistinct transverse line due to the difference in punctures; propodeum with a distinct neck, lateral folds indistinct, due to the sculpture; a median carina present in some specimens; propodeal spiracles small, elongate, situated basad; marginal and postmarginal veins subequal in length, the stigmal shorter; hind tibiæ with one apical spur; abdomen subsessile, the petiole not extending beyond the neck of propodeum.

Type of the genus.—*Trichomalopsis shirakii*, Crawford.

TRICHOMALOPSIS SHIRAKII, new species.

Female.—Length about 2.25 mm. Green, head and thorax including propodeum, mesopleuræ and metapleuræ, with thimble-like punctures; face below insertion of antennæ with striæ converging toward mouth parts; scape and pedicel testaceous, rest of antennæ light brown; punctures entirely covering propodeum, and obscuring the lateral folds; wings hyaline, veins whitish; legs, except the green coxæ, testaceous, the tibiæ and tarsi more whitish; abdomen smooth, polished.

Male.—Length about 2 mm. Similar to the female except in secondary sexual characters.

Habitat.—Taihoku, Formosa.

Specimens bred from the pupæ of *Lema flavipes* May, 1911, by T. Shiraki and sent under his No. 19.

Type.—Cat. No. 15111, U.S.N.M.

The type female is without the median carina on the propodeum; the allotype male has traces of it; numerous paratype females have the carina distinct.

APLASTOMORPHA, new genus.

Belongs to the tribe Pteromalini as defined by Ashmead; mandibles each 4-toothed; antennæ 13-jointed, with three ring joints in the female and two in the male, the ring joints all transverse; in the female first joint of funicle slightly longer than the pedicel, the following joints successively slightly decreasing in length, the last subquadrate, the three joints of the club slightly enlarged; head not thin at vertex; propodeum without a neck, with a median carina, lateral folds not very distinct, represented basad by foveæ; spiracles small, oval; postmarginal vein as long as the marginal, the stigmal shorter; abdomen short, subappressed.

Type.—*Aplastomorpha pratti* Crawford.

This genus runs to *Neocatolaccus* in Ashmead's table, but that genus has appressed pubescence on the head and thorax, the head thin at vertex, the marginal vein much longer than the postmarginal, and the abdomen elongate.

APLASTOMORPHA PRATTI, new species.

Female.—Length about 2.25 mm. Green, head and thorax with fine, shallow, thimble-like punctures, and with sparse glittering white hairs; head slightly wider than thorax; face below antennæ with striæ converging toward mouth; scape and pedicel testaceous, rest of antennæ light brown; propodeum finely reticulated; mesopleuræ and metapleuræ, except edges, with sculpture similar to dorsum but coarser; wings hyaline, veins yellowish; coxæ green, femora, except apices, brown; rest of legs yellowish, the tibiæ with a slight reddish tinge.

Male.—Length about 1.75 mm. Similar to the female; abdomen brown with a green tinge and with a large basal yellowish-white spot.

Habitat.—Dallas, Texas.

Type.—Cat. No. 15314, U.S.N.M.

Specimens taken November, 1906, and with the additional data "U. S. D. A. No. 6076, bred from No. 3715, W. D. Hunter, collector."

The manuscript name given by Doctor Ashmead is adopted, but other material has been used as the type material; that in the hands of Doctor Ashmead was from *Bruchus quadrimaculatus* and collected at Washington, District of Columbia.

FAMILY EULOPHIDÆ.

CASSIDOCIDA, new genus.

Belongs to the tribe Tetracampini; funicle 6-jointed, no apparent ring joint, joints of club solidly fused; antennæ very similar in the two sexes, the scape in the male not swollen; eyes distinctly hairy; hind tibiæ with two apical spurs; marginal vein slender, about four times as long as the postmarginal; stigmal knob subsessile; parapsidal furrows distinct; median lobe of mesoscutum somewhat broader along anterior margin than long; metanotum visible, narrow; propodeum without carinæ, spiracles round; sheaths of ovipositor exerted, about as long as the abdomen.

The American Entomological Society possesses a specimen of the genus *Tetracampe* named by Doctor Foerster, and this differs in having the ovipositor concealed and the marginal vein only about twice as long as the postmarginal. The genus *Foersterella* has venation as in *Tetracampe* and the ovipositor concealed and in addition the scape of the male is greatly swollen.

The generic name is based on the name of the family to which the host belongs.

Type of the genus—*Cassidocida aspidomorphæ*, Crawford.

CASSIDOCIDA ASPIDOMORPHE, new species.

Female.—Length (excluding the exposed sheaths of ovipositor) about 1.75 mm.; sheaths of ovipositor about 0.75 mm. Blue-green, with purple reflections in certain lights; head and thorax finely lineolate and with setigerous punctures each with a fine, long, white hair; scape and pedicel yellowish, rest of antennæ light brown; first joint of funicle about as long as the pedicel; following joints somewhat shorter, almost subequal in length and slightly longer than broad; scutellum at apex, metanotum, and propodeum smooth; prepectus large, smooth; pleuræ smooth; wings hyaline; legs, including coxæ, translucent yellowish; abdomen smooth, shiny.

Male.—Length about 1.5 mm. Similar to the female, the antennæ lighter in color, somewhat shorter but very similar; sculpture of head and thorax more apparent than in female.

Habitat.—Bangalore, Mysore, India.

Type.—Cat. No. 15077, U.S.N.M.

Specimens received from Mr. L. C. Coleman, under his No. 181, with the record, reared from the larvæ of *Aspidomorpha miliaris*.

This is the species referred to by me in a previous paper¹ as a species of *Tetracampe*?

FOERSTERELLA FLAVIPES Foerster.

There is in the collection of the United States National Museum an excellent series reared from the eggs of a species of the genus *Cassida* found on *Carduus arvensis* at Grib Skov, Sealand, Denmark, by Prof. J. P. Kryger.

PLEUROTROPIS FRATERNUS Motschulsky.

Eulophus fraternus MOTSCHULSKY.

I have examined the types of this, consisting of about 20 specimens on a card, and made the following notes on them: Face above and below V-shaped furrow with thimble-like punctures; pedicel longer than joint 1 of funicle which is subquadrate; joints 2 and 3 of funicle slightly broader than long, third appearing unless seen at exact angle as part of club; mesoscutum with similar sculpture; scutellum longitudinally rugulose; legs dark; tarsi white; mesoscutum at apex with two depressed somewhat fovea-like spots but these so sculptured like the rest of the scutum.

The United States National Museum possesses a series received from Mr. T. Shiraki with the data Taihoku, Formosa, from egg mass of *Paratenodera aridifolia*.

PLEUROTROPIS ANASTATI, new species.

Female.—Length about 1.3 mm. Dark olive green, face above and below V-shaped furrow down to level of insertion of antennæ and mesoscutum, with thimblelike punctures; antennæ green; scutellum with sculpture somewhat similar to that on mesoscutum but coarser and the reticulations elongate, making the sides of the scutellum appear indistinctly longitudinally striate; medially on scutellum the reticulations subquadrate and more indistinct than on sides; propodeum with two medial carinæ which diverge posteriorly and between them a single carina making the middle of the propodeum tricarinate; femora green, tibiæ brown with some green tinges, tarsi, except apices, white.

Male.—Length about 1.25 mm. Similar to the female except in secondary sexual characters and somewhat brassy in color.

Habitat.—Koulikoro, Haut Senegal-Niger.

¹ Proc. U. S. Nat. Mus., vol. 42, No. 1880, 1912, p. 8.

Type.—Cat. No. 15303, U.S.N.M.

Described from three females and one male reared from *Cerina butyrospermi* by Mr. J. Vuillet, together with *Anastatus vuilleti* Crawford on which it is probably a secondary parasite. The material was received from Mr. A. Vuillet of the Station Entomologique de Paris.

THRIPOSOMA, new genus.

Belongs to the Tetrastichini; form greatly flattened and *Thrips*-like, whence the name; antennæ with one minute ring joint; funicle three-jointed, the first joint subquadrate, the second and third transverse, the first shorter than the pedicel; antennæ subclavate, gradually enlarged from base of funicle to middle of club; mesoscutum without a median groove; scutellum with two delicate parallel furrows; propodeum with a median carina which is not very distinct; propodeal spiracles small, round, situated basad; marginal vein slightly thickened throughout its whole length; sheaths of ovipositor exposed for about one-third the length of the abdomen.

The flattened form readily distinguishes this genus from any other in the tribe.

Type of the genus.—*Thriposoma grafi* Crawford.

THRIPOSOMA GRAFI, new species.

Female.—Length about 1.50 mm. (to tip of abdomen); sheaths of ovipositor exposed 0.25 mm. Entirely very dark green, the legs brown with greenish reflections on femora and tibiæ; scape greenish, rest of antennæ brown; head finely reticulated, the face with scattered large punctures; mesoscutum and scutellum with reticulate lineations, those on the scutellum appearing longitudinal; sculpture on propodeum resembling very shallow and indistinct thimble-like punctures, so shallow as to be distinct only in certain lights; wings hyaline, veins brown; abdomen finely reticulated.

Male.—Unknown.

Habitat.—Hollywood, California.

Three specimens with the following additional data: "In sunflower with aphids and thrips, 22.II. 12, Graf, collector, Chittenden (Bureau of Entomology, U. S. Dept. Agric.) No. 2177."

Type.—Cat. No. 15416, U.S.N.M.

The species is named after the collector.

ZAGRAMMOSOMA FLAVOLINEATA, new species.

Female.—Length about 2 mm. Head yellow, face with a narrow median black stripe, ocellar area black, rear of head with two vertical black lines, on lower posterior orbits a black mark roughly shaped

like a Y with the two upper points touching the eye margin; antennæ brown, the first joint of the funicle distinctly longer than the pedicel; dorsum of thorax and abdomen black; pronotum with two broad yellow stripes on disk and on each extreme side, so that they are

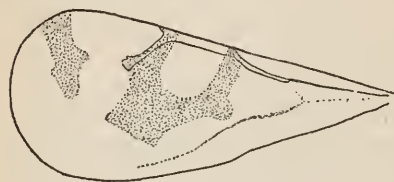


FIG. 2.—ZAGRAMMOSOMA FLAVOLINEATA. FORE WING OF FEMALE WITH STIPPLE TO SHOW INFUSCATED AREAS.

not visible from above, a narrow yellow stripe; mesoscutum and scutellum, except broad lateral margins, yellow; parapsidal areas inwardly and axillæ each with a small yellow spot; outer margin of parapsidal areas yellow; two small spots on basal segment of abdomen and one on each lateral margin and venter of thorax, yellow; legs yellow, hind femora with a dusky band near apex; fore wings maculate (see fig. 2); thoracic notum finely reticulate.

One specimen labeled "Colo., 1589."

Type.—Cat. No. 15390, U.S.N.M.

The face of the specimen is collapsed and sunken in, and face markings other than those described above, if any, can not be seen.

ZAGRAMMOSOMA CENTROLINEATA, new species.

Female.—Length about 2 mm. Pale yellow, pedicel with a dark brown spot above, distinctly shorter than the first joint of the funicle, second joint of funicle shorter than first; a spot at top of eyes, one at base of eyes continued on rear of head, two vertical lines extending from lateral ocelli down rear of head, a broad median line from front of pronotum to tip of abdomen, two narrow lines on each side of pronotum, one continued on mesopleuræ, the other continued on the disk of the parapsidal areas; disk of forewings each with a broad longitudinal brown stripe starting on the posterior margin near base and ending at the tip of the stigmal vein; apicad of this a narrow transverse stripe extending across wing; entire dorsum of thorax with minute thimble-like punctures; marginal vein almost colorless, stigmal vein brown.

Type-locality.—Los Angeles County, California.

Type.—Cat. No. 15391, U.S.N.M.

Two specimens from the type-locality with the additional data "Aug., (No.) 108°"; the note gives the host as *Gracilaria elongata* Linnæus; also one paratype labeled "Sonoma Co., Calif. (No.) 576"; the note gives the host as *Lithocolletes mediodorsella* Braun; all collected by Mr. Koebele.

In all the specimens the head is collapsed and the face sunken in, and the face markings, if any, can not be made out.

ZAGRAMMOSOMA NIGROLINEATA, new species.

Female.—Length about 1.25 mm. Lemon yellow; tip of scape and base of pedicel brownish; pedicel distinctly longer than first joint of funicle; second joint of funicle about as long as first; club distinctly longer than the two joints of the funicle combined; rear of head with a narrow dusky transverse line above level of lower eye margins, this line widened at eye margins; thoracic notum with a median dark line extending backwards to propodeum; a spot on each side on anterior margin of pronotum and one on posterior lateral angles, anterior margin of mesoscutum, inner edge of parapsidal areas, a spot on axillæ, lateral margins of scutellum, a spot just back and centrad of anterior wings, propodeum except extreme sides, spot at base of abdomen, and some suffusion on disk of abdomen, all brown; wings hyaline.

Type-locality.—Compton, California.

Two specimens mounted in balsam on separate slides and with the additional data "Chittenden (U. S. Dept. Agric. Bur. Entom.) number 2180, bred from material *Aleyrodes* sp., etc., Graf, collector."

Type.—Cat. No. 15362, U.S.N.M.

It is very probable that this species came from some lepidopterus leaf minor in the material in which the *Aleyrodes* were found.

This species differs from the others in the genus, in addition to the different pattern of markings, in having the pedicel longer than the first joint of the funicle.

SYMPIESIS METACOMET, new species.

Female.—Length about 2.5 mm. Green; face almost smooth; pedicel subquadrate; joint one of funicle distinctly longer than two, the following joints successively shorter, the last hardly longer than broad; pro-, meso-, and metanotum strongly, coarsely, reticulately rugose, the rugæ on the scutellum somewhat finer, those on the axillæ much finer; propodeum with a strong median longitudinal carina, with weak lateral carinæ and a transverse carina this last doubled for most of its length; basal pair of areolas rugulose; prepectus reticulately rugose; wings hyaline; legs testaceous, the hind coxæ with a large green spot; abdomen about as long as head and thorax together.

Male.—Unknown.

Habitat.—Auburndale, Massachusetts.

Two specimens from swamp white oak leaves infested with *Lithocolletes hamadryella*.

Type.—Cat. No. 15097, U.S.N.M.

SYMPIESIS MASSASSOIT, new species.

Female.—Length about 3 mm. Dark blue, with some greenish reflections; antennæ dark brown, the pedicel very short; first joint of funicle hardly longer than second; the third and fourth, successively slightly shorter, the fourth distinctly longer than broad; mesonotum, including axillæ, reticulately rugose, in part so fine as to almost resemble thimblelike punctures; metanotum medially punctured; propodeum with a median longitudinal carina; lateral carinæ indicated at rear; spiracles small; prepectus and anterior half of mesopleuræ with thimblelike punctures; wings hyaline; coxæ and femora aeneous, with bluish tinges; knees, tibiæ at bases and apices, and tarsi, testaceous; tibiæ medially brown; abdomen distinctly longer than the head and thorax together.

Male.—Length about 1.5 mm. Similar in sculpture to the female; the funicle of the antennæ four jointed, simple, the joints almost subequal in length.

Habitat.—Auburndale, Massachusetts.

Specimens with the record from mines of *Lithocolletes hamadryella* Clemens in swamp white oak leaves.

This species resembles *S. nigrifemora* Ashmead, but in that species the tibiæ are entirely light colored.

Type.—Cat. No. 15096, U.S.N.M.

SYMPIESIS MACULIPES, new species.

Female.—Length about 2.25 mm. Dark blue green, scape testaceous, rest of antennæ brown; pedicel less than half as long as first joint of funicle; following joints of funicle successively decreasing in length, the last only slightly longer than broad; mesonotum coarsely reticulated, the axillæ finely reticulately lineolated; metanotum with a median carinæ and a few rugulæ; propodeum with a median carina, a transverse and lateral ones, making it areolated; wings hyaline; prepectus almost smooth, the lower part and margins somewhat rugulose; coxæ dark, the posterior ones greenish, femora except apices black, rest of legs testaceous, the tibiæ slightly more brownish; abdomen not longer than head and thorax together.

Male.—Length about 2 mm. Similar in structure to the female; hind tibiæ slightly more brownish; funicle 4-jointed, the first three branched, the branches reaching almost to tips of antennæ; first three joints of funicle short, successively slightly increasing in length, the fourth fully as long as the first three combined; club slightly shorter than fourth joint of funicle.

Habitat.—Auburndale, Massachusetts.

Reared from mines of *Lithocolletes hamadryella* Clemens in leaves of swamp white oak together with *S. massassoit* and *S. metacomet* and other parasites.

This species somewhat resembles *S. uroplatæ* Howard, but that species has the legs light colored, with the hind femora somewhat brown.

Type.—Cat. No 15095, U.S.N.M.

SYMPIESIS BIMACULATA, new species.

Female.—Length about 4 mm. Dark blue-green, lower half of face purple, face reticulated, antennæ dark brown, the pedicel short, less than half as long as the first joint of the funicle; joints of funicle successively shorter, the last subquadrate; thoracic notum strongly rugoso-punctate, much more finely so on the parapsides and axillæ; metanotum and propodeum with similar, finer sculpture, that on the metanotum thimble-like; propodeum with a median carina, the lateral carinæ indicated; spiracles ovoid; prepectus with sculpture similar to that on dorsum; wings hyaline, with a small cloud at the base of the marginal vein and a large one at the tip of the stigmal vein, the latter extending backward almost half way across wing; coxæ and femora aeneous, with more or less greenish tinges, knees, tibiæ and tarsi yellowish; abdomen not longer than head and thorax combined.

Habitat.—Franconia, New Hampshire.

One specimen collected by Mrs. A. T. Slosson.

The manuscript name given to this species by Doctor Ashmead is adopted.

Type.—Cat. No. 15094, U.S.N.M.

Family MYMARIDÆ.

ANAGRUS GIRAULTI, new species.

Female.—Length about 0.5 mm. Head and abdomen brown, thorax yellow tinged with brown on the anterior middle of the dorsum; scape about two and one-half times as long as the pedicel; first joint of funicle about half as long as the pedicel; second joint of funicle about three times as long as first; third and fourth joints almost subequal in length, the third about as long as second; the fifth hardly appreciably shorter than the fourth; sixth slightly shorter than the fifth; club about twice as long as sixth joint of funicle; fore wings with about six rows of discal cilia at widest point, slightly concave medially along anterior margin; marginal cilia at apex of wing about one-third longer than greatest width of fore wing; those on posterior margin near apex about one-fourth longer than those apicad; cilia on posterior margin of hind wings about as long as those on apex of fore wings, over six times as long as width of hind wing.

Male.—Length about 0.5 mm. Similar to the female except in secondary sexual characters; first joint of funicle shorter than second, the third slightly longer than the second, joints four to six subequal

in length, each about as long as third, following joints successively slightly shorter.

Habitat.—El Monte, California.

Described from five females and one male with the additional data "Bred from *P. operculella* material, Oct. 21, 1912, J. E. Graf, collector."

Type.—Cat. No. 15402, U.S.N.M.

Since joints 2 and 3 of the funicle are subequal in length this does not fit in Girault's table,¹ but in general it has the habitus of *A. armatus* Ashmead, differing in antennal structure.

This species is named in honor of Mr. A. A. Girault, who has done a most excellent piece of work in the elucidation of the old species of the family Mymaridæ, as well as in describing numerous new forms.

¹ Trans. Amer. Ent. Soc., vol. 37, No. 3, 1911, pp. 297-298.