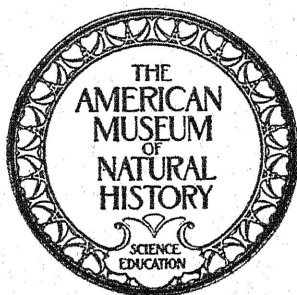


# AMERICAN DIPTERA

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BY C. H. CURRAN

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## Article III.—AMERICAN DIPTERA

By C. H. CURRAN

In addition to the descriptions of a number of new species there are notes on certain forms and keys to most of the genera in which species are described. Most of the new forms have come to light during the study of material received for identification. Unless otherwise noted the types are in The American Museum of Natural History.

### Bombyliidae

#### SYSTROPUS WIEDEMANN

##### KEY TO NEOTROPICAL SPECIES

- 1.—Anterior femora all yellow.....2.  
Anterior femora partly black or brownish.....9.
- 2.—Posterior tarsi black basally.....3.  
Posterior tarsi yellow basally.....5.
- 3.—Posterior legs wholly black.....  
.....*nitidus* Wiedemann.  
Posterior legs not wholly black...4.
- 4.—Four small roundish black spots between the hind coxae and base of abdomen.....  
...♀ *quadrifasciatus* Williston.  
Two large and two small black spots on this area.....  
.....♂ *cerdo* Osten Sacken.
- 5.—Mesonotum black.....6.  
Mesonotum dark red.....  
.....*pulcher* Williston.
- 6.—Posterior femora broadly yellow apically.....7.  
Posterior femora black apically...  
.....*rufiventris* Osten Sacken.
- 7.—Antennae yellow.....*sallei* Costa.  
Antennae black.....8.
- 8.—Pleura wholly blackish.....  
.....*similis* Williston.  
Pleura with yellow and red markings.....*rogersi* Osten Sacken.
- 9.—Wings clouded with brown before the apex.....10.  
Wings not so clouded.....11.
- 10.—Posterior femora with conspicuous pile.....*femoratus* Karsch.  
Posterior femora without conspicuous pile...*fumipennis* Westwood.
- 11.—Posterior tibiae black apically....12.  
Posterior tibiae with the apical third yellow...*lugubris* Osten Sacken.
- 12.—Abdomen brownish red, the base brown above.....  
.....*columbianus* Karsch.  
Abdomen black on apical third or more.....13.
- 13.—Posterior tibiae wholly black....14.  
Posterior tibiae whitish at the base...  
.....*foenoides* Westwood.
- 14.—A yellow spot on the pleura in front of the root of the wings.....  
.....*dolorosus* Wiedemann.  
Pleura yellow only above the front coxae.....15.
- 15.—Fifth abdominal segment wholly reddish.....*mars*, n. sp.  
Fifth abdominal segment black on its whole length.....16.
- 16.—Tip of apical cell about one-third its greatest width...*geijskesi*, n. sp.  
Tip of apical cell more than one-half its greatest width.....17.
- 17.—Wings yellowish brown from base to apical crossvein, the discal and anal cells hyaline.....  
.....*dimidiatus*, n. sp.  
Wings tinged with brown, the costal border darker...*willistoni*, n. sp.

#### Systropus mars, new species

Black, the thorax with yellow markings, the abdomen with the fifth segment wholly reddish. Length, 16 mm.

FEMALE.—Sides of oral margin reddish yellow, the antennal prominence orange above; face and frontal triangle sericeous, the occiput cinereous. Antennae black, the first segment about as long as the head-height, a little shorter than the apical two, the third about twice as long as the second.

Thorax black, the metasternum brownish, an obscure reddish spot above the posterior coxae, a large pale yellow spot above the front coxae;

a broad yellow stripe, broadened at each end, extends from the humeri almost to the base of the wings and the posterior calli are yellowish. The pleura are mostly thinly sericeous, the mesonotum with obscure tiny blackish hairs; scutellum all black, with extremely short silvery hair.

Legs blackish, the anterior femora with a large brownish red area below on the basal half, the anterior four tibiae brownish posteriorly and weakly sericeous, their tarsi rather reddish yellow and sericeous on the basal half of the first segment posteriorly.

Wings with brown tinge, the costal border narrowly darkened on the basal three-fourths. Apical cell slightly narrowed apically. Squamae yellow. Halteres brown with the apical third of the knob yellow.

Abdomen black, the lateral third of the second to fourth segments and the whole of the fifth reddish, the red color extending weakly onto the sixth segment, the black stripe on the fourth segment rather weak. Hair very short, black, rather golden on the reddish areas, white basally.

**HOLOTYPE.**—Female, Pie de Palo, San Juan, Argentina.

This species most closely approaches the Nearctic *macer* Loew than any of the others known from South America. It differs from *conopoides* Kunckel (from Argentina) in many respects but may be readily distinguished by the wholly red fifth abdominal segment and the much less expanded abdomen.

#### *Systropus conopoides* Kunckel

KUNCKEL, 1905, Bull. Sc. France et Belg., XXXIX, p. 147.—1904, Compt. Rend. Acad. Sci. Paris, CXXXVIII, p. 1623 (notes).

This species is illustrated by the author and compared with *foenoides* Westwood from Mexico. The description is not sufficiently clear to permit inclusion of the species in the key but none of the species before me agrees with it. No name was applied to the species in 1904, but its biology was discussed.

#### *Systropus geijskesi*, new species

Black, the thorax and abdomen with yellowish markings; apical cell strongly narrowed at the apex. Length, 19 mm.

**MALE.**—Sides of oral margin pale yellow, the face and front black, silvery white pollinose, the vertical triangle reddish; occiput white pollinose. Antennae black, the first segment three-fourths as long as the head-height, not quite so long as the apical two segments combined, the third segment almost three times as long as the second.

Thorax black, a large pale yellowish spot above the front coxae, a small spot on the humeri and another in front of the wings reddish yellow; mesonotum rather brownish pollinose on the disc except for a pair of weakly metallic vittae, the pleura mostly whitish pollinose. Hair on the dorsum black, on the pleura and scutellum whitish, the scutellum with several very short erect coarse hairs at the apex.

Legs black; posterior surface of the front four tibiae and most of the first segment of their tarsi and the apex of their femora posteriorly, pale yellowish and with silvery reflections in most lights.

Wings tinged with dark brown, the costal border rather broadly brown. Squamae yellow. Halteres brown, the anterior surface yellow on the apical half.

Abdomen black, the sides broadly pale yellowish from the base of the second to the basal fifth of the sixth segment. Hair short, black, white basally, and yellow on the yellow areas. The broad ventral margins of the tergites are distinctly darkened. The apex of the abdomen is moderately broadened.

**HOLOTYPE.**—Male, Kabelstation (Paramaribo), Surinam, September 21–27, 1938 (D. C. Geijskes).

#### *Systropus willistoni*, new species

Black, the thorax and abdomen with yellow markings; wings cinereous hyaline, narrowly darkened in front. Length, 18 mm.

**FEMALE.**—Sides of oral margin yellow; face and frontal triangle black, silvery pollinose, an orange triangle surrounding the antennae. First antennal segment three-fourths as long as the head-height, the others missing.

Thorax black, large pale yellow triangles on the humeri and in front of the wings and a large spot above the front coxae; mesonotum with a pair of narrowly separated metallic vittae bearing white pollen, the pleura with silvery white pollen. Hair black, white on the pleura. Scutellum with whitish pollen and hair on the apical two-fifths.

Legs black, the apex of the anterior four femora posteriorly, posterior surface of their tibiae and most of the posterior surface of the first segment of their tarsi yellow and covered with silvery pollen.

Wings tinged with brown, darkened along the costa; apical cell more than half as wide at the tip as at the widest part. Squamae yellow. Halteres reddish, the knob yellow in front, black behind.

Abdomen black, the sides of the second to fourth segments and the base of the fifth broadly yellow. Hair black, white on the yellow areas and on the lateral third of the first segment. Apex of abdomen scarcely widened.

**HOLOTYPE.**—Female, Chapada, Brazil, December (Williston Collection).

There is a second specimen that is probably a male, but the apical abdominal segments are missing. The third antennal segment is about twice as long as the second; the white hair on the scutellum is limited to the lateral third; otherwise it agrees with the type.

**Systropus dimidiatus**, new species

Black, with yellow markings; wings yellowish brown on the basal half except posteriorly. Length, 18 mm.

**FEMALE**.—Eyes narrowly separated; face and front black, silvery pollinose; sides of oral margin yellow, but brownish near the eyes. Antennal swelling reddish yellow, the antennae missing.

Thorax black, the pleura with silvery pollen and white hair. A large pale yellow spot above the front coxae, the posterior calli yellow and the large triangle on the humeri and in front of the wings rather broadly connected along the sides of the mesonotum. The mesonotal vittae are not strong, not metallic and conspicuously separated by a weak grayish pollinose line; mesonotal hair black, that on the scutellum white on the apical two-fifths, the scutellum without erect black setulae apically.

Legs black; apex of the anterior four femora posteriorly, posterior surface of their tibiae and most of the posterior surface of the first segment of their tarsi pale yellow and silvery pollinose.

Wings yellowish brown in front as far as the anterior crossvein and in the second basal cell, otherwise cinereous hyaline. Squamae yellow. Halteres brownish red, the knob almost all yellow but brown basally.

Abdomen black, the sides of the second to fourth segments broadly reddish and with short whitish hair, the hair black, white on the sides of the first segment. Apex of abdomen moderately broadened.

**HOLOTYPE**.—Female, Chapada, Brazil, January (Williston Collection).

This is the only American species I have seen in which the eyes are distinctly separated. The character may not apply to the male.

**Asilidae**

**BLEPHAREPIUM RONDANI**

**TABLE OF SPECIES**

- 1.—Anterior coxae with wholly pale hair and bristles.....4.  
Anterior coxae with bristly black hair and some pale bristles apically.....2.
- 2.—Legs wholly reddish (Peru).....  
.....*vorax*, n. sp.

Femora black or castaneous behind..3.

- 3.—Wings brown in front, dark grayish or smoky behind, with a yellowish stripe extending from the anal angle to the discal cell (Guiana).....  
.....*cayennensis* Fabricius.

Wings more tawny, scarcely darkened along the costa, the apex and posterior border dark (Peru).....  
.....*inca*, n. sp.

- 4.—Femora wholly reddish.....5.  
Femora extensively black or castaneous.....6.

- 5.—Tarsi with golden yellow hair above, the bristles black (Brazil).....  
.....*coarctatum* Perty.

Tarsi, except the first segment of the hind pair, with black hair and bristles above (Surinam).....  
.....*auricinctum* Schiner

- 6.—Posterior tarsi yellow haired above..7.  
Posterior tarsi with black hair above except on part of the first segment..  
.....*bassleri*, n. sp.

- 7.—Central American species.....  
.....*secabilis* Walker.  
Cuban species.....*annulatum* Bigot.

**Blepharepium vorax**, new species

Legs wholly reddish; mesonotum dark reddish with blackish sides; wings dull orange with dark apex and broad posterior border. Length, 18 to 19 mm.

**MALE**.—Face, cheeks and anterior border of the front reddish in ground color, the face and front whitish pollinose; front shining black, with brown pollen on the sides and vertex. Occiput black, the pollen somewhat brassy but broadly grayish white along the orbits, the hair black. Mystax whitish, composed of more than twenty bristles. Palpi reddish, with black hair on the apical half. Antennae reddish, black haired, the third segment long and tapering apically.

Mesonotum dull dark reddish, a sublateral interrupted stripe and the posterior border black; a pair of narrow median vittae, which unite behind, and two lateral spots very pale brassy yellowish; hair sparse, black. Pleura dull blackish, the propleura, a broad band on the mesopleura and upper part of the sternopleura and another below the squamae reddish, the pollen pale brassy yellow; lateral slopes of the metanotum yellowish in ground color, separated from the pale pollinose median area by a broad brown stripe. Scutellum reddish yellow with the narrow base and sides brown. Hair on sternopleura black above, yellow below.

Legs reddish, the trochanters brown or black; hair black, golden yellow on the broad antero-ventral surface of the front tibiae and on the posterior and ventral surfaces of the posterior tibiae except at the base.

Wings dull orange or brownish yellow with the broad apex and posterior border dark, smoky or brownish. Knob of halteres brown.

Abdomen blackish, the apex of the first segment, the second except basally and the sides and apex of the third reddish, the apices of the following segments similarly colored. Hair black, yellow on the tips of the two apical segments and on the genitalia. Pollen cinereous yellow basally, more golden yellow beyond the third segment, the fourth to sixth segments with large lateral triangles of brown pollen basally on each side. Second and third sternites reddish with yellow hair, the apical sternites and the hair mostly reddish yellow. Genitalia reddish, the base shining black below.

**FEMALE.**—The basal segment of the ovipositor is broadly reddish apically and bears tawny hair; the apical sternites have only black pile.

**TYPES.**—Holotype, male, and allotype, female, La Merced, Peru.

This species seems to be close to *subcontractus* Walker, from "Amazon District," but the color of the abdomen does not agree.

#### ***Blepharepium cayennensis* Fabricius**

*Asilus cayennensis* FABRICIUS, 1787, Mantissa Ins., II, p. 360.

A shining blackish species with golden or brassy yellow pollen, the three basal abdominal segments with yellow pollinose fasciae. The legs are blackish, the femora and tibiae dark reddish in front. The knob of the halteres varies from yellow to brown. The color of the wing is distinctive.

I have before me twenty-four specimens of both sexes from various localities in British Guiana.

#### ***Blepharepium inca*, new species**

Black, wings luteous to bright orange with the broad apex and posterior border dark. Length, 18 to 24 mm.

**MALE.**—Face usually brownish in ground color with the margins broadly reddish or yellowish, rarely almost all reddish yellow, the cheeks brownish and with brown pollen; face and lower half of the front very pale brassy yellow pollinose, almost whitish. Front shining black, the sides broadly opaque. Occiput black, the orbits broadly grayish yellow, the central portion with rich brownish yellow to yellowish brown pollen. Hair black. Antennae usually dark reddish, the third segment often brown on the apical half or more, all the segments rarely brown or blackish.

Palpi reddish yellow, the apical half brown below, the hair mostly black. Proboscis reddish to pale castaneous.

Thorax black in ground color, the humeri paler. Mesonotum with a brownish vitta that is divided anteriorly and bordered with brownish yellow; the lateral spots, scutellum and notopleural spots brassy yellow, the pleura with the usual pale pollinose bands of brassy yellow, that on the mesopleura broadly white in front, the propleura usually without conspicuous pale pollen. Hair black. Scutellum yellow in ground color.

Legs dark reddish, the coxae brown in ground color, the femora and tibiae blackish or dark castaneous posteriorly and ventrally, the posterior tibiae rarely almost all blackish. Hair black, tawny on the ventral surface of the posterior tibiae and anteroventrally on the front tibiae.

Wings rather variable in color, often bright orange yellow with the broad apex and posterior border smoky and the costal border darkened basally, or the pale area luteous, rarely poorly defined. Halteres with brown knobs.

Abdomen black, the apices of the second and following segments reddish and with bright reddish yellow pollen; basal segments with cinereous yellow pollen, the following with brown pollen except apically, the apical segments with more or less broad preapical bands of rather olivaceous pollen. Hair black, rarely a few yellow hairs on the sides of the apical segment. Second sternite mostly reddish, the basal sternites with yellow hair. Genitalia partly reddish, sometimes with wholly pale hair, but the base usually bears black hairs.

**FEMALE.**—The genital segment bears only pale hair.

**TYPES.**—Holotype, male, and allotype, female, Iquitos, Peru, March 13, 1924 (H. Bassler). Paratypes, six males and five females from the following localities in Peru: Iquitos, March 13 and 22; Rio Morona, January 12; middle Rio Ucayali, September 20; Rio Huallaga, September 15; Rio Santiago, November 11 and 12; Achinamiza, December 21; La Merced and Lacorezza, Puntamayo District, August.

This species is most nearly related to *cayennensis* Fabricius, but it does not have the pale streak in the wing, and the antennae are almost always darker. Despite the variation in wing color it appears certain that all the material belongs to a single species.

#### ***Blepharepium bassleri*, new species**

Femora bicolored; front coxae wholly pale haired; tarsi black haired; wings luteous or pale

brownish orange with weak dark posterior border and apex. Length, 18 to 20 mm.

**FEMALE.**—Face and cheeks reddish, the face with a roughened ferruginous stripe on the upper half; pollen brassy yellowish, brighter on the occiput; upper part of front shining black with a narrow band of brown pollen at the vertex and along the orbits. Bristles black but a number of fine yellow ones on the lower part of the occiput. Antennae brownish red, the third segment sometimes mostly brown. Palpi dark reddish, the hair yellow, partly black on the apical half.

Thorax blackish in ground color, the humeri and lateral margins of the mesonotum more or less reddish, the propleura partly reddish, and there is a large spot on the upper part of the sternopleura that sometimes extends onto the mesopleura; lateral slopes of the mesonotum usually reddish and usually a reddish spot below the posterior spiracle. The mesonotum has the usual dark and brassy yellow stripes and the pleura the usual brown bands. Scutellum brassy yellow above, brownish luteous on the upper part of the apex and with yellow pollen below.

Legs reddish, the femora dark brown or castaneous posteriorly and ventrally, the tibiae dark behind except apically. Hair black, yellow on the anterior coxae.

Wings brownish yellow to dusky orange, the apex and posterior border broadly darker but less contrasting than in *inca*. Knob of halteres black or reddish.

Abdomen black, the apices of the segments narrowly reddish, the pale color expanded on the sides of the second segment. Hair black, yellow on the first segment, broad apex of the second, basal three sternites and genitalia.

**TYPES.**—Holotype, female, Rio Marañon, Peru, August 28, 1923; paratypes, female, Rio Santiago, Peru, November 11, 1924, and female, Iquitos, Peru, March 19, 1924, all collected by H. Bassler.

#### ***Blepharepium auricinctum* Schiner**

*Senobasis auricincta* SCHINER, 1867, Verh. Zool.-bot. Ges. Wien, XVII, p. 371.

Bromley, without seeing specimens, placed this species as a synonym of *cayennensis* Fabricius. It is a very different appearing species with wholly reddish legs, as pointed out by Schiner in his comparison with *secabilis* Walker. There is evidently an error in Schiner's description since he states that the posterior claws are minute. He undoubtedly refers to the pulvilli. I have before me one male and two females collected by Dr. D. C. Geijskes in Surinam in June and July.

#### ***Blepharepium coarctatum* Perty**

*Laphria coarctata* PERTY, 1830-34, Delect. Animal. Arctic. Brasil, p. 181 (f.).

The wings are brownish with an almost hyaline median stripe as in *cayennensis*, the second and third abdominal segments reddish and the legs wholly reddish. The tarsal hair is all yellowish.

I have seen *coarctatum* only from Brazil. It is represented in the Museum Collection by two males and three females from the Williston Collection.

#### ***Blepharepium secabilis* Walker**

*Dasypogon secabilis* WALKER, 1860, Tr. Ent. Soc. London, p. 276.

The mesonotum is almost uniformly colored, the outer dark vittae rarely with dark brown cast, usually reddish or ferruginous. The anterior femora are usually all reddish, the posterior four black on the basal half or more, the black rarely reduced, seldom almost absent on the middle legs. Hair on the tarsi all yellowish.

Eight specimens from Mexico (Williston Collection) were reported upon in the Biologia. There is a female from Honduras, October, 1928, and two females, Fort Randolph, Panama Canal Zone, January 23, 1929 (Curran). The Panamanian specimens have the dark stripes more conspicuous than the others.

#### ***Blepharepium annulatum* Bigot**

*Senobasis annulata* BIGOT, 1856, in Sagra, Hist. Isla de Cuba, Part 2, VII, p. 331 (f.).

The single damaged female before me is very similar to *secabilis*, but the dark stripes on the mesonotum are blackish. I can see no other differences worthy of note. Perhaps both names apply to the same species, but it is impossible to decide without more material.

#### **DORYCLUS JAENNICKÉ**

All the described species in this genus have been placed as synonyms of *distendens* Wiedemann, but it seems almost certain that they are distinct, even though the descriptions leave much to be desired. The four species before me are easily separated and show differences in both color and structure.

## TABLE OF SPECIES

- 1.—Wings hyaline, at most slightly darkened along the veins.....2.  
Wings rather extensively brownish.....3.
- 2.—Legs wholly black; metanotum smooth (Brazil)....*distendens* Wiedemann.  
Femora ferruginous; metanotum very strongly roughened in the middle (Panama).....*panamensis*, n. sp.
- 3.—Thorax and abdomen brownish or castaneous; wings yellowish with very extensive brown coloring (see Curran, 1934, North American Diptera, Asilidae, Fig. 122) (Brazil).....*crassitarsis* Macquart.  
Abdomen blue or violaceous; wings hyaline basally .....4.
- 4.—Basal antennal segments black (Brazil).....*varipennis* Walker.  
Antennae reddish.....5.
- 5.—Legs brown, the front ones black; hind tibiae testaceous; palpi black (Mexico)...*cyaneiventris* Macquart.  
Legs reddish, the anterior tibiae and all the tarsi black; palpi ferruginous (Surinam).....*latipes* Wulp.

**Doryclus distendens** Wiedemann

*Asilus distendens* WIEDEMANN, 1828, Ausser. Zweifel., I, p. 571.

This species is black, the abdomen violaceous; the wings hyaline with black veins which are bordered with faint clouding. The median pollinose vittae on the mesonotum are narrow, the outer ones wide and interrupted at the suture. The hair in front of the halteres is black on the lower half and whitish above. The pollinose spots on the face are unusually broad and not triangular. It is the only species described with the legs wholly black. None of the names placed as synonyms of *distendens* in catalogues belongs here. I have before me a single female from Nova Teutonia, Brazil, collected by Fritz Plaumann. The type, from Brazil, was a male.

Hermann states that *guntheri* Arribalzaga is the same.

**Doryclus panamensis**, new species

Black, the abdomen metallic blue, the legs

partly reddish, the wings clear hyaline. Length, about 12 mm.

MALE.—Front shining reddish brown, the face more reddish; hair black, yellowish on the upper half of the occiput and vertex; vertex white pollinose, the face with a yellowish tinged pollinose triangle on each side. Antennae rusty reddish, the hair black. Palpi reddish basally, becoming brown at the apex, the hair black, yellow on the basal half of the lower surface.

Thorax shining black, with brownish red areas as follows: a broad band covering the pteropleura and upper part of the sternopleura, a triangle below the halteres, the anterior and posterior borders of the mesonotum and the lateral margins behind the roots of the wings and the scutellum. The mesonotum has a pair of approximate grayish vittae on the anterior three-fourths and a pair of broader lateral vittae on the posterior three-fourths; the sides of the metanotum and metasternum are also grayish pollinose, the mesonotum strongly roughened in the middle. Hair black on the mesonotum, elsewhere cinereous and very fine.

Legs black, the anterior four femora, the under half of the hind pair and the ventral surface of all the tibiae, except apically, brownish red.

Wings hyaline, the veins brown. Squamae white, the halteres brownish.

Abdomen metallic dark blue; hair pale brassy yellowish, the middle of the apical four segments and the genitalia with black hair.

HOLOTYPE.—Male, Corozal, Canal Zone, January 16, 1929 (Curran).

**Doryclus crassitarsis** Macquart

*Megapoda crassitarsis* MACQUART, 1846, Dipt. Exot., Suppl. I, p. 70 (f.).

This is the species illustrated in my North American Diptera under the name *distendens*. It is very different from that species and may be readily recognized by the ferruginous coloration. The pollinose stripes on the mesonotum are very wide and only narrowly separated from each other. There is a pair from Chapada, Brazil (Williston Collection).

**Doryclus latipes** Wulp

WULF, 1870, Tijds. v. Ent., XIII, p. 216 (f.).

The face is ferruginous, the front shining brown. The pollinose vittae on the mesonotum are united for much of their length and the pleura is largely ferruginous, as are the sides of the mesonotum and scutellum. The legs are reddish with the tarsi and tip of the hind tibiae black. The wing pattern

is very similar to *crassitarsis*, but the pale areas are much more nearly hyaline.

One female, Botanical Garden, Paramaribo, Surinam, May 10, 1941 (D. C. Geijskes).

This does not agree with the description of *varipennis* Walker or *cyaneiventris* Macquart, but it is possible that it is the same as one of them. It is not impossible that all three names represent a single species.

#### LESTOMYIA WILLISTON

Since the publication of a key to the species in American Museum Novitates, No. 487 (1931), one species has been described and another new species is now before me.

#### TABLE OF SPECIES

- 1.—Scutellar bristles black.....2.  
Scutellar bristles whitish.....3.
- 2.—Coxae and base of femora black in ground color (Arizona).....  
.....*atripes* Wilcox.  
Coxae and base of femora reddish in ground color (California).....  
.....*fraudiger* Williston.
- 3.—Femora and tibiae black above, reddish below (Wyoming)..*strigipes* Curran.  
Femora black annulate or all reddish.....4.
- 4.—Scutellum with six (rarely eight) bristles; male genitalia reddish, twice as long as wide; anterior femora of female more than half black (California, Wyoming).....  
.....*sabulorum* Osten Sacken.  
Scutellum with four (rarely six) bristles; male genitalia black, not half so long as wide; anterior femora of female at most with black median band (Arizona).....*unicolor*, n. sp.

#### *Lestomyia unicolor*, new species

Black, thickly cinereous pollinose, legs partly reddish, the bristles mostly white. Length, 6.5 to 9 mm.

MALE.—Head cinereous, the hair and bristles white; mouth and proboscis shining black. Antennae black, very thinly pollinose. Face gently gibbous on the lower half.

Thorax cinereous pollinose, the mesonotum with very approximate median and incomplete sublateral dark vittae; bristles white, the dorso-centrals almost all black. The pollen of the middle of the mesonotum and scutellum has a yellowish tinge.

Legs black, the trochanters, bases and apices of the femora and the basal fourth or less of the tibiae pale orange; tarsi brownish red. Hair and bristles whitish. Pulvilli only about one-third as long as the claws.

Wings cinereous hyaline, the veins brown. Squamae and halteres yellowish.

Abdomen cinereous pollinose, the segments appearing darker on the basal half in some lights. Genitalia short, shining blackish. Hair whitish.

FEMALE.—The legs are mostly reddish yellow: front femora with narrow black band, the middle pair about half black, the posterior pair two-thirds black. Tibiae with the bases more broadly yellowish and with reddish apices, the tarsi reddish. Abdomen with the sixth and following segments shining black and with the bases of the second to fifth segments broadly bare except laterally. One female has the legs much more extensively reddish (the anterior four femora wholly reddish), and has six scutellar bristles.

Types.—Holotype, male, allotype, female, and paratypes, five males and two females, Tempe, Arizona, April (D. K. Duncan).

This species is smaller, more slender and paler in color than any of the others and has shorter pulvilli.

#### SMERINGOLAPHRIA HERMANN

HERMANN, 1912, Nova Acta Acad. Caes. Leop.-Carol. Germ. Nat. Cur., XCVI, p. 226.

*Panamasilus* CURRAN, 1930, Amer. Mus. Novitates, No. 425, p. 20.

Hermann described the genus, basing it on a species from Bolivia. *Panamasilus* was described from a series of specimens collected on Barro Colorado Island, Panama Canal Zone. The two species are easily distinguished as follows:

- a.—Wings with large preapical brown spot and a small one near the middle; mesonotum ferruginous..  
.....*maculipennis* Macquart.
- b.—Wings uniformly yellowish brown; mesonotum almost all black in ground color.....  
.....*panamensis* Curran.

#### *Smeringolaphria maculipennis* Macquart

*Laphria maculipennis* MACQUART, 1846, Dipt. Exot., Suppl. I, p. 73.

*pictipennis* HERMANN, 1912, loc. cit.

I have before me a specimen from Surinam (Kabelstation, September 21–27, 1938) collected by Dr. D. C. Geijskes which agrees with the descriptions. The species



is apparently widespread in South America. Dr. Bromley has called my attention to the above synonymy. It is quite certain that the specimen before me is *maculipennis*, and the description given by Hermann agrees in all details. The species is placed in *Nusa* in the Kertész Catalogue.

***Mallophora geijskesi*, new species**

Black, the legs chiefly reddish yellow; pile mostly yellow and tawny; face wholly pollinose. Length, 18 mm.

MALE.—Head black in ground color, the face reddish yellow, with ochraceous pollen, the orbits paler; pile reddish yellow, the front with black hair; bristles on the cheeks, on the border of the mystax and on the upper posterior orbits black; frontal pollen reddish yellow, that on the occiput pale yellowish. Antennae black, the base of the second segment reddish, the hair black; arista slightly longer than the elongate third segment. Palpi black, the hair coarse, tawny.

Thorax blackish, tawny pollinose, the mesonotum with four brownish vittae, the median pair narrow and short. Pile tawny, becoming yellow on the lower part of the pleura, the disc of the mesonotum with coarse black hair. Scutellum with one or two pairs of black bristles.

Legs reddish, the anterior four femora mostly shining black in front, the posterior tarsi with the basal four segments black, not conspicuously expanded, the hair black, longer and white on more than the anterior half of the apical three segments, the apical segment without black hair. Pile of the legs tawny, black on the under surface of the anterior four femora; not erect on the posterior tibiae.

Wings strongly tinged with brown. Squamae reddish yellow; halteres reddish with brown tinge on apical half.

Abdomen black, the sides rather broadly tawny to brownish gray pollinose, the pollen expanding to form narrow bands on the apices of the second to fourth segments; pile tawny, black on the sixth and following segments, and on the broad apex of the fifth except laterally. Genitalia shining black, black haired, the basal third above with thick white appressed hair. Venter yellowish brown pollinose and tawny pilose.

HOLOTYPE.—Male, Brownsberg, Surinam, September 17, 1938 (D. C. Geijskes). This species belongs to the second group and traces to couplet 18 in my recently published key (1941, Jour. N. Y. Ent. Soc., XLIX, p. 270). It most nearly approaches *zita* Curran, but the posterior tarsi are not strongly broadened, and the white hair is on the anterior half of the segments and is longer but is not particularly dense.

***Mallophora fairchildi*, new species**

Face wholly pollinose; abdomen without pale pollen; scutellum black haired with some white hair at the base laterally. Length, 18 mm.

MALE.—Head black, reddish only above the anterior oral margin; face grayish yellow pollinose, with black hair and bristles, some white hairs on the upper part of the face and some white bristles in the mystax immediately above the oral margin, front with brown pollen and black hair; occiput white pollinose and pilose, with black bristles behind the eyes. Antennae black, black haired, the arista considerably longer than the elongate third antennal segment. Palpi black and with black hair.

Thorax black, with brownish pollen that becomes more grayish on the lower half of the pleura; mesonotum with four blackish or dark brownish vittae. Hair black, white on the pleura but almost all black on the mesopleura; scutellum with a few white hairs laterally.

Legs orange, the anterior four femora mostly shining black in front; tarsi black, the first segment of the anterior four mostly reddish above, the apex of the posterior tibiae narrowly black. Femora with black hair but with yellow hair above except at the apex; anterior four tibiae with black hair above and below, and reddish yellow hair in front and behind; posterior tibiae with yellowish hair ventrally and on most of the posterior surface. Anterior tarsi with whitish hair and reddish yellow bristles posteriorly, the anterior bristles black; middle tarsi with black hair, the posterior pair black haired, but the upper surface of the second to fifth segments bears increasingly long white hair dorsally, and there is a narrow stripe of white hair on the dorsal surface of the first segment toward the anterior edge; all the hair on the first segment is appressed.

Wings tinged with brown, the costal border pale brownish. Squamae with white fringe. Halteres reddish with brown knob.

Abdomen black, opaque, the venter subopaque. Hair whitish on the first segment, on the venter and on the lateral margins of the second to fifth tergites, expanded to form whitish fasciae on the second to fourth segments but these segments with fine black bristles laterally. Genitalia shining black, the basal half above with dense white appressed hair, the hair and bristles otherwise black.

HOLOTYPE.—Male, El Valle, Coclé Prov., Panama, April 13, 1941 (G. B. Fairchild).

This species traces to *ada* Curran (couplet 29) but may be at once distinguished by the absence of pale pollen on the abdomen and the white instead of yellow pile. Like the preceding species it belongs in group II.

**Dolichopidae**

**LAXINA CURRAN**

CURRAN, 1934, Fam. Gen. N. A. Dipt., p. 230.

This genus was established to include those species formerly placed in *Condyllostylus*, *Psilopus*, *Sciapus*, etc., having the lower part of the face haired. The genotype is *patibulatus* Say, which differs from all the other species in having the upper half of the face haired. With the exception of *patibulatus* the genus is an artificial one, since there are species remaining in *Condyllostylus* which agree in all other respects with some of the species included in *Laxina*. However, the separation of this group of species is very convenient and aids greatly in their recognition. Up to the present time there has been no listing of the species of *Laxina*, and I take this opportunity to present a key to the males and discuss the various forms. The females of a number of the species cannot be separated at the present time.

## TABLE OF SPECIES

## MALES

- 1.—Femora black or greenish.....3.  
Femora yellowish.....2.
- 2.—Apical segment of front and middle tarsi whitish (eastern United States).....*banksi* Van Duzee.  
Apical segment of all the tarsi blackish (United States). *flavipes* Aldrich.
- 3.—Wings hyaline.....4.  
Wings with two brown, anteriorly connected crossbands on the apical half (United States) *patibulatus* Say.
- 4.—Face with white hairs only.....6.  
Face with the upper hair black, or all black.....5.
- 5.—Facial pile all black (Mexico).....*occidentalis* Bigot.  
Facial pile white on lower half (Brazil).....*ornatacauda* Van Duzee.
- 6.—First segment of middle tarsi with row of closely placed, very strongly curved short bristles below.....8.  
Middle tarsi without such bristles..7.
- 7.—Apex of middle tibia with very long spine below (United States).....*calcaratus* Loew.  
Middle tibia without spine (Pennsylvania, eastern states).....*inermis* Loew.
- 8.—First genital segment bearing two rows of extremely long bristles...9.  
First genital segment with fine, little conspicuous bristles.....11.
- 9.—The genital lamellae bear three long, obtuse spines on inner surface apically (Florida to South America and West Indies) (*tenuitarsus* Van Duzee)....*graenicheri* Van Duzee.
- 10.—Genital lamellae long, strong, bare on basal half, the spines strongly swollen apically (Guiana).....*cancer* Van Duzee.  
Genital lamellae finer, with fine hair on whole length, the apical spines weakly swollen (eastern United States).....*caudatus* Wiedemann.
- 11.—Genitalia with a pair of bristles longer than the genitalia and two or three pairs of shorter ones, all directed backwards (eastern states).....*connectans*, n. sp.  
Genital bristles much shorter than the genitalia.....12.
- 12.—North American species.....13.  
South American species (Chile, Argentina)..*acuminatus* Van Duzee.
- 13.—First segment of the middle tarsi with antero-dorsal row of cilia composed of suberect bristles (United States).....*cockerelli* Van Duzee.  
First segment with shorter, less erect bristly hairs (United States) (*scrobicator* Loew).....*nigrofemoratus* Walker.

*Laxina patibulatus* Say

*Dolichopus patibulatus* SAY, 1823, Jour. Acad. Nat. Sci. Phila., III, p. 87 (Florida).

*Psilopus amatus* WALKER, 1849, List Dipt., III, p. 648 (New York).

*Psilopus carolinensis* BIGOT, 1888, Bull. Soc. Ent. France, p. xxix (Carolina).

*Psilopus inficitus* WALKER, 1849, List Dipt., III, p. 649 (Mexico).

This is one of the commonest and most widely distributed species in the genus. It is readily recognized by the banded wings. It is the genotype of *Laxina* and differs from all the other species in having hairs over practically all the face, the hairs being limited to the lower half in the others.

*Laxina flavipes* Aldrich

*Psilopus flavipes* ALDRICH, 1904, Tr. Amer. Ent. Soc., XXX, p. 284.

*Psilopus femoratus* SAY, 1829 (not 1823), Jour. Acad. Nat. Sci. Phila., VI, p. 361.

Originally described from South Dakota and Massachusetts. There is a male from Ramsey, New Jersey, June 18, 1921. This species is rare in collections. It is like *inermis* Loew, except that the femora are yellowish.

#### *Laxina banksi* Van Duzee

*Sciapus banksi* VAN DUZEE, 1915, Ent. News, XXVI, p. 23.

Described from Virginia and New York and not since recorded. It differs from *flavipes* in having the apical segments of the anterior four tarsi whitish.

#### *Laxina calcaratus* Loew

*Psilopus calcaratus* LOEW, 1861, Neue Beitr., VIII, p. 93 (Carolina).

Differs from all the species with hyaline wings and black femora (except *inermis*) by lacking the curved bristles on the middle tarsi. It differs from *inermis* by the presence of a very long, strong, suberect bristle on the lower apex of the middle tibia. Our material is from New York, Illinois and Indiana.

#### *Laxina inermis* Loew

*Psilopus inermis* LOEW, 1861, Neue Beitr., VIII, p. 93 (Pennsylvania).

Lacks the strong bristle on the middle tibiae but otherwise similar to *calcaratus*. Our specimens are from New York, Massachusetts, North Carolina and Wisconsin.

#### *Laxina occidentalis* Bigot

*Psilopus occidentalis* BIGOT, 1888, Bull. Soc. Ent. France, p. xxix.

*Psilopus barbatus* ALDRICH, 1901, Biol. Centr. Amer. Dipt., I, p. 359.

PARENT, 1932, Ann. Soc. Sci. Brux., LII, p. 224.

This is the only species in which the hair on the face is all black. In *ornaticauda* Van Duzee the hair is black above and white below. Aldrich described *barbatus* from Mexico and Brazil, but it is possible that the specimen from the latter country is referable to the following species, provided the two are distinct.

#### *Laxina ornaticauda* Van Duzee

*Condylostylus ornaticauda* VAN DUZEE, 1931, Amer. Mus. Novitates, No. 483, p. 9 (f.).

The types were from the Williston Collection, and the same is true of the Brazilian specimen included by Aldrich in *barbatus*. The only means of separating the two species is by the color of the hair on the face, which is more than half white in *ornaticauda*. In the females of both species the front coxae are almost all green in front, reddish posteriorly.

#### *Laxina caudatus* Wiedemann

*Psilopus caudatus* WIEDEMANN, 1830, Ausser. Zweifl. II, p. 224 (United States).

*Psilopus virgo* WIEDEMANN, 1830, loc. cit.

*Psilopus caudatulus* LOEW, 1861, Neue Beitr., VIII, p. 79.

*L. caudatus* is apparently confined to North America and probably does not extend south beyond Mexico. I have specimens from the area between Florida and Canada, but other references refer to *gracilicornis* and *ornaticauda* Van Duzee. The species figured by Becker from Brazil apparently was *ornaticauda*, although it is possible that it is *smaragdulus* Wiedemann, known only from a female from Uruguay.

In this group of species there is a group of long bristles apparently attached to each side of the first genital segment, the bristles very long above and becoming short below and forming a more or less fan-like row. The species are very similar in all respects but show differences in the male genitalia and the color of the front coxae in the females. In the female of *caudatus* the anterior coxae are yellow except a small basal spot on the outer side, a characteristic of most of the Nearctic species. In the Neotropical species the anterior coxae are usually green on the basal half or more.

#### *Laxina cancer* Van Duzee

*Condylostylus cancer* VAN DUZEE, 1934, Bull. Amer. Mus. Nat. Hist., LXVI, p. 366 (f.).

?*Psilopus caudatulus* ALDRICH, 1896, Tr. Ent. Soc. London, p. 343.

Described from a single male from Georgetown, British Guiana. It differs from *caudatus* in having the outer genital lamellae broader and very much longer, curved inwardly apically and with longer,

stouter, more capitate, backwardly directed spines on the inner apex. There are two females from St. Vincent and one from Colombia that I believe belong here. The anterior coxae are green except at the tips. They might, however, be *ornaticauda* since the female of that species bears only white hair on the face.

#### *Laxina graenicheri* Van Duzee

*Condylostylus graenicheri* VAN DUZEE, 1927, Ent. News, XXXVIII, p. 73 (Florida).

*Psilopus caudatus* ALDRICH, 1901, Biol. Centr. Amer. Dipt., I, p. 360.

*Psilopus caudatulus* ALDRICH, 1902, Kans. Univ. Sci. Bull., I, p. 94.

PARENT, 1933, Bull. Ann. Soc. Ent. Belg., LXXIII, p. 175 (f.) (Cocas Island).

*Condylostylus tenuimanus* VAN DUZEE, 1931, Amer. Mus. Novitates, No. 484, p. 2 (f.) (Honduras).

This species is not rare in Florida, Central America and some of the West Indies, but it is not the species recorded from St. Vincent by Aldrich under the name *caudatulus*. The female has the front coxae green on about the basal half, while the male bears three stout, weakly clavate spines on an inner lobe of the outer genital forceps. It is easily recognized by the genital characters.

The type of *tenuimanus* is a poorly preserved specimen, and Van Duzee was misled because the long bristles on the genitalia were all broken off. As a result he considered it to be related to *scrobinator* Loew. The genitalia are identical with a paratype of *graenicheri* in the Museum Collection.

#### *Laxina connectans*, new species

Metallic green, wings hyaline; basal genital segment with a single pair of long bristles and several short ones; femora black. Length, 4 to 5 mm.

MALE.—Face more or less bluish or violaceous, rather thickly, white pollinose; front sometimes mostly bluish, its hair white. Antennae black, the longest bristle on the second segment longer than the antennae. Proboscis reddish yellow, palpi black, with white hair and two or three black bristles.

Thorax green to violaceous, the pleura white pollinose. Five pairs of dorsocentrals; two pairs of large scutellars.

Legs green, the tibiae, tips of the femora and most of the first segment of the front tarsi yellowish; coxae and lower surface of the femora

with white hair. Middle tibiae with very long, erect, apical bristle below, the first segment of their tarsi with a series of anterior and posterior, short, curved spines on ventral surface, the posterior row double and with an antero-dorsal row of downwardly curved cilia. Posterior tibiae blackish apically, the apical segment of their tarsi distinctly broadened.

Wings hyaline. Squamulae black. Halteres yellow.

Abdomen green, the basal half more or less strongly bluish or violaceous, the apical segments with broad, dull black basal fascia. Genitalia brown, the basal segment bearing three or four bristles on each side, the upper one very long and strong, the others not so long as the genitalia, outer lamellae small, brown, lying close to the genital segment.

FEMALE.—Similar to related females but apparently with a slightly larger green spot on the outer surface of the front coxae at the base.

TYPES.—Holotype, male, and allotype, female, Avon Old Farms, Connecticut, June 16 and 18, 1929 (Curran). Paratypes, male, Black Mountains, North Carolina, June 24–30, 1906 (W. Beutenmuller) and male, Waverley, Massachusetts.

The type male was determined as *caudatus*, the female as *scrobinator* and one paratype as *caudatulus*. The species is intermediate between *nigrofemoratus* and *caudatus*, but the genital lamellae are almost as in *nigrofemoratus*.

#### *Laxina nigrofemoratus* Walker

*Psilopus nigrofemoratus* WALKER, 1849, List Dipt. Brit. Mus., III, p. 650 (North America, Nova Scotia).

*Psilopus scrobinator* LOEW, 1861, Neue Beitr., VIII, p. 91.

?*Condylostylus acuminatus* VAN DUZEE, 1920, Dipt. Patagonia, V, p. 89 (Argentina).

There can be no doubt about the synonymy of *scrobinator* and *nigrofemoratus*, but *acuminatus* may not belong here. Parent, who examined the types of Walker and Van Duzee, stated that they were the same, but Van Duzee indicated a slight difference. The statement by Parent leaves no doubt about *scrobinator*, a common species in Canada and the United States. The species (if distinct) belonging to this group have very small, triangular, outer genital lamellae, a very long erect bristle on the apex of the middle tibiae and two series of short, stout, curved spines on the basal segment of the middle tarsi. The

number of these spines varies slightly. All of the species lack the long bristles on the basal segment of the genitalia, the bristles present being short, a single pair rarely equalling the length of the genitalia.

#### *Laxina cockerelli* Van Duzee

*Psilopus cockerelli* VAN DUZEE, 1927, Ent. News, XXXVI, p. 73 (Colorado).

This form, according to the description, differs from *nigrofemoratus* only in having an antero-dorsal ciliation composed of fine, short bristles on the first segment of the middle tarsi. One of our specimens was determined by Van Duzee who stated that the ciliation was not present in *scrobinator*. Other specimens determined by Van Duzee as *scrobinator* have the ciliation as fully developed as in the specimen determined as *cockerelli*, and all the specimens under *scrobinator* in the collection show a ciliation, but in some the hairs are much less erect, but apparently not less numerous nor noticeably shorter. I think that Mr. Van Duzee failed to notice this character and was therefore misled into describing *cockerelli*. About two-thirds of our material from various localities would be *cockerelli*, while the others, most of which can be only doubtfully assigned, approach his conception of *scrobinator*. I believe that both names apply to the same species and that *cockerelli* should be placed as a synonym of *nigrofemoratus* Walker.

#### *Laxina acuminatus* Van Duzee

*Condylostylus acuminatus* VAN DUZEE, 1930, Dipt. Patagonia, V, p. 89 (Argentina).

Parent, who examined the type, placed this as a synonym of *nigrofemoratus* Walker. Mr. Van Duzee stated that it differed from *scrobinator* Loew in having longer and more abundant hair on the lower part of the apical abdominal segments. Since he considered that *scrobinator* lacked ciliation on the first segment of the middle tarsi it is possible that *acuminatus* is different. If there is not a row of short antero-dorsal bristles the species is distinct. Mr. Van Duzee had only a single male. Should the female have the anterior coxae extensively greenish the species would certainly be distinct. Comparison of a series of speci-

mens from North and South America is necessary before the relationship of the forms can be established.

#### *Laxina smaragdulus* Wiedemann

*Psilopus smaragdulus* WIEDEMANN, 1830, Ausser. Zweifl., II, p. 225.

This species was described from a female from Uruguay, and it cannot be placed at the present time. If the front coxae are wholly yellow (and the same is true of *acuminatus* Van Duzee) it would be the same as *acuminatus*, but if the front coxae are greenish it would probably be *ornaticaudus* Van Duzee. There can be little doubt that it is the same as one or the other of these species. See discussion under *acuminatus*.

#### *Laxina femoratus* Say

*Dolichopus femoratus* SAY, 1823, Jour. Acad. Nat. Sci. Phila., III, p. 86 (Pennsylvania).

Say described the male from Pennsylvania and later mentioned a specimen from Indiana which is undoubtedly *flavipes* Aldrich. Wiedemann had a specimen received from Say which he described but which was not found in the Wiedemann Collection. This may have been the type, and the identification of the species must rest upon the location of this specimen. It is safe to presume that *femoratus* is the same as either *inermis* Loew or *nigrofemoratus* Walker. Had Wiedemann mentioned the ornamentation of the middle tarsi in *caudatus* it would be reasonably safe to assume that the tarsi were not ornamented in *femoratus*, and the name could then be applied to *inermis* with safety. The fact that no mention is made of this character makes *femoratus* unrecognizable. Both *inermis* and *nigrofemoratus* are common in Pennsylvania.

### Conopidae

#### STYLOGASTER MACQUART

MACQUART, 1835, Hist. Nat. Dipt., II, p. 38.

This genus has been reviewed by Aldrich<sup>1</sup> (1930) and Lopes<sup>2</sup> (1937), and both discussed the habits of the species. An un-

<sup>1</sup> Proc. U. S. N. M., LXXXVIII, Art. 9, pp. 1-27.

<sup>2</sup> Arch. Inst. Biol. Veg. (Brazil), III, pp. 257-293.

fortunate error has crept into the literature through the use of the words "army ants" in the note forwarded to Dr. Aldrich. It is true that I observed and captured specimens over moving columns of army ants of the genus *Eciton*, but most of the specimens captured were associated with "ant armies"—that is, enormous numbers of ants much smaller than most *Eciton*. It would scarcely be true that *Stylogaster* could not be an internal parasite of ants as large as *Eciton*, but they could not be of the ants comprising the armies I observed most frequently. In the third paragraph of my note published by Dr. Aldrich (p. 5) the words "army ants" should be changed to "ant armies" in order to present a true picture. I may further add that I do not believe these were actually ant armies on the war path. It is much more likely that they were entire ant colonies moving to a new home.

In the Aldrich key to females, *S. speciosa* (couplet 7) belongs in the first division of the genus and will not trace out, while in couplet 7 of the Lopes key, *ethiopa* Townsend does not belong but actually traces to couplet 8. Sr. Lopes correctly placed *speciosa*, and the position of *ethiopa* is corrected in the following key.

Although most of the species are represented in the Museum Collection it has been necessary to rely upon descriptions in order to include some of the species, and free use has been made of the keys in the above mentioned works. The excellent illustrations by Lopes will greatly facilitate the identification of the species.

## TABLE OF SPECIES

## MALES

- 1.—Ocellar triangle long, almost or quite reaching the frontal lunule.....2.  
Ocellar triangle short, rarely extending beyond the middle of the front.....9.
- 2.—Ocellar triangle opaque or scarcely shining (eastern United States)....  
.....*neglecta* Williston.
- Ocellar triangle polished.....3.
- 3.—Middle tibiae with dense black hair on the apical half of the ventral surface.....4.

- Middle tibiae with short sparse hair on whole length.....5.
- 4.—First segment of middle tarsi with an anterior swelling before the middle bearing six erect, black spinose hairs in a row (Brazil).....  
.....*ornatipes* Kroeber.  
Middle tarsi simple, the first segment not swollen (Costa Rica).....  
.....*decorata* Aldrich.
  - 5.—Basal segment of the middle tarsi normal.....6.  
Basal segment of the middle tarsi with long bristles apically, the second with dense hair on basal half.....*tarsata* Lopes.
  - 6.—Posterior tibiae with white or yellow preapical band.....7.  
Posterior tibiae dark yellow, the apical fifth brown (Panama).....  
.....*indistincta* Aldrich.
  - 7.—Posterior tibiae black, with broad base and preapical band pale...8.  
Posterior tibiae with the apex black, the dark portion before the preapical band reddish brown, not black (Brazil). *longicornis* Lopes.
  - 8.—Third antennal segment only a little longer than the second on the outer side (Brazil).....*nigrifrons* Lopes.  
Third segment twice as long as second on outer side (Guiana) *geijskesi*, n. sp.
  - 9.—First abdominal segment broadly yellow at the sides.....12.  
First abdominal segment dark in color laterally, at least strongly stained with brown.....10.
  - 10.—Apical sternite with cluster of black setulae on each side of a broad deep median emargination (Central America).....*minuta* Townsend.  
Apical sternite without setulae...11.
  - 11.—Middle third of posterior femora and preapical fifth of their tibiae whitish (Panama).....*banksi* Aldrich.  
Posterior femora and tibiae almost unicolorous brownish (Central America).....*apicalis* Aldrich.
  - 12.—Third antennal segment three times as long as the second on the outer side; bristles on sides of basal two abdominal segments wholly pale (Guiana).....*fasciata* Aldrich.

- Third segment not twice as long as the second; bristles on basal abdominal segments mostly black.....13.
- 13.—Sides of the fourth abdominal tergite greatly produced as ventral lobe and bearing bristles posteriorly (Guiana).....*breviventris* Aldrich. Sides of abdominal segments normal.....14.
- 14.—Front, except the lateral margins, uniformly dull brownish red, the orbits brown (Panama).....*curranii* Aldrich. Front differently colored.....15.
- 15.—Last section of fourth vein nearly straight, the apical cell narrowing from the posterior crossvein to the apex.....16.
- Last section of fourth vein very strongly curved, the apical cell wide to well beyond the posterior crossvein.....18.
- 16.—Fifth sternite bearing two groups of black setulae before the apex (Central America).....*pectinata* Aldrich. Fifth sternite without such setulae.....17.
- 17.—Fifth sternite with a row of backwardly directed fine bristles on the apex (Guatemala).....*bequaerti*, n. sp. Fifth sternite without bristles apically (Guiana, Costa Rica).....*rectinervis* Aldrich.
- 18.—Anterior coxae with long, soft yellow hair in front and behind at apex.....19.
- Anterior coxae with black hair in front at apex (Central and South America).....*stylosa* Townsend.
- 19.—Mesopleura mostly brown, antennae broadly black apically on upper half; abdomen with blackish fasciae (Brazil).....*stylatus* Fabricius. Mesopleura reddish yellow, antennae all reddish yellow; abdomen with weak brownish fasciae (North America).....*biannulatus* Say.
- a little beyond the middle of the front.....11.
- 2.—Ocellar triangle polished.....4. Ocellar triangle subopaque, scarcely shining.....3.
- 3.—Ovipositor almost three times as long as the abdomen, with preapical yellow band (Brazil).....*macrura* Lopes. Ovipositor little more than twice as long as the abdomen, the apex very broadly yellow (United States).....*neglecta* Williston.
- 4.—Bristles of the first abdominal segment black.....5. Bristles of the first abdominal segment all yellowish.....6.
- 5.—Apical segment of ovipositor narrowly yellow at base; white band of hind tibiae almost all black haired (Peru).....*peruviana* Aldrich. Apical segment of ovipositor yellowish on basal half; white band of hind tibiae pale pilose except below (Brazil).....*australis* Lopes.
- 6.—Posterior crossvein almost parallel with the wing margin; posterior tibiae with white annulus.....7. Posterior crossvein nearly transverse; hind tibiae not white annulate (Panama).....*panamensis* Aldrich.
- 7.—Apical segment of the ovipositor black pilose on whole length.....8. Apical segment of the ovipositor white haired on basal half (Panama).....*speciosa* Aldrich.
- 8.—Anterior and middle trochanters yellow.....9. Anterior and middle trochanters castaneous (Brazil).....*tarsata* Lopes.
- 9.—Third vein ending well before the tip of the wing.....10. Third vein ending very slightly before the tip of the wing (Guatemala).....*azteca*, n. sp.
- 10.—White preapical band on hind tibiae with black hair only above (Central America).....*ethiopa* Townsend. White band with only a few white hairs (Brazil).....*ornatipes* Kroeber.
- 11.—Second and third abdominal segments entirely yellow (Bolivia).....*abdominalis* Kroeber.

## FEMALES

- Second and third segments with at least pale brown fasciae.....12.
- 12.—Second and third segments with only narrow brownish posterior fasciae (United States)....*biannulata* Say.  
Abdominal segments with broad blackish fasciae or mostly black.....13.
- 13.—First abdominal segment with black bristles laterally.....15.  
First segment with only yellow bristles.....14.
- 14.—Second segment of ovipositor white and with white hair on basal half (Panama).....*speciosa* Aldrich.  
Second segment of ovipositor black on basal half (Brazil).....*stylata* Fabricius.
- 15.—Front brownish red, the orbits brown; ocellar triangle scarcely passing the anterior ocellus (Panama).....*currani* Aldrich.  
Front black at the vertex and sometimes on whole length.....16.
- 16.—Second segment of ovipositor white except at base (Panama).....*apicalis* Aldrich.  
Second segment of ovipositor not white.....17.
- 17.—Posterior tibiae with broad whitish or pale yellowish preapical band (Panama).....*banksi* Aldrich.  
Posterior tibiae not conspicuously banded with pale color, the apex sometimes broadly black.....18.
- 18.—Ocellar triangle extending only slightly beyond the ocelli and rounded in front (Central America).....*stylosa* Townsend.  
Ocellar triangle extending to near the middle of the front.....19.
- 19.—Pleura wholly yellowish.....20.  
Mesopleura shining brown (Central America).....*minuta* Townsend.
- 20.—Fourth abdominal segment wholly concealed by the third laterally (Guiana).....*breviventris* Aldrich.  
Fourth abdominal segment visible on its whole length (Guiana, Costa Rica).....*rectinervis* Aldrich.

#### *Stylogaster rectinervis* Aldrich

ALDRICH, 1930, Proc. U. S. N. M., LXXVIII, Art. 9, p. 23.

The type male is in the American Museum collection, having been donated by the New York Zoological Society through Dr. William Beebe, together with the types of *breviventris*. Through a misunderstanding Dr. Aldrich recorded the types as being in the Canadian National Collection. In both these species the abdomen is short and broad.

*S. rectinervis* is peculiar in that the posterior tibiae are produced as a strong, triangular spur at the apex in the male. I do not have a female before me so do not know whether the character occurs also in this sex.

I strongly suspect that only the type male belongs to this species; the male from Costa Rica in Dr. A. L. Melander's collection is probably a distinct species, and the absence of the yellow preapical band on the posterior tibiae of the Kartabo female indicates that the specimen represents a distinct form. I have not seen any other species in which the two sexes displayed such differences in leg coloration. If the female of *rectinervis* has a pale preapical fascia it will trace to *banksi* Aldrich and not to *rectinervis* as in the above key.

#### *Stylogaster geijskesi*, new species

Black and yellow; hind femora without long hair; front wholly black; antennae elongate. Length, 8 mm.

MALE.—Front and occiput black, the front opaque, the ocellar triangle extending almost to the yellow lunule, broad and shining, the pollen on the occiput golden yellow, becoming white below. Face, cheeks and lower occiput yellow, silvery white pollinose. Antennae yellow, the third segment orange, broadly black above, almost three times as long as the second on the outer side, the second black above; arista wholly black. Proboscis wholly black, the basal section a little longer than the abdomen.

Thorax yellow; mesonotum black, the humeri yellow; posterior calli and a transverse prescutellar spot luteous; notopleura black, the pleura with a broad brown band extending over the mesopleura and onto the sternopleura. Hair black. Scutellum brownish, paler on the sides, with thin white pollen.

Legs yellow, simple; posterior femora with very broad basal and preapical black bands, their tibiae black with broad basal and preapical yellow bands, the tarsi wholly black. Hair black, short, yellow on the anterior four tibiae except on the anterior surface of the middle pair and the basal half of the posterior surface of the front pair.



Wings tinged with brown except posteriorly; apical cell long but only a little narrower than the submarginal cell, the last section of the fourth vein carried well out in line with the preceding section before curving forward, the third vein ending conspicuously before the tip of the wing. Knob of halteres yellow, the stem brown.

Abdomen dark rusty reddish, becoming brown apically, the first segment black with the sides yellow, the second with a small yellow spot in front on each side; second segment with rather narrow white pollinose basal fascia, the third to fifth each with a broad cinereous pollinose basal fascia, the ground color partly black beneath them. Hair black; yellow on the sides of the first segment and on the pollinose fasciae laterally. Genitalia mostly reddish yellow, the hair black. All the sternites apparently absent, but there may be a very small fifth one.

**HOLOTYPE.**—Male, Serabreck, Surinam, May, 1941 (Hermans), received from Dr. D. C. Geijskes.

#### *Stylogaster azteca*, new species

Black and yellow, the abdomen with broadly interrupted pale fasciae. Length, about 6 mm.

**FEMALE.**—Face, cheeks and posterior oral border pale yellow, silvery white pollinose; front and occiput black, the occiput with white pollen and hair. The front becomes brown anteriorly, is opaque laterally, with the orbits white on more than the anterior half, the ocellar triangle shining, broad and reaching the lunula broadly. Antennae short, pale orange, the basal segment yellow, the second brown above, three-fourths as long as the third, the third broadly brown above except basally. Proboscis black, only the labellae yellow.

Pleura and humeri pale yellow, a broad brown band extending across the mesopleura and onto the upper part of the sternopleura. Dorsum of the thorax shining black, the scutellum and the posterior border of the mesonotum, broadly expanded in the middle, luteous, the scutellum darkened on the disc. Hair shining brown in some lights, the bristles black.

Legs pale yellow, the posterior coxae partly shining reddish brown; posterior femora reddish yellow with two broad black bands, their tibiae reddish yellow with the broad apex black and a narrow brown band beyond the middle, the posterior tarsi wholly black. Hair black, short, yellow on the middle tibiae except in front and on the anterior tibiae beyond the basal third.

Wings cinereous hyaline; third vein ending only slightly before the wing-tip, the apical cell narrow, the last section of the fourth vein gently curved. Halteres yellow.

Abdomen dark brown with four pairs of subtriangular reddish yellow spots forming broadly interrupted fasciae on the second to fifth segments, the sides of the first segment yellow. Hair black, yellow on the sides of the first segment and on the yellow spots. Ovipositor black,

the basal segments and base of the terminal segment rather broadly reddish, the hair all black.

**HOLOTYPE.**—Female, Sa. Emilia Pochuta, Guatemala, February–March, 1931 (J. Bequaert).

#### *Stylogaster bequaerti*, new species

Dark brownish and yellow, the pale abdominal spots narrowly connected in front; posterior femora with long pile. Length, 5.5 mm.

**MALE.**—Face, cheeks and posterior oral margin yellow, silvery white pollinose. Front opaque brown, the ocellar triangle shining, extending to the middle of the front, its border reddish yellow. Occiput black, white pollinose and with white hair. Antennae short, reddish, the first segment yellow, the third mostly blackish, with a large oval spot basally above and most of the lower border broadly reddish. Proboscis with almost the basal half and labellae yellow.

Pleura and humeri yellow, the dorsum brown, a broad brown band extending over the mesopleura; posterior calli luteous. Hair black.

Legs yellow; posterior coxae shining brown except on front, their femora brownish red, yellow below, with a very broad preapical brown band and a broad basal band that leaves only the narrow base pale; posterior tibiae and tarsi brownish red, the tarsi becoming brown apically; hair black, yellow on the posterior surface of the middle tibiae, and on the front tibiae except basally and on the basal half of the anterior surface and on the posterior surface of the first segment of the anterior four tarsi. The front coxae have long black hair on the apex in front and behind.

Wings cinereous hyaline; apical cell narrow, the third vein ending a little before the tip of the wing, the apical section of the fourth vein gently curved. Knob of halteres blackish, the stem reddish yellow.

Abdomen brown, broadly yellow on the sides, the second to fourth segments with yellow fasciae that are narrow in the middle or weakly interrupted, those on the third and fourth segments very broad, the first and fourth narrow. Hair all black. Genitalia brown above, yellow below, where there is some yellow hair. Apex of fifth sternite with row of backwardly directed contiguous fine black bristles, and without other hair or setulae.

**HOLOTYPE.**—Male, Guatallon, Sa. Adelaida, Guatemala, March–April, 1931 (J. Bequaert).

### Lauxaniidae

#### PHYSEGENUA MACQUART

A study of the material in the collection indicates that a number of species have been confused under the name *vittata* Macquart. I have retained the name

*vittata* for one of the species, but it is possible that examination of the type may prove that the species is not in the collection.

The following key will separate the forms before me.

#### TABLE OF SPECIES

- 1.—Face with black markings . . . . . 2.  
Face without black markings . . . . . 6.
- 2.—Face with a median black vitta below . . . . . 3.  
Face without a median black vitta (Brazil, Panama) . . . . . *vittata* Macquart.
- 3.—Sternopleura with broad blackish stripe or mostly blackish . . . . . 4.  
Sternopleura wholly pale; mesopleura with moderately large opaque black spot behind (West Indies) . . . . . *obscuripennis* Bigot.
- 4.—Front with a slender brown median vitta continuous with the facial vitta (Brazil) . . . . . *lineata*, n. sp.  
Front without median vitta . . . . . 5.
- 5.—Mesopleura with a large, opaque black spot below the bristle (Central America) . . . . . *centralis*, n. sp.  
Mesopleura with a very weak opaque blackish spot (South America) . . . . . *eronis*, n. sp.
- 6.—Mesopleura with opaque black spot adjacent to the bristle (Brazil) . . . . . *ferruginea* Schiner.  
Mesopleura without distinct spot (Panama) . . . . . *banksi*, n. sp.

#### *Physegenua vittata* Macquart

MACQUART, 1847, Dipt. Exot., Suppl. III, p. 60 (f.).

This species has apparently not been correctly identified since it was described. Macquart makes no mention of a median black stripe on the face, a character possessed by all the forms previously identified as *vittata*. There is a specimen collected by Nathan Banks at Frijoles, Canal Zone, July 10, 1924, that agrees with the description, and I am considering that it is *vittata*. The black stripes on the sides of the face are broader than in allied forms, and the mesonotal vittae are stronger and united posteriorly where they cover the disc of the scutellum. It is possible that this is not

*vittata*, but it is closer to it than the other species.

#### *Physegenua ferruginea* Schiner

SCHINER, 1868, Novara, p. 277.

Ferruginous, the front with three black spots, mesonotum with two or four obscure, narrow, darker vittae; mesopleura with a subrectangular, opaque black spot below the bristle; apical abdominal segment with median black spot; anterior tibiae and tarsi, an incomplete preapical band on the front femora and the posterior tibiae blackish, the middle tibiae mostly brownish.

A series of both sexes from Brazil.

It is possible that more than one species will agree with the original description. The opaque black spot on the pleura usually partly surrounds the bristle, and usually only the dorsocentral vittae are distinct. They are rarely brownish.

#### *Physegenua banksi*, new species

Agrees with *ferruginea* but has only a faint indication of a small opaque spot below the mesopleural bristle and well separated from it. Length, about 4.5 mm.

Types.—Holotype, male, and allotype, female, Frijoles, Canal Zone, July 10, 1924 (N. Banks), in Museum of Comparative Zoölogy.

Unfortunately the male abdomen is damaged and it is not advisable to spread the genitalia which are no doubt distinct from *ferruginea*. This may be concluded from the fact that in the *vittata* group the absence of the black pleural spot is accompanied by genitalic differences.

#### *Physegenua lineata*, new species

Ferruginous, front yellowish with median brown vitta. Length, 4 to 5 mm.

Male.—Front yellowish, the ocellar triangle and a spot at the base of the anterior bristles black; a linear brown line extends from the ocelli, passes between the antennae and joins the median black facial vitta. Occiput reddish yellow; a broad black stripe extends over the sides of the face from the eye to the groove just above the oral margin. Face, polished, translucent, the vitta moderately broad. Antennae reddish, the third segment usually darkened apically; arista short plumose. Palpi yellowish.

Thorax with a pair of blackish or dark ferruginous vittae along the dorsocentral lines; pleura with broad brown stripe along the upper margin in front of the wings, the sternopleura almost all

blackish or brownish, and there is a large brown spot in front of the halteres. Free border of the scutellum yellowish. There is just a trace of an opaque spot on the mesopleura.

Legs reddish yellow; anterior tibiae and tarsi brown to black, their femora with a preapical black band.

Wings brownish in front, broadly so apically. Squamae with brownish border and fringe. Halteres reddish yellow.

Abdomen with a black spot on the apex of the sixth segment, and the ventral surface in large part black or brown.

FEMALE.—Differs only sexually.

TYPES.—Holotype, male, and allotype, female, Corumba, Brazil (Williston Collection). Paratypes, three females, Corumba, and four males and seven females, Bauru, São Paulo, December 4, 1919 (Cornell University Expedition).

This species is easily recognized by the vittate front.

#### *Physegenua eronis*, new species

Ferruginous, with black and brown markings. Length, 4 to 4.5 mm.

This species is similar in color to the preceding but lacks the brown line on the front. The facial vitta is about five times as long as wide. In the female the anterior and ventral edges of the sternopleura are pale.

TYPES.—Holotype, male, allotype, female, and paratypes, two males and three females, Brazil (Williston Collection), male and three females, British Guiana, and one female from Paramaribo, Surinam, in the Cornell University Collection.

#### *Physegenua centralis*, new species

Ferruginous, with black and brown markings. Length, 4.5 mm.

MALE.—Similar to *lineata* but without the median frontal vitta; mesopleura with a moderately large opaque black spot well below the bristle; and the black on the sternopleura is much less extensive, leaving the broad anterior border reddish. The black stripe on the side of the face extends little more than half way to the oral margin.

TYPES.—Holotype, male, British Honduras, November, 1928; allotype, female, Penas, Bauderas Bay, Mexico, November 15, 1937. Paratype, male, La Ceiba, Honduras, October 10, 1916.

#### *Physegenua obscuripennis* Bigot

*Sciomyza obscuripennis* Bigot, 1857, in Sagra, Hist. Nat. Cuba, VII, p. 826.

*Lauxania variegata* Loew, 1861, Cent., I, No. 83.

This species, which resembles *eronis*, is readily recognized by the wholly pale sternopleura. It is the only species seen from the West Indies and is well represented in the collection. Apparently all West Indian records of *vittata* refer to *obscuripennis*.

#### PSEUDOGRIPHONEURA HENDEL

This genus is well represented in the American tropics. It is close to *Xenochaetina* Malloch but lacks setulae on the second vein. It is readily separated from *Neogriphoneura* by the presence of only two strong dorsocentrals, rarely a third weak one as in *Pseudocaliope*. There is only one sternopleural bristle.

The following key includes the species known to me, but there may be others described.

#### TABLE OF SPECIES

- 1.—Legs wholly pale, yellowish or whitish ..... 30.  
Legs in part black or brown, at least the front tarsi brownish. .... 2.
- 2.—Mesonotum with two or more vittae, if with median and lateral vittae, the median one rarely weak, the vittae sometimes formed of rows of spots. .... 3.  
Mesonotum not vittate. .... 14.
- 3.—Mesonotum grayish, with two or four longitudinal brown vittae. .... 4.  
Mesonotum differently colored. .... 8.
- 4.—Apices of abdominal segments broadly whitish pollinose. .... 5.  
Abdomen without white pollinose fasciae. .... 6.
- 5.—Abdominal segments broadly reddish yellow apically (Central and South America) ..... *variata* Hendel.  
Abdominal segments wholly dark in ground color, the apices broadly silvery gray pollinose (Venezuela) ..... *cinerella* Hendel.
- 6.—Wings cinereous hyaline (Costa Rica, Panama) ..... *hyalipennis* Malloch.  
Wings partly brownish. .... 7.
- 7.—Wings strongly tinged with brown, darkened in front, a pale median

- vitta on the basal half (Peru).....  
.....*melanoptera* Hendel.  
Wings brown along the costa and apically, cinereous posteriorly (Brazil).....*cormoptera* Hendel.
- 8.—Mesonotum shining rusty reddish, with six shining brown vittae (Guiana).....*diversa* Curran.  
Thorax differently colored.....9.
- 9.—Mesonotum opaque black, with four white vittae, the median ones bordering the scutellum (West Indies).....*albovittata* Loew.  
Mesonotum differently colored....10.
- 10.—Mesonotum with three brown or cinereous vittae.....11.  
Mesonotum with numerous brown spots forming lines (Puerto Rico).....*vittifacies* Curran.
- 11.—Tibiae pale yellow with the base and apex black.....12.  
Tibiae brown with the base obscurely reddish or with yellow band.....13.
- 12.—The brown median vitta extends over the disc of the scutellum (Costa Rica).....*marmorata* Malloch.  
The scutellum is wholly cinereous (Guiana).....*claripennis* Curran.
- 13.—Mesonotum cinereous, with median and lateral brown vittae (Florida).....*cineracea* Coquillett.  
Mesonotum brown with narrow cinereous vittae.....*altera*, n. sp.
- 14.—Tibiae and tarsi almost all whitish.....21.  
Anterior tibiae brownish or their tarsi all brown.....15.
- 15.—Mesonotum shining ferruginous or reddish yellow; femora blackish (Guiana).....*luteipennis* Curran.  
Mesonotum blackish in ground color.....16.
- 16.—Base of wing not or scarcely darkened.....18.  
Base of wing broadly blackish....17.
- 17.—Thorax opaque blackish (Panama).....*aries*, n. sp.  
Thorax subshining blackish brown or ferruginous (Guiana).....*nigra* Curran.
- 18.—Abdomen almost uniformly colored, paler areas not strongly contrasting.....19.
- Disc of basal segments and their bases yellowish red, strongly contrasting with the blackish areas (Panama).....*zeteki*, n. sp.
- 19.—Middle tibiae black on apical two-thirds.....20.  
Middle tibiae with the apical fifth black (Panama).....*siesta*, n. sp.
- 20.—Front shining black, the anterior border yellowish (Panama).....*lutzi*, n. sp.  
Front opaque, grayish (Panama).....*rana*, n. sp.
- 21.—Middle of face shining black.....22.  
Middle wholly pollinose.....28.
- 22.—Front with opaque black markings.....23.  
Front without black markings (Florida).....*incongrua* Malloch.
- 23.—Front with a rather quadrate opaque black marking on anterior half or more.....26.  
The opaque black marking is wholly or almost wholly divided by the frontal triangle.....24.
- 24.—Opaque black markings in the form of two triangles, the orbits polished (eastern United States).....*intermedia* Malloch.  
The opaque triangles are separated by a fine line anteriorly, the orbits not wholly shining.....25.
- 25.—The opaque blackish spot along the orbits separated from the median black spots (Texas).....*signatifrons* Coquillett.  
The opaque black spots contiguous, the orbits shining only at the bases of the bristles (eastern United States).....*scutellata* Malloch.
- 26.—The opaque black spot is separated from the anterior ocellus by more than the length of the ocellar triangle.....27.  
The opaque spot is much less widely separated from the anterior ocellus (eastern United States and Canada).....*gracilipes* Loew.
- 27.—Middle of parafrontal strongly aciculate or weakly striate (Florida).....*floridensis*, n. sp.  
Parafrontal smoothly polished (Panama).....*proana*, n. sp.

- 28.—Polished parafrontal stripe not interrupted between the bristles (Panama).....*anora*, n. sp.  
Polished parafrontal stripe distinctly interrupted between the bristles... 29.
- 29.—Mesonotum with rather thin cinereous pollen (Panama).....*ludens*, n. sp.  
Mesonotum with thick ochraceous pollen (Panama).....*aurescens*, n. sp.
- 30.—Mesonotum blackish in ground color..... 31.  
Mesonotum pale, rarely with brown vittae..... 34.
- 31.—Mesonotum shining black..... 32.  
Mesonotum thickly pollinose..... 33.
- 32.—Median frontal vitta shining black, the orbits opaque (Costa Rica).....*lateralis* Malloch.  
Median frontal vitta mostly opaque black (Costa Rica).....*aliena* Malloch.
- 33.—Base of scutellum very broadly violaceous (Panama).....*viola*, n. sp.  
Scutellum wholly grayish (Panama).....*pallipes* Malloch.
- 34.—Mesonotum with three or five weak brownish vittae (Brazil, Colombia).....*elegantula* Frey.  
Mesonotum without distinct vittae... 35.
- 35.—Face with a black median spot below (West Indies).....*anomala* Curran.  
Face without black spot below... 36.
- 36.—Scutellum wholly pale..... 38.  
Scutellum with one or two black spots apically..... 37.
- 37.—Scutellum with two black spots apically (Panama).....*lina*, n. sp.  
Scutellum with a single black spot (Brazil).....*willistoni*, n. sp.
- 38.—Antennae mostly deep black..... 39.  
Antennae mostly reddish, the third segment partly reddish brown (Brazil).....*plana*, n. sp.
- 39.—Antennae all black (Panama).....*celeste*, n. sp.  
Third antennal segment reddish on basal half (Panama).....*picticornis*, n. sp.

***Pseudogriphoneura altera*, new species**

Dark brownish; face and front with opaque

markings; thorax with narrow cinereous vittae. Length, 4.25 mm.

MALE.—Head black, a reddish triangle on each side of the anterior border of the front. Front a little wider than long, brownish gray, the vertex and parafrontal stripes more ochraceous, the latter with a narrow brownish stripe above, the anterior angles whitish; above the white spot an opaque black triangle that extends more than half way to the vertex along each orbit. Anterior frontal much shorter than the posterior; ocellars long. Occiput grayish brown, the orbits whitish below. Face cinereous pollinose, with a pair of transverse, dorsally convex spots just below the middle and a large orbital triangle above opaque brown. Basal antennal segments black, the third missing. Palpi black.

Thorax brownish, with brown pollen, the mesonotum grayish behind and with three narrow gray vittae on the posterior three-fourths and indications of an interrupted lateral stripe, inside of which is a more blackish stripe; pleura with a large cinereous area in front and a smaller one below the squamae. Scutellum very gently convex, brown pollinose.

Legs blackish; tibiae with a narrow, subbasal pale yellow band; basal segments of the posterior four tarsi dull yellowish.

Wings with luteous tinge, the veins luteous. Squamae brown. Halteres yellow.

Abdomen shining brown, the genitalia of medium size.

HOLOTYPE.—Male (Williston Collection). The specimen is probably from Brazil.

***Pseudogriphoneura aries*, new species**

Black, the abdomen with reddish markings; thorax opaque; legs partly yellow; base of wings black. Length, 3 mm.

MALE.—Head black; front wider than long, dull black, a median linear triangle in front of the ocelli and the front border rather reddish, the anterior border with cinereous pollen laterally; bristles arising from bare spots; anterior orbitals much smaller than the posterior; ocellars moderately long. Lower occipital and the facial orbits whitish pollinose; face dull brownish black, with slight grayish sheen above in some lights. Antennae blackish, the third segment reddish basally; arista long plumose. Palpi black.

Thorax opaque black, the mesonotum with brown tinge in some lights and slightly slaty green laterally, with a pair of very obscure darker vittae, the pleura more brownish white pollinose in front. Scutellum slightly convex, with brown pollen apically.

Legs blackish; basal three tarsal segments yellowish; posterior four tibiae yellowish on apical half or more.

Wings cinereous hyaline, the base broadly black. Squamae brown. Halteres yellow.

Abdomen black, the disc reddish, the apices

of the third and following segments reddish yellow. Genitalia small reddish yellow. Abdomen with brownish pollen, the sides of the third and fourth segments silvery white.

**HOLOTYPE**.—Male, Barro Colorado Island, Canal Zone, January 19, 1929 (Curran).

This species is much smaller than *nigra* Curran and is very much darker. *P. nigra* is somewhat shining and more brownish.

***Pseudogriphoneura zeteki*, new species**

Blackish, the abdomen partly reddish, the legs partly yellow. Length, 3 to 4 mm.

**MALE**.—Front and upper half of the occiput black, the face and lower half of the occiput mostly reddish brown to brownish red. Front higher than wide, opaque, thinly brownish cinereous pollinose, a subshining stripe connecting the orbitals, the upper orbits broadly brown; anterior orbital much shorter than the posterior; ocellars short. Occiput with white pollen along the lower orbits. Face cinereous pollinose, very slightly convex. Antennae brownish red, the arista long plumose. Palpi black.

Thorax brownish, the mesonotum black except laterally, brown pollinose, the pleura with some reddish areas, the propleura yellow; hair black. Scutellum black, brown pollinose.

Legs black, the apices of the femora reddish or yellowish; middle tibiae and tarsi, the bases and apices of the hind tibiae and the basal four tarsal segments yellowish, the posterior tibiae mostly brownish yellow or red, the apical segments of the front tarsi rather reddish; trochanters and posterior four coxae reddish. Front tibiae not swollen.

Wings cinereous, the veins luteous. Squamae with brown border and fringe, the halteres yellow.

Abdomen black with reddish and reddish yellow markings; disc of second to fourth segments broadly reddish, the fifth and sixth with a broad median yellow vitta, the bases of the third to sixth segments pale fasciate, the bands broadened and white pollinose laterally and usually connected on the fourth to sixth segments. Venter reddish yellow. Genitalia large, mostly reddish.

**FEMALE**.—The front slightly wider, almost as wide as long; all the tarsi yellowish.

**TYPES**.—Holotype, male, allotype, female, and paratypes, three males and five females, Barro Colorado, Canal Zone, December 21, 1928, to February 14, 1929 (Curran), the holotype and allotype, December 22 and January 7, respectively.

***Pseudogriphoneura lutzi*, new species**

Shining blackish; face pollinose; legs partly yellowish. Length, 3.25 mm.

**MALE**.—Head black, the front obscurely

pollinose, as wide as long, narrowing anteriorly; anterior orbitals much shorter than the posterior; ocellars weak; verticals long and strong. Occiput brown pollinose. Face gently receding, scarcely convex, the pollen brownish gray, cinereous along the orbits. Antennae black; arista very short plumose. Palpi black. The anterior border of the front is reddish yellow.

Thorax shining black, brown pollinose; humeral area dark ferruginous. Scutellum gently convex.

Legs black; bases of posterior four tibiae reddish yellow, their tarsi somewhat reddish basally; front tibiae conspicuously swollen and appressed.

Wings cinereous with luteous tinge, the veins luteous. Squamae brownish. Halteres yellow.

Abdomen shining black with some castaneous areas on the disc. Genitalia small, black.

**HOLOTYPE**.—Male, El Volcan, Chiriqui, Panama, February 22, 1936 (F. E. Lutz).

The abdomen has paired castaneous spots on the intermediate segments, the spots basal and rounded behind. The pale areas probably vary in extent.

***Pseudogriphoneura siesta*, new species**

Ferruginous and black, the legs partly yellowish. Length, 3.5 mm.

**MALE**.—Head dark brown; front shining, with brown pollen, slightly wider than long; anterior orbital much shorter than the posterior, ocellars minute; anterior border more or less reddish. Face and occiput brown pollinose, the orbits cinereous; face scarcely convex. Antennae black, the base of the third segment reddish; arista moderately plumose.

Thorax dark ferruginous, the pleura becoming dark below; pollen brown; scutellum gently convex.

Legs black; posterior four tarsi yellowish, with dark apex; middle tibiae yellowish with the apical fifth black; posterior tibiae yellowish with the basal fourth black and an incomplete subbasal brown band on the ventral half; anterior tibiae rather strongly swollen.

Wings with a slight brown tinge, the veins luteous. Squamae with brown border and fringe. Halteres yellow.

Abdomen castaneous with the apices of the segments black, or practically all black.

**FEMALE**.—The front tibiae and tarsi are slightly less swollen.

**TYPES**.—Holotype, male, allotype, female, Barro Colorado, February 14, 1929; paratype, male, Corozal, Canal Zone, January 21, 1929 (Curran).

***Pseudogriphoneura rana*, new species**

Black, tibiae pale basally; wings mostly

brownish; third antennal segment with reddish basal spot above. Length, 4 to 4.25 mm.

**FEMALE.**—Head black, front longer than wide, gray pollinose, a greenish tinge showing through the pollen; vertex and parafrontal lines brownish, the bristles arising from bare spots; anterior frontals much smaller than the posterior; ocellars short. Lower occiput and face thickly cinereous white pollinose. Antennae black, the third segment with a conspicuous reddish spot above at the base; arista long plumose. Palpi black.

Thorax black; mesonotum with a broad band of pale brownish pollen in the middle, extending over the scutellum, bordered with grayish, outside of which there is a broad, almost bare, shining stripe, the lateral margins whitish. Pleura with cinereous pollen, but there is a broad brown stripe extending the whole length near the upper margin.

Legs black; tips of the femora, basal fifth or less of the tibiae and the basal two tarsal segments yellowish, the tarsi brown apically.

Abdomen shining black or dark castaneous, obscurely brownish pollinose.

**TYPES.**—Holotype, female, and paratype, female, Barro Colorado Island, Canal Zone, February 14 and January 11, 1929 (Curran).

#### *Pseudogriphoneura floridensis*, new species

Black, tibiae yellow; front with opaque black spot. Length, 3.5 mm.

**MALE.**—Front shining, the anterior border opaque black, the median vitta opaque black on more than the anterior half, the dull area transverse above and widely separated from the anterior ocellus; parafrontals with distinct, fine ridges on the median half, anterior orbital much shorter than the posterior. Ocellars short. Occiput brown pollinose below. Face shining black, the orbits broadly white. Antennae reddish, the third segment mostly brown; arista long plumose. Palpi black.

Thorax black, with brown pollen; a broad band of whitish pollen extends across the pleura and well onto the mesonotum in front of the suture, while the broad posterior border of the mesonotum bears cinereous or yellowish tinged pollen, the pollen on the apical portion of the flat, dull black scutellum brown.

Coxae and femora black, the tips of the femora, the tibiae and tarsi pale yellow, the tarsi somewhat darkened apically. Tibiae all slender.

Wings with luteous tinge, the veins yellowish. Squamae and halteres reddish yellow.

Wings with luteous tinge and with luteous veins. Squamae brownish. Halteres yellow.

Abdomen shining black, with thin brownish pollen. Genitalia of moderate size.

**HOLOTYPE.**—Male, Jacksonville, Florida, March, 1911.

While this species closely resembles *gracilipes* Loew in color it may be readily distinguished by the smaller opaque black spot on the frontal vitta, the roughened parafrontals and the very different genitalia.

#### *Pseudogriphoneura proana*, new species

Shining black; tibiae and tarsi whitish; thorax with bicolored pollen. Length, 3.5 mm.

**MALE.**—Head black; front a little wider than long, shining, the anterior border white pollinose laterally, the anterior three-fifths of the frontal vitta opaque black; anterior orbital much smaller than the posterior; ocellars very small. Occiput dull black, the orbits cinereous below. Face very gently convex, the orbits broadly white. Antennae reddish, the third segment elongate, mostly black; arista long plumose. Palpi black.

Thorax black, with brown pollen; a broad band of whitish pollen extends across the middle of the pleura and onto the mesonotum in front of the suture, and the posterior border of the mesonotum is broadly cinereous on the sides. Scutellum brown pollinose, the base broadly whitish.

Coxae and femora black; trochanters and apices of the femora reddish yellow; tibiae and tarsi whitish, the tarsi yellowish apically; front tibiae swollen, of almost uniform width except on the strongly narrowed basal fifth.

Wings with luteous tinge and with luteous veins. Squamae brownish. Halteres yellow.

Abdomen shining black, thinly brown pollinose, the genitalia rather small.

**FEMALE.**—Front tibiae slender.

**TYPES.**—Holotype, male, allotype, female, and paratype, male, Barro Colorado Island, Canal Zone, January 7, 1929 (Curran).

This species is very similar in appearance to *floridensis*, but the parafrontals are smooth, the front tibiae of the male are more uniformly swollen, and the genitalia are quite different.

#### *Pseudogriphoneura anora*, new species

Black, the abdomen mostly castaneous or dark ferruginous; tibiae yellow. Length, 3.5 to 4 mm.

**MALE.**—Head black, the front a little wider than long, dull, thinly gray pollinose, a broad parafrontal stripe including the bases of the orbitals, the anterior orbital strong; ocellars short. Posterior orbits and face cinereous pollinose; face very slightly convex. Antennae reddish brown, the base of the third segment paler; arista long plumose. Palpi black.

Thorax black, rather thickly cinereous polli-

nose but still somewhat shining; scutellum flattened.

Legs black, the tibiae and basal three tarsal segments yellow; front tibiae a little swollen. Hair black, yellow anteriorly, on the front tibiae and tarsi.

Wings with brown tinge, the veins luteous. Squamae brown. Halteres reddish or yellowish.

Abdomen ferruginous to castaneous, the tips of the segments blackish. Genitalia brown, of medium size.

FEMALE.—Differs only sexually.

YPES.—Holotype, male, allotype, female, paratypes, male and female, Corozal, Canal Zone, January 16, 1929, and one male, January 22, 1929 (Curran).

#### *Pseudogriphoneura ludens*, new species

Black, tibiae and tarsi yellow; wings brownish. Length, 4 to 4.5 mm.

MALE.—Head black, cinereous pollinose, the facial and posterior orbits more whitish. Front longer than wide, appearing gray from frontal view; anterior orbital shorter than posterior; ocellars short. Occiput with brownish pollen. Face very gently convex. Antennae brownish, the basal segments and base of the third reddish below; arista short plumose. Palpi black.

Thorax black, cinereous white pollinose, the mesonotum less thickly so and with brownish tinge on the disc. Scutellum flat, slate-gray, with the base broadly brownish in the middle.

Legs black, the tibiae and basal three tarsal segments yellow; anterior tibiae and first tarsal segment yellow haired in front.

Wings brownish, pale basally. Squamae brown. Halteres yellow.

Abdomen shining brown or castaneous, with narrow dark median vitta and sides. Genitalia small.

YPES.—Holotype, male, and paratype, male, Barro Colorado Island, Canal Zone, January 7 and February 21, 1929 (Curran).

#### *Pseudogriphoneura aurescens*, new species

Black, the mesonotum with bright ochraceous pollen; tibiae reddish yellow. Length, 4.5 mm.

FEMALE.—Head blackish. Front about as wide as long, with ochraceous pollen, but there is a broad brownish band just before the reddish anterior margin; anterior orbital much shorter than the posterior; no shining parafrontal stripes; ocellars minute. Occiput brown pollinose, the orbits more whitish below. Face gray pollinose, the orbits whitish on reddish ground, not convex. Antennae blackish, the third segment brownish red; arista short plumose. Palpi black.

Thorax black, dark brown pollinose, the mesonotum and scutellum, except on the sides,

densely ochraceous pollinose, somewhat brassy or weakly golden.

Legs black, the tibiae reddish yellow; tarsi yellow.

Wings with luteous tinge, the veins luteous. Squamae brown. Halteres yellow.

Abdomen black, with brassy ochraceous pollen except basally.

HOLOTYPE.—Female, Barro Colorado Island, Canal Zone, December 24, 1928 (Curran).

#### *Pseudogriphoneura viola*, new species

Mostly reddish yellow, the mesonotum black; legs wholly pale. Length, 3.5 mm.

MALE.—Front conspicuously longer than wide, black and reddish in ground color, with cinereous pollen and appearing slate colored; anterior orbital shorter than posterior; ocellars short. Occiput dark, thickly grayish white pollinose. Cheeks brown except along the orbits. Face mostly dark in ground color, thickly whitish pollinose; gently convex. Antennae yellowish; arista brown, long plumose. Palpi brown.

Thorax yellowish, the mesonotum brown; a broad median brownish band across the middle of the pleura and a large brownish spot below the squamae; mesonotum brown pollinose, the median fourth densely cinereous pollinose except just before the scutellum; scutellum cinereous with the base broadly violaceous brown except on the sides.

Legs yellow, anterior tibiae and tarsi with white hair.

Wings with luteous tinge and with luteous veins. Squamae with brown border and fringe. Halteres yellow.

Abdomen yellowish red; genitalia rather large. There is thin brown pollen and stains that may indicate that there are sometimes brownish bands.

HOLOTYPE.—Male, Barro Colorado Island, Canal Zone, December 22, 1928 (Curran).

#### *Pseudogriphoneura linea*, new species

Rusty reddish; legs wholly pale; scutellum with black spot on each side. Length, 3 to 3.5 mm.

MALE.—Front a little wider than long, dull rusty reddish, with paler median stripe and anterior margin; anterior orbital much shorter than the posterior; ocellars short; the orbitals arise from shining spots. Occipital and facial orbits with white pollen; face slightly convex, with brownish yellow pollen; parafrontals marked below by a brown line along the inner margin. Antennae reddish, the third segment darker on the upper half; arista black, long plumose. Palpi reddish brown.

Thorax rusty reddish, with brownish gray



pollen above and cinereous pollen on the pleura; scutellum flattened, dull reddish, a dull blackish spot below and surrounding each apical bristle.

Legs reddish yellow; front tibiae not swollen.

Wings with luteous tinge, the veins luteous. Squamae brownish. Halteres reddish yellow.

Abdomen pale rusty reddish, the apex paler. Genitalia small.

FEMALE.—Differs only sexually.

TYPES.—Holotype, male, and allotype, female, Barro Colorado Island, Canal Zone, February 13, 1929; paratypes, seven males and eight females, Barro Colorado Island, December 22, 1928, to February 21, 1929 (Curran).

***Pseudogriphoneura willistoni*, new species**

Rusty reddish yellow, the scutellum with a small apical blackish spot. Length, 4 to 4.25 mm.

MALE.—Front a little longer than wide, yellowish red, usually somewhat golden about the ocelli; anterior orbital not much shorter than the posterior; ocellars moderately long. Occiput and face cinereous white pollinose, the middle of the face usually brownish in ground color. Antennae pale reddish; arista moderately long plumose. Palpi reddish brown.

Thorax rusty reddish yellow; not shining; mesonotum with dull yellowish red pollen, the pleura white pollinose. Scutellum flattened, the upper surface mostly reddish brown, or at least darker than the border; the apex with a small blackish spot below that is carried narrowly upward to join the dark disc.

Legs reddish yellow.

Wings with luteous tinge, the veins yellowish.

Abdomen with cinereous pollen having violaceous tinge, and with a narrow, sometimes weak, median brown vitta on the third and following segments. Genitalia small.

TYPES.—Holotype, male, and paratypes, three males, Chapada, Brazil (Williston Collection).

***Pseudogriphoneura celeste*, new species**

Rusty reddish yellow; face pollinose; antennae wholly black. Length, 3 mm.

FEMALE.—Front shining, a little wider than long, the anterior border yellowish; anterior orbital about half as long as the posterior; ocellars moderately long. Occiput and facial orbits with whitish pollen; face yellowish, scarcely convex. Antennae wholly black. Palpi black with reddish base.

Thorax rusty reddish, the pleura paler and with thin yellowish pollen. Scutellum flattened.

Legs reddish yellow, the hair all black; tarsi darkened apically.

Wings cinereous hyaline; veins luteous.

Squamae with brownish border and fringe. Halteres reddish yellow.

Abdomen rusty reddish yellow. In the specimen before me it is variously stained with blackish or brown, but it seems likely that the abdomen is normally pale, without dark markings.

HOLOTYPE.—Female, France Field, Canal Zone, January 18, 1929 (Curran).

***Pseudogriphoneura picticornis*, new species**

Rusty reddish yellow, antennae black and orange; legs yellowish. Length, 4 mm.

MALE.—Head rusty reddish, with brownish yellow pollen. Front about as long as wide, with shining vitta extending from the anterior orbital to the vertical bristles; anterior orbital shorter than the posterior; ocellars short. Antennae dull black, the basal half of the third segment dull orange; arista short plumose. Palpi black, reddish below on more than the basal half.

Thorax rusty reddish, slightly shining, the dorsum with grayish brown pollen, the pleura more cinereous, scutellum flat, brownish yellow pollinose.

Legs reddish yellow, front tibiae not conspicuously swollen.

Wings cinereous hyaline; veins dark luteous. Squamae with brown border and fringe. Halteres reddish yellow.

Abdomen shining rusty reddish, obscurely pollinose, the apices of the segments narrowly brownish; a narrow brown median vitta extends from the base of the second segment to the apex. The tip of the abdomen is partly concealed, but the specimen appears to be a male. The genitalia are small.

HOLOTYPE.—Male, Barro Colorado Island, Canal Zone, December 22, 1928 (Curran).

***Pseudogriphoneura plana*, new species**

Rusty reddish yellow; a third, weak dorso-central. Length, 3.25 mm.

MALE.—Front about as long as wide, dull rusty reddish yellow, the vertex and frontal stripes paler; an obscure, median pale vitta in front of the ocelli; orbitals of almost equal length; ocellars moderately long. Occiput and face with yellowish pollen. Antennae reddish, the third segment more or less brownish above except basally; arista long pubescent. Palpi reddish.

Thorax with brownish yellow pollen above and thin whitish pollen on the pleura. Scutellum flattened.

Legs reddish yellow.

Wings with luteous tinge and darker veins. Squamae and halteres yellowish.

Abdomen with brownish yellow pollen, the apices of the segments narrowly brownish, and there is a trace of a slender median brown vitta. Genitalia of moderate size.

**TYPES.**—Holotype, male, Rio de Janeiro, and paratypes, two males, Chapada, Brazil (Williston Collection).

The paratypes are slightly teneral. This species possibly does not belong in this genus, but it seems to fit here better than in any other described.

#### HAAKONIA, NEW GENUS

Related to *Xenochaetina* Malloch. Face shining, convex, abruptly receding below; front longer than wide, gently convex; anterior orbitals almost as strong as the posterior, not or scarcely convergent, both moderately short; ocellars small, reclinate. Two pairs of dorso-centrals, no intra-alar, one sternopleural. Legs, abdomen and wings as in *Xenochaetina*.

**GENOTYPE.**—*Physogenua nigra* Williston.

The single specimen of this species before me is one of the cotypes from St. Vincent. It is very similar to *Xenochaetina flavipennis* Fabricius, but the anterior orbital bristles are a little longer, and the ocellar bristles are reclinate instead of proclinate. There are two small bristles before the furcation of the second and third veins. In *Physogenua* the anterior orbital bristles are more hair-like and strongly convergent, the oral margin is not separated from the facial convexity by a groove, and the wing veins are bare.

It is possible that some of the cotypes of *P. nigra* belong with *flavipennis*; if all but the one before me do, the present specimen may be considered the type. Otherwise the type should be selected from material in the British Museum.

#### NEOGRIPHONEURA MALLOCH

This genus is characterized by the presence of a single sternopleural, three strong dorsocentrals, broad front, and the anterior orbitals are very strong and somewhat convergent, though inclined toward the vertex. The anterior portion of the front is depressed, but there is some variation in this respect. All the species have the arista long rayed above and short rayed below. The species before me are included in the following key. All are rusty reddish yellow.

#### TABLE OF SPECIES

- 1.—A large black spot on the posterior of mesonotum and base of scutellum. . . . . *timida*, n. sp.  
No black on the thorax. . . . . 2.
- 2.—Front with a slender median brown stripe. . . . . *striga*, n. sp.  
Front without dark stripe. . . . . 3.
- 3.—Crossveins brown and distinctly clouded. . . . . *tertia*, n. sp.  
Crossveins yellowish. . . . . *sordida* Wiedemann

#### *Neogriphoneura timida*, new species

Length, 4 to 4.5 mm.

**MALE.**—Front pale rusty reddish yellow to yellow, shining, the ocellar triangle brown; ocellars absent; occiput and face yellowish, the face sometimes mostly whitish, the orbits with white pollen. Antennae pale orange, the arista black. Palpi yellowish.

Thorax yellow, rusty reddish yellow above; mesonotum with a black or brown median stripe beginning well behind the front margin and usually tapering posteriorly, and a large black posterior spot that extends well onto the scutellum and is rather orbicular in shape. Scutellum flat, yellow.

Legs reddish yellow.

Wings with luteous tinge, the veins yellow. Squamae with brown fringe. Halteres yellowish.

Abdomen yellowish, the upper surface mostly rusty reddish yellow. Genitalia small.

**FEMALE.**—Agrees except sexually.

**TYPES.**—Holotype, male, and allotype, female, Patilla Point, Panama, February 1, 1929, and paratypes, four males and five females, same locality, January 15 and February 1, 1929, and one female, Corozal, Canal Zone, January 22, 1929 (Curran).

#### *Neogriphoneura striga*, new species

Rusty reddish yellow above, paler below, front with a fine median brown line. Length; 4.5 to 5 mm.

**MALE.**—Front a little wider than long, shining rusty reddish yellow, more yellow in front and behind; yellowish pollinose from anterior view; ocellar triangle and an incomplete, slender median vitta brown; orbitals of about equal size; ocellars absent. Occiput and face yellowish, with whitish pollen, the middle of the face shining, moderately convex below. Antennae orange; arista black, long plumose. Palpi yellowish.

Thorax rusty yellowish, rusty reddish yellow above, the pleura with thin whitish pollen, the dorsum shining; scutellum flattened.

Legs pale reddish yellow.

Wings with slight luteous tinge; veins luteous. Squamae with rusty brownish border and golden fringe. Halteres yellow.

Abdomen yellowish, pale rusty reddish yellow above, with yellowish gray pollen from frontal view. Genitalia small.

FEMALE.—Differs only sexually.

TYPES.—Holotype, male, allotype, female, and paratypes, four females, Barro Colorado Island, Canal Zone, December 24, 1928, to February 18, 1929 (Curran), and male and female, Chapada, Brazil (Williston Collection). The holotype is dated February 18, 1929, the allotype, December 24, 1928; the other specimens were taken on January 11 and February 15 and 16.

I can see no difference in the Brazilian specimens, but they are not in perfect condition. The front in this species is less concave and less rounded in front than in *sordida*, but this condition varies somewhat.

#### *Neogriphoneura tertia*, new species

Rusty reddish yellow, paler below; crossveins blackish. Length, 4 to 4.5 mm.

MALE.—Front conspicuously wider than long, moderately depressed anteriorly, shining, the pollen brownish yellow from anterior view; anterior margin yellow; ocellars minute. Occiput and parafacials white pollinose; face yellowish. Antennae pale orange; arista black, long plumose. Palpi yellowish.

Thorax rusty reddish yellow above, yellowish below, shining, the pleura with some thin white pollen.

Legs rusty yellowish.

Wings with luteous tinge; veins yellowish, the crossveins blackish and narrowly clouded. Squamae yellow, the inner part of the fringe brown. Halteres yellow.

Abdomen rusty reddish yellow, more yellowish below and apically; cinereous pollinose from anterior view.

FEMALE.—Differs only sexually; the terminal segments are pale yellowish.

TYPES.—Holotype, male, Patilla Point, Panama, January 15, 1929 (Curran); allotype, female, and paratypes, male and female, Chapada, Brazil (Williston Collection).

#### CHAETOCOELIA GIGLIO-TOS

This genus is not easily separated from *Minettia* Desvoidy because the tubercles from which the frontal bristles arise are

not always well developed, and they may be little stronger than in some species of *Minettia*. However, the wings are usually more elongate, more obtusely rounded apically and have a characteristic brown pattern. I have seen only two species, including the one described below.

#### TABLE OF SPECIES

- 1.—No hyaline spot in the submarginal cell ..... 2.  
One or more hyaline spots in the submarginal cell ..... 4.
- 2.—Wings very obtusely rounded apically ..... 3.  
Wings somewhat pointed apically (Mexico) ..... *vergens* Giglio-Tos.
- 3.—Posterior crossvein with hyaline spot anteriorly (South America, Panama) ..... 3.  
No hyaline spot on the crossvein (Mexico) ..... *palans* Giglio-Tos.
- 4.—Only one hyaline spot in the submarginal cell ..... 5.  
Three or more hyaline spots in the submarginal cell (Mexico) .....  
..... *caloptera* Hendel.
- 5.—A hyaline spot in the apical cell just beyond the posterior crossvein (West Indies) ..... *angustipennis* Williston.  
No hyaline spot near the posterior crossvein in the apical cell ..... 6.
- 6.—Abdomen with three rows of brown spots (Brazil) ..... *excepta* Walker.  
Abdomen wholly yellow (Panama) .....  
..... *banksi*, n. sp.

#### *Chaetocoelia palans* Giglio-Tos

GIGLIO-TOS, 1895, R. Acad. Sci. Torino, XLV, p. 51 (f.).

This is the type of the genus. The abdomen is yellow basally and brown apically. Known only from Mexico.

#### *Chaetocoelia vergens* Giglio-Tos

GIGLIO-TOS, 1895, R. Acad. Sci. Torino, XLV, p. 51 (f.).

Hendel has placed this as a synonym of *distinctissima* Schiner, and this may be correct. However, the wings are much more pointed (according to the figure) than in any of the other species. If the outline of the wing is accurately drawn the species



yellowish and with white pollen on the lower half, reddish behind the vertex. Face reddish yellow, with an obscure brownish spot in the middle below and a large, opaque black spot on each side above, the parafacials very broad and white pollinose. Antennae reddish; arista black, broadened and flattened, tapering, with rather thick short hair. Palpi reddish, with black hair.

Thorax rusty yellowish, the dorsum rusty reddish with almost the lateral third brownish; a broad median vitta of thin whitish pollen; pleura with broad brownish border below the wings and squamae. Scutellum reddish yellow, flattened. Two sternopleurals; three dorso-centrals.

Legs reddish yellow, the tarsi somewhat darkened, the front pair mostly brownish.

Wings cinereous hyaline, the broad anterior border and apex brown; crossveins strongly bordered with brown, the border on the posterior crossvein triangular, broad posteriorly. Squamae brown. Halteres yellowish.

Abdomen shining black, somewhat reddish basally. Genitalia of medium size, reddish.

**HOLOTYPE.**—Male, Pagosa Springs, Colorado, June 22–24, 1919 (F. E. Lutz).

This may possibly represent a distinct genus, but I prefer to place it in *Xenopterella*. The genotype apparently does not have a strap-like arista, but this may be a sexual character.

### Cuterebridae

The following species, reared from larvae found in jack-rabbits collected in Oregon, is strikingly different from related forms, and it does not seem possible that it can be only a color variety of *princeps* Austen. The species was included in a small collection received from Dr. Wm. L. Jellison, to whom the type specimens will be returned, a paratype being deposited in the collection of the Museum.

#### *Cuterebra jellisoni*, new species

Black, with cinereous pollen, the abdomen with metallic blue or bluish green reflections in some lights; intermediate abdominal segments almost all cinereous pollinose; scutellum with black hair only. Length, 19 to 21 mm.

**MALE.**—Head black, densely cinereous pollinose, the front almost bare but with two orbital pollinose spots below, the lower one sometimes connected with the spot above the outer base of the antennae. On the face there are three bare spots, a large broad transverse one above, a small one below the eye and one half-way between this and the oral margin. Pile white, black on the front but mostly yellowish on the

anterior half. Front not three times as wide as the ocellar triangle, strongly widening anteriorly. Antennae blackish to brownish red, the arista yellowish and plumose on the apical half, blackish and pectinate on the basal half. The carina separating the sides of the antennal depressions is high and sometimes little concave in profile on the lower half, but this varies in the specimens before me.

Thorax black, rather thinly cinereous pollinose, the pleura with dense white hair, the dorsum with appressed black hair except for a white lateral patch above the base of the wings and sometimes a few white hairs at the outer end of the suture. There are two bare blackish spots near the middle on the anterior half of the pleura and a tuft of black hairs above. The scutellum is black haired, at most three or four whitish hairs being present on each side near the apex.

Legs black, and with black hair, the anterior femora densely short white haired posteriorly, and there are some white hairs basally on the middle femora; all the femora are silvery white pollinose below on about the basal half.

Wings light brownish, the hair on the squamae all white.

Abdomen metallic steel blue or with greenish reflection, the base black, the intermediate segments densely cinereous pollinose, with some large irregularly placed shining spots, with a narrow median bare vitta and the narrow apices of the segments incompletely shining; the apical segment is about half shining above, the base being widely pollinose laterally and narrowly so in the middle. The amount of pollen on the apical segment varies, and when the large bare spots are confluent with the posterior shining portions the segment may be more than half shining. The sternites are black haired, while the inner edges of the tergites bear white hair except at the base.

**FEMALE.**—Agrees with the male, but the front is about five times as wide as the ocellar triangle.

**TYPES.**—Holotype, male, Paisley, Oregon, larva in jack-rabbit, August 25, 1935, adult killed and pinned December 7, 1935, collected by G. M. Kohls, reared by W. L. Jellison; allotype, female, larva, Paisley, Oregon, August 25, 1935, adult March 18, 1936; paratype, male, larva, Paisley, August 25, 1935, adult January 4, 1936, both collected and reared as was the type.

According to Townsend's classification this species would belong to *Bogeria* Austen, but I do not see how the genus can be maintained and believe all of our species should be placed in *Cuterebra*. The shape of the front, used by Townsend to separate *Cuterebra* and *Bogeria*, depends greatly upon drying and is too variable to be of

even specific value. The only character upon which *Bogeria* could be maintained is the non-broadened male tarsi, and I do not attach great importance to this.

In Volume II of the "Manual of Myiology" Townsend placed his *C. lepusculi* as a synonym of *Bogeria princeps* Austen, but later, in Volume VI, he was inclined to believe that the three species, *ruficrus* Austen and the two above named, might all be forms of the same species. Unless there is great variation this seems unlikely. *C. princeps* has the abdomen almost all pollinose above, while in *lepusculi* it is pollinose only on the sides and apical segment. The distinctness of *ruficrus* is scarcely questionable. In these three forms the scutellum of the male is bordered below by a conspicuous fringe of rather long white pile, a character that is strikingly absent in *jellisoni*, new species.

For convenience in separating the species comprising this group, the following key is presented:

#### TABLE OF SPECIES

- 1.—Basal half or more of the femora reddish.....*ruficrus* Austen.  
Femora black, in part densely white pollinose.....2.
- 2.—Face with only two shining black spots below the large upper spot.....3.  
Face with three shining black spots below.....*princeps* Austen.
- 3.—Dorsum of the abdomen mostly free of pollen and shining; scutellum of male with the free border white haired.....*lepusculi* Townsend.  
Dorsum of abdomen chiefly cinereous pollinose; scutellum wholly black haired in both sexes.....  
.....*jellisoni*, n. sp.

#### Tachinidae

##### HYSTRICIA MACQUART

- MACQUART, 1843, Dipt. Exot., II, Part 3, p. 43.  
*Bombyliopsis* TOWNSEND, 1915, Proc. Biol. Soc. Wash., XXXVIII, p. 23.  
*Engelomyia* TOWNSEND, 1931, Rev. Ent., I, p. 349.  
*Hystriciella* ENGEL, 1920, Zool. Jahrb., XLIII, p. 311 (preoccupied).  
*Hystriciopsis* TOWNSEND, 1914, Ins. Ins. Mens., II, p. 85.

From a study of the material before me I feel that all the above names apply to species belonging to a single genus. The presence or absence of hairs on the parafacials is not a stable character in this group, and the same applies to pile or weak bristles on the prosternum. The characters by which *Hystricia* should be recognized are: the almost wholly pilose squamae and the produced oral margin, with the vibrissae situated well above it. The type of *Hystricia* (*amaena* Macquart) will not trace out in Townsend's "Manual," the species tracing to *Hystriciopsis* Townsend. The number of sternopleurals varies from one to three and the postsutural dorsocentrals from one to four. Since the dorsocentrals and acrosticals are often fine they are subject to variation in the same species and sometimes in the same specimen.

The following key separates the species before me:

#### TABLE OF SPECIES

- 1.—Parafacials with hair on upper half or more.....2.  
Parafacials with at most two or three hairs above.....12.
- 2.—Femora and tibiae black, tarsi white.....3.  
Femora practically all reddish or yellowish, or the tibiae pale.....4.
- 3.—Mesonotum grayish pollinose; tibiae not silvery.....*condor*, n. sp.  
Mesonotum with obscure brownish pollen; tibiae silvery.....  
.....*albimana*, n. sp.
- 4.—Abdomen orange to yellowish, sometimes shining, with black markings.....9.  
Abdomen dark reddish to black.....5.
- 5.—Squamae blackish.....6.  
Squamae whitish.....*browni*, n. sp.
- 6.—Abdomen with interrupted reddish and dull black fasciae.....  
.....*humeralis*, n. sp.  
Abdomen not strikingly bicolored.....7.
- 7.—Two sternopleurals.....*vultur*, n. sp.  
One sternopleural.....8.
- 8.—Tibiae yellow haired.....*flavitibia*, n. sp.  
Tibiae black haired.....  
.....*nigrotibiala*, n. sp.

- 9.—Abdomen clothed with long orange hair. . . . . *rufohirta*, n. sp.  
 Abdomen with some yellow pile which is short and sparse, the hairs mostly black on apical segments. . . . . 10.  
 10.—Black parafacial hairs limited to the upper half. . . . . *abrupta* Wiedemann.  
 Black parafacial hairs extending almost to the vibrissae. . . . . 11.  
 11.—Fourth abdominal segment with broad band of yellow pile basally; outer forceps of male genitalia with two spines at the apex. . . . . *micans* Wulp.  
 Fourth segment without pale pile; outer forceps with single curved apical spine. . . . . *abrupta* Wiedemann.  
 12.—Abdomen orange with small black spots in the middle and on the sides. . . . . *amaena* Macquart.  
 Abdomen differently colored. . . . . 13.  
 13.—Abdomen black, rather shining. . . . .  
 . . . . . *obscura* Townsend.  
 Abdomen differently colored. . . . . 14.  
 14.—Tarsi black. . . . . 15.  
 Tarsi yellow. . . . .  
 . . . . . *Calohystricia gertschi*, n. sp.  
 15.—Abdomen shining castaneous. . . . .  
 . . . . . *vargas*, n. sp.  
 Abdomen ochraceous pollinose. . . . .  
 . . . . . *laxa*, n. sp.

#### *Hystricia abrupta* Wiedemann

*Tachina abrupta* WIEDEMANN, 1830, Ausser. Zweifl., II, p. 293.

A very common species in the United States and Canada and undoubtedly occurring in northern Mexico. The hair on the parafacials is usually coarse and black above and very fine and yellow below, but in some specimens the hair is all black.

This is the type of *Bombyliopsis* Townsend. The only difference of note between this species and *amaena* is the presence of more hairs on the parafacials, and I do not believe the character is of generic value.

#### *Hystricia micans* Wulp

WULP, 1888, Biol. Centr. Amer. Dipt., I, p. 16 (f.).

This species is rather similar to the common Nearctic *abrupta* Wiedemann and particularly to those forms in which the parafacial hair is all black. The characters

given in the key will separate it. The two basal antennal segments are pale reddish. There is one male before me from Eslava, Federal District, Mexico.

#### *Hystricia amaena* Macquart

MACQUART, 1843, Dipt. Exot., II, Part 3, p. 44.

Wulp separated this species from *micans* by the color of the antennae and tarsi, both of which were said to be black. There is a female before me from El Volcan, Chiriqui, February 22, 1936 (W. J. Gertsch), which has the second and third antennal segments black, but the tarsi are only slightly darkened. The parafacials are almost wholly bare, and the species is readily separated from *micans* by this character. This specimen agrees with Macquart's original description except that he describes the apical tarsal segments as blackish. This is the type of *Hystricia*.

#### *Hystricia condor*, new species

Black, the thorax with pollen; tarsi whitish. Length, 10 to 12 mm.

MALE.—Head black, with olive gray pollen; occiput and lower cheeks whitish pilose, the hairs and bristles black. Front half as wide as one eye, the vitta reddish brown; nine or ten pairs of frontals, the ocellars long but weak, verticals cruciate, the outer verticals absent; cheeks two-thirds as wide as the eye-height. Face angularly concave, the oral margin as prominent as the antennal base, parafacials slightly narrowing below, not so wide as the third antennal segment, with hair on more than the upper half. Antennae black, the second segment partly obscure reddish, the third widest apically, the tip broadly rounded; arista black. Apical section of proboscis about as long as the eye-height; palpi long, reddish, the apex very broadly black above, the hair black. Pile of the eyes pale, tawny on the middle portion.

Thorax black, conspicuously olive gray pollinose, the mesonotum with four narrow, interrupted dark vittae. Hair black, yellow on the sternum; dorsocentrals 3-3, acrosticals 3-2; sternopleurals 2-1, the bristles fine. Scutellum brown pollinose, bearing numerous spines and black hair.

Legs black, narrow knees and trochanters reddish, the tarsi pale yellow; coxae gray pollinose, hair black, pubescence on front and hind tibiae, on the under surface of the first segment of the front tarsi and on the ventral and posterior surfaces of the hind tarsi yellow; coxae with fine yellow hair.

Wings brown, the base blackish. Squamae brown, with black hair; halteres brown.

Abdomen blackish, with brown pollen and appearing dark castaneous, the genitalia shining black, the hair all black. Abdomen heavily spined, the bases of the segments broadly bare but bearing black hair; apex of fourth segment bearing a row of ordinary bristles; sides of venter bare on basal half.

**FEMALE.**—Front almost three-fourths as wide as eye; apical four segments of the front tarsi broadened and pale pubescent beneath; disc of scutellum more reddish.

**TYPES.**—Holotype, male, and allotype, female, Hacienda Talahua, Bolivar Province, Ecuador, May 4 and April 26, 1939 (F. M. Brown).

This species seems to approach *Engelomyia* Townsend but does not fully agree with the characters given for the genus.

#### *Hystricia albimana*, new species

Blackish; thorax brown pollinose; tibiae silvery; tarsi pale yellowish. Length, 12 mm.

**MALE.**—Head black, brown pollinose; face paler above, cheeks olive gray, the occiput more brownish yellow and with yellow pile which becomes whitish below. Front one-third as wide as eye, with about ten frontals and a second row of three opposite the antennae, the upper ones fine; ocellars long and fine; hair long; outer verticals absent. Face deeply concave, the oral margin not so prominent as the antennal base; cheeks with sparse, coarse hair, the oral margin bearing some fine yellow hairs; parafacials haired on almost the whole length. Antennae black, the second segment partly brownish red; third segment broad, obtusely rounded apically, a little more than twice as long as wide. Eyes with brownish pile. Palpi reddish, becoming black apically.

Thorax black, brown pollinose, with four weak dark vittae. Hair black. Acrosticals 1-1; dorsocentrals 2-2; one sternopleural. Scutellum darker than the mesonotum, with black hair, heavy spines and two or three lateral bristles.

Legs black, the knees, trochanters and broad apices of the femora below reddish; tibiae dull silvery pollinose, their pubescence pale yellow. Tarsi pale yellow, the hair and bristles whitish.

Wings dark brown, the base blackish. Squamae and halteres brown, the former with black pile.

Abdomen blackish, the sides somewhat brownish red, the pollen brownish. Second segment spinose in the middle and laterally, the third and fourth spinose except basally, the fourth with apical bristles. Genitalia shining black basally.

**HOLOTYPE.**—Male, Hacienda Talahua, Bolivar Province, Ecuador, April 29, 1939 (F. M. Brown).

#### *Hystricia browni*, new species

Blackish, the abdomen brownish red, with whitish pollen; squamae grayish white, with black pile. Length, 12 mm.

**FEMALE.**—Head blackish, the cheeks in front and the face immediately below the antennae reddish; pollen olive gray, cinereous on the middle of the face, olive brown on the front. Front half as wide as one eye, with two rows of frontals and one proclinate orbital on each side, the inner row interrupted in the middle; ocellars long and fine. Occiput and lower cheeks with whitish pile. Oral margin not so prominent as the antennal base; parafacials haired on their whole length. Antenna reddish, the third segment black, about twice as long as wide. Palpi reddish. Eyes reddish yellow pilose.

Thorax blackish, the sides of the mesonotum, scutellum and some pleural areas brownish red; mesonotum olive brown pollinose, the vittae narrow and weak. Acrosticals 1-2, dorsocentrals 3-2, one sternopleural. Hair yellow, black on the dorsum and on most of the mesopleura. Scutellum with stout spines.

Legs reddish, black haired, the fine hair on the coxae, trochanters and under surface of the femora basally yellow. Apical four segments of the front tarsi conspicuously broadened.

Wings dark brown, the base blackish. Halteres brown with reddish apex.

Abdomen dull brick red, with cinereous white and brownish pollen. The pale pollen covers most of the venter and forms two broad longitudinal bands on the dorsum that broaden on the apices of the segments and converge posteriorly, beginning at the base of the second segment and continuing to the middle of the fourth. Abdomen with spines, the tip with ordinary bristles; on the second segment the spines form median and lateral patches.

**HOLOTYPE.**—Female, Minza Ridge, Volcan Tungurahua, Ecuador, April 8, 1939 (F. M. Brown).

#### *Hystricia humeralis*, new species

Black, the abdomen largely reddish; tarsi pale yellow. Length, 12 mm.

**MALE.**—Head black, the pollen olive brown on the front, olive gray on the occiput and cheeks, brown on the lower face and parafacials and brownish yellow on the middle of the face. Front two-fifths as wide as eye; about ten pairs of frontals and three in a secondary row opposite the antennae; ocellars fine. Pile of occiput and lower cheeks bright yellowish, rather golden. Oral margin not so prominent as the antennal base; parafacials haired on whole length. Antennae blackish, the basal segments in part dull reddish; third segment not twice so long as wide, the apex oblique with rounded corners. Palpi reddish. Eyes with brown, yellow tipped pile.

Thorax black; humeri reddish; pollen dark brown, on the mesopleura somewhat olivaceous;



vittae inconspicuous. Hair black. Scutellum dark brown, with stout spines. Acrosticals 3-0; dorsocentrals 3-2; one sternopleural.

Legs reddish, hair black; tarsi pale yellow and with yellow hair and bristles.

Wings dark brown, the base blackish. Squamae and halteres brown, the former with black pile.

Abdomen black and reddish (in life the reddish color is rather strongly coppery or violaceous). First segment black; second dull black on the median third and with very large lateral black spot that extends along the posterior border of the venter; third segment with smaller median spot, but it is connected posteriorly to the lateral black spot; fourth with a longitudinal median spot and the posterior border broadly black. Hair black. Spines numerous; median spine bunch on second segment not connected with lateral spines; apical segment with ordinary bristles apically. Genitalia reddish, the basal segment shining black. There is a trace of pollen on the reddish areas, but it is not much paler than the ground color.

**HOLOTYPE**.—Male, Hacienda Talahua, Bolivar Province, Ecuador, April 26, 1939 (F. M. Brown).

#### *Hystercia vultur*, new species

Black, with olive gray pollen; tarsi pale yellow; two sternopleurals. Length, 10 mm.

**FEMALE**.—Head black, with olivaceous pollen, the middle of the face brownish. Front two-fifths as wide as eye, with eight to ten pairs of frontals in single row, and one proclinate orbital; ocellars fine. Occiput very pale yellowish pilose. Cheeks less than half the eye-height. Oral margin almost as prominent as the antennal base; parafacials haired to below the middle. Antennae black, the basal segments partly brownish red; third segment broad, obtusely rounded apically. Palpi reddish, with black hair and bristles.

Thorax black, rather thinly cinereous pollinose, the black vittae moderately wide but poorly developed. Acrosticals 3-1; dorsocentrals 3-2; two sternopleurals; hair wholly black. Scutellum brownish, gray pollinose, with numerous black spines.

Legs reddish, the coxae more or less tinged with brown; hair black; tarsi yellow and with wholly yellow hair and bristles.

Wings dark brownish. Squamae reddish brown, with black pile. Halteres reddish brown.

Abdomen blackish, apparently with brown pollen and two wide cinereous vittae; it has been moistened, and the color of the pollen cannot be discerned. Second to fourth segments with numerous spines except on the base, the fourth with many bristles apically.

**HOLOTYPE**.—Female, El Volcan, Chiriqui, Panama, February 26, 1936 (W. J. Gertsch).

#### *Hystercia flavitibia*, new species

Black, the abdomen mostly castaneous; legs reddish. Length, 14 mm.

**MALE**.—Head black, brownish pollinose, the front, occiput and cheeks more olive gray; hair black. Front one-third as wide as eye; nine or ten pairs of frontals and a secondary row of five below; ocellars very fine. Occipital pile reddish yellow. Face rather deeply concave, the oral margin practically as prominent as the antennal base; parafacials rather wide, haired on whole length. Antennae black, the basal segments brownish red, the third widest apically, the apex obtuse. Palpi reddish basally, becoming black apically, the hair black. Eyes with brown pile.

Thorax black, thinly grayish brown pollinose, the vittae very obscure; hair black. Bristles on disc of thorax fine; acrosticals 1-1; dorsocentrals 1-2; one sternopleural. Scutellum brownish, brown pollinose; with many black spines.

Legs reddish, the coxae mostly blackish or darkened; hair and bristles black, but all the hair and bristles of the tarsi and the short bristles and the hair on the tibiae yellowish.

Wings blackish brown. Squamae brown, with black hair. Halteres reddish.

Abdomen brownish red or pale castaneous, the hair black; pollen grayish brown above, pale below, visible only in some views; a broad median vitta of black that expands on the fourth segment. The spines on the middle of the second segment are broadly separated from the lateral ones; some bristles apically on the fourth segment. Genitalia mostly black, the basal segment with a number of spinose bristles.

**HOLOTYPE**.—Male, Hacienda Talahua, Bolivar Province, Ecuador, May 4, 1939 (F. M. Brown).

#### *Hystercia nigrotibiata*, new species

Blackish, the abdomen dull castaneous, legs reddish, the tarsi yellow. Length, 15 mm.

**MALE**.—Head black, with brownish olivaceous pollen, the face mostly reddish brown and with brownish pollen. Front slightly more than one-third the eye-width; twelve to fourteen pairs of frontals and a secondary row below; ocellars little stronger than the adjacent hairs. Pile of the occiput bright reddish yellow. Parafacials wide, haired on the whole length. Face concave, the oral margin not so prominent as the antennal base. Antennae black, the basal segments reddish, the third moderately wide, obtuse apically. Palpi reddish, becoming black apically, the hair wholly black. Eyes brown pilose.

Thorax dull black, with thin brown pollen and black hair, the bristles on the disc of the mesonotum fine. Acrosticals, 1-1; dorsocentrals, 1-2; one sternopleural. Scutellum brownish and with dark brown pollen; clothed with many spines.

Legs reddish, the femora more or less broadly black basally, the tarsi yellow. Hair and bristles black, yellow on the tarsi.

Wings blackish brown. Squamae black, with black hair. Halteres brownish red.

Abdomen dull castaneous, with large, median, united dark spots on the second and third segments and the apex of the fourth black; pollen brownish, obscure. The median cluster of spines on the second segment is connected along the posterior margin with those on the sides; fourth segment with bristles apically. Genitalia black and reddish.

**HOLOTYPE**.—Male, Minza Ridge, Volcan Tungurahua, Ecuador, April 8, 1939 (F. M. Brown).

#### *Hystericia rufohirta*, new species

Blackish, the abdomen reddish with black vitta, and wholly tawny pilose; legs reddish. Length, 10 to 11 mm.

**MALE**.—Head blackish, olive gray pollinose, the middle of the face reddish and with grayish brown pollen. Front about one-third as wide as eye, with eight to ten pairs of frontals, the lower ones weak, but there is a secondary row of five strong ones below; ocellars poorly differentiated. Occipital pile reddish yellow, brassy below and on the lower half of the cheeks. Oral margin not so prominent as the antennal base; parafacials moderately wide, haired on whole length. Antennae reddish, the third segment black, broad, obtuse apically. Palpi reddish, the hair black. Eyes with yellowish pile.

Thorax gray pollinose laterally, brownish above, the vittae obscure. Acrosticals 1-0 or 0-0; dorsocentrals 2-2; two sternopleurals; hair black, yellow on the pleura, scutellum and posterior calli. Scutellum reddish, with few spines.

Legs reddish, with black hair and bristles, the coxae and bases of the femora on the under surface yellow pilose.

Wings very strongly tinged with blackish brown. Squamae translucent grayish brown, with pale border, the pile yellow. Halteres reddish.

Abdomen bright orange red, with median rather narrow black vitta composed of triangles on the second and third segments and a stripe on the fourth; hair and fine bristles reddish. Second segment with median patch of spines connected along the posterior border with four or five forming a lateral patch; third and fourth segments with discal and apical rows of spines, the third segment with two or three additional ones on the middle. Genitalia wholly reddish.

**FEMALE**.—Front half as wide as eye; anterior tarsi strongly broadened; genitalia mostly shining black.

**TYPES**.—Holotype, male, and allotype, female, Hacienda Talahua, Bolivar Province, Ecuador, April 29, 1939; paratype,

male, same locality, April 26, 1939 (F. M. Brown).

#### *Hystericia vargas*, new species

Black; thorax grayish pollinose; abdomen shining castaneous; tarsi black. Length, 12 mm.

**FEMALE**.—Head black, cinereous pollinose. Front three-fifths to one-half as wide as eye; with eight to ten pairs of frontals, the upper three reclinate, and a secondary row of four or five below, the ocellars moderately strong; two pairs of orbitals. Occiput and lower cheek with cinereous pile. Oral margin much less prominent than antennal base; parafacials with only a few short hairs above. Antennae black; third segment a little longer than the second, obtusely rounded apically. Palpi reddish apically, blackish on the basal half, the hair wholly black. Eyes with short yellowish pile.

Thorax black, rather thickly cinereous pollinose, the vittae distinct; hair black, pale brassy yellow on the pleura. Acrosticals 3-3; dorsocentrals 3-4; sternopleurals 2-1. Scutellum reddish brown, with cinereous pollen and many spines.

Legs brownish red, the femora with large blackish areas apically on under surface, tarsi black. Hair black, yellow on the coxae and base of femora below.

Wings strongly tinged with blackish brown, the base darker. Squamae brownish, with black pile. Halteres reddish yellow.

Abdomen shining wine red or castaneous, wholly without pollen. Second segment almost wholly clothed with spines that become short anteriorly; third segment with discal and apical rows of spines that are connected laterally, the discal row sometimes partly double; fourth segment with two discal rows of spines and with apical bristles; hair black, the base of the under surface with pale yellow pile medianly.

**TYPES**.—Holotype, female, and paratypes, two females, Nova Teutonia, Brazil, May 27 and June 1, 3, 1939 (F. Plaumann).

#### *Hystericia laxa*, new species

Blackish, the abdomen brown with ochraceous pollen above; legs black; prosternum usually haired. Length, 11.5 to 14 mm.

**MALE**.—Head black, cinereous yellow pollinose, the front more grayish. Front one-sixth to one-fifth as wide as eye; eleven to fourteen pairs of frontals and a secondary row below; ocellars moderately long and strong. Pile of occiput and lower cheeks pale yellowish. Oral margin considerably less prominent than the antennal base; parafacials bare. Antennae black, the third segment obtuse apically, about as long as the second. Palpi brown with somewhat reddish apex.

Thorax black, with yellowish brown pollen which becomes grayish on the lower part of the

pleura; vittae conspicuous, moderately wide; hair black, yellow on the sternopleura; acrosticals 3-3; dorsocentrals 3-4; sternopleurals 2-1. Scutellum brownish red, ochraceous pollinose, with numerous spines.

Legs black, the tips of the tarsi reddish; hair black, partly yellow on the coxae and bases of the femora.

Wings brownish. Squamae brown, with pale border and black pile. Halteres brownish, the stem mostly reddish.

Abdomen shining brown, the dorsum thickly ochraceous pollinose, but the sides and apex are shining and thinly brown pollinose. Second segment with numerous median spines broadly connected with the lateral spines, third and fourth segments with spines except basally, the fourth with bristles apically. Genitalia brownish.

**TYPES.**—Holotype, male, and paratypes, twelve males, El Volcan, Chiriqui, February 18, 20, and March 1, 1936 (W. J. Gertsch), the holotype collected March 1.

In this species most of the specimens have the prosternum pilose, but the amount of pile varies, and some have it bare. The vibrissae are situated well above the oral margin, thus distinguishing the species from *Calohystricia*.

#### CALOHYSTRICIA TOWNSEND

TOWNSEND, 1931, Rev. Ent., I, p. 350.

This genus is most closely related to *Macromya* Desvoidy, differing in having the squamae haired on the outer half instead of only along the outer border, and the presence of three sternopleurals. It forms a natural connecting link between *Hystricia* and *Macromya*. The only described species is *velutina* Wulp, from Costa Rica. It has the abdomen velvety black with rather narrow apical white pollinose crossbands on the segments.

While the species will trace out to *Calohystricia* in Townsend's "Manual" the key is not sufficient for its distinction. Both *Macromya* and *Calohystricia* have the vibrissae practically level with the oral margin, while in the other American genera with pilose squamae the vibrissae are situated well above the more produced oral margin. Some species of *Hystricia* (*Engelomyia*) have the prosternum haired to greater or less degree, but this character

may exist in the same species. Whether the genus is distinct from *Lasiona* Wulp cannot be determined without examination of specimens of that genus. *Lasiona* does appear to be considerably narrower, more like *Macromya*. In his description of *Lasiona* Wulp states that the cheeks are narrow, but the illustration shows them to be wide. Also, *Lasiona* is said to have only fine hair on the cheeks, while there are some bristles in both *Macromya* and *Calohystricia*.

#### *Calohystricia gertschi*, new species

Reddish, the mesonotum black, parafacials bare; tarsi yellow. Length, 14 mm.

**FEMALE.**—Head reddish, the front and occiput blackish, pollen brassy yellow, more grayish on the occiput, becoming brown on the upper part of the front. Front two-fifths as wide as eye; six or seven pairs of frontals and a secondary row of three or four below; two pairs of orbitals; ocellars moderately strong. Occipital pile yellowish; cheeks with coarse, black hair and a few bristles near the middle. Face retreating to the moderately produced oral margin, with a conspicuous median ridge; parafacials bare. Antennae reddish, the third segment mostly black and almost twice as long as the second. Proboscis short, with large, fleshy reddish yellow labellae; palpi reddish.

Thorax reddish, the mesonotum black except laterally, thickly cinereous yellow pollinose, the vittae moderately wide and conspicuous; acrosticals 3-3; dorsocentrals 3-4; sternopleurals 2-1; pleura yellowish pollinose; hair all black. Scutellum reddish, yellowish pollinose, with many spines.

Legs reddish, with black hair, the tibiae and tarsi with reddish yellow hair, the tarsi with pale bristles.

Wings brownish. Squamae brown with yellow border, with short black pile on more than the outer posterior half. Halteres reddish yellow.

Abdomen broad, dull brownish red above, dark orange red below; second segment with a median black vitta, the third with a black spot posteriorly; bases of the segments narrowly yellow pollinose, and there is an incomplete white pollinose line on the middle of the second to fourth segments. Second segment with a patch of spines in the middle not connected with the lateral spines; third with about ten discal spines in the middle, the fourth with two discal rows of spines and with bristles apically.

**HOLOTYPE.**—Female, El Volcan, Chiriqui, Panama, February 22, 1936 (W. J. Gertsch).