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## ASILID NOTES (DIPTERA), WITH DESCRIPTIONS OF THIRTY-TWO NEW SPECIES

BY S. W. BROMLEY

Taxonomic notes on the world-wide asilid fauna, with descriptions of 32 new species and one new name, are contained in the following pages. Genera and species in all three subfamilies of the Asilidae (Leptogastrinae, Laphriinae, and Asilinae) are discussed.

The following new species were furnished me for description by Dr. A. Earl Pritchard, University of California, Berkeley: *Stenopogon boharti*, *S. floridensis*, *S. tinkhami*, *S. utahensis*, and *Saropogon laparoides*.

The types of the new species, unless otherwise indicated, are in the American Museum of Natural History.

### SUBFAMILY LEPTOGASTRINAE

The cosmopolitan genus *Leptogaster* Meigen is composed of small, slender, elongate, delicate robber flies, which live for the most part in moist woods or in the shade of rank herbage. To *Leptogaster* will undoubtedly be found to belong more species than to any other asilid genus.

### LEPTOGASTER MEIGEN

*Leptogaster* MEIGEN, 1803, Illiger's Mag., vol. 2, p. 269.

*Gonyptes* LATREILLE, 1804, Histoire naturelle . . . des crustacés et des insectes, vol. 14, p. 309.

*Psilonyx* ALDRICH, 1923, Proc. U. S. Natl. Mus., vol. 62, p. 5.

GENOTYPE: *Asilus cylindrica* De Geer (1776, Mémoires pour servir à l'histoire des insectes, vol. 6, p. 249, Europe). By designation, Coquillett, 1910.

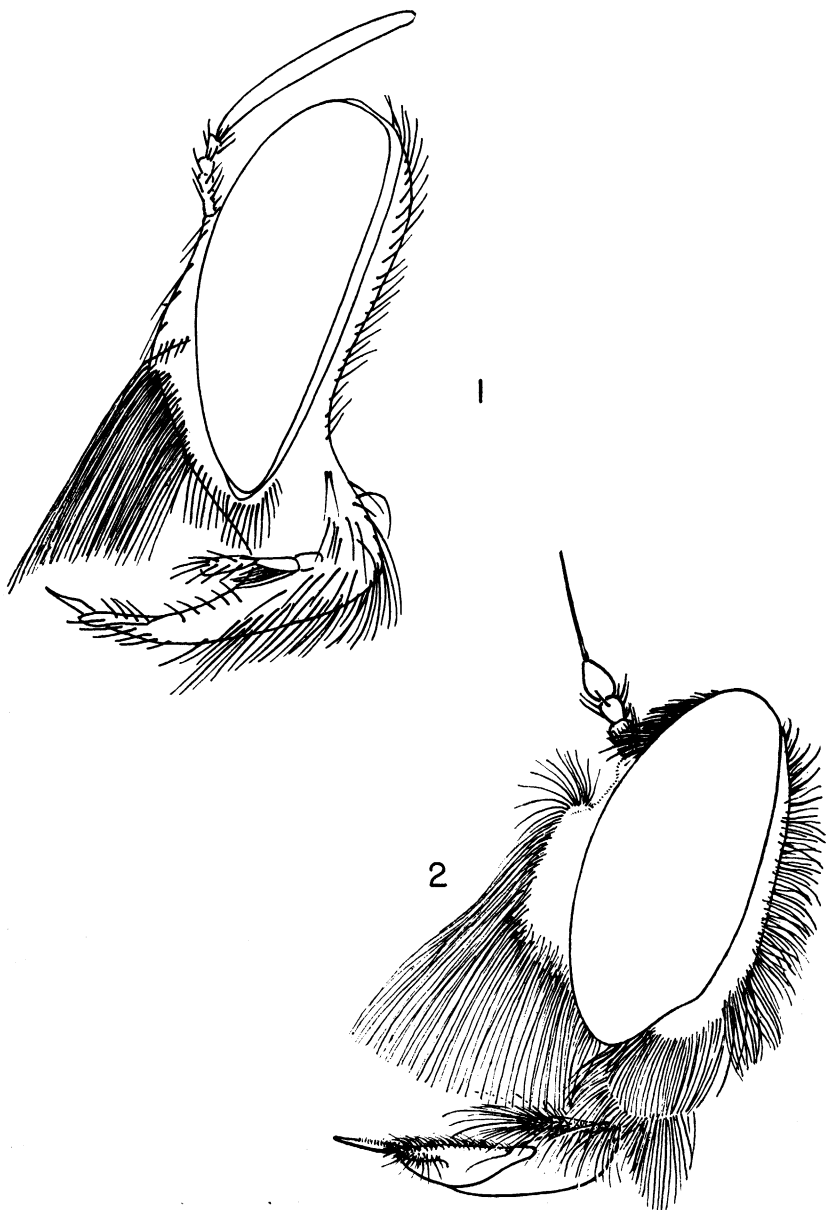


FIG. 1. *Dasyllis fascipennis* Macquart, profile of head.

FIG. 2. *Eccritotia zamon* Townsend, profile of head.

**Leptogaster weslacensis**, new species

Total length, 16 mm. A long, slender-legged, dark-colored species, the anterior intercalary vein forming a rather indistinct angle with that portion of the posterior cross vein that closes the second posterior cell behind. The antennae are black, the thorax is dark brown, with three distinct black stripes. The fourth posterior cell is petiolate. The posterior femur has a patch of fine, short, white pile below on the distal third. Related to both *tenuipes* Loew and *hirtipes* Coquillett, but is larger than either. Distinguished from *tenuipes* Loew by the distinct stripes on the mesonotum, not coalescing into a large spot as in *tenuipes*, and the patch of silvery pile on the hind femora; from *hirtipes* by the black antennae, the longer, more slender legs, the general darker color and the reddish brown (not yellowish) humeri and posterior calli.

FEMALE: Head black, palpi yellowish brown. Antennae brownish black, the arista stout and longer than the third joint, which is subcylindrical, rounded at both ends. Thorax reddish brown; mesonotum with three black lines not coalescing, and short, fine, black hair. Pleura with white pile. A stout yellow bristle above base of wings. Scutellum blackish brown, margined with silvery pollen and bearing four short, stout, black, marginal bristles. Legs long, slender, yellowish brown, the tips of the tarsi blackish; the femora with somewhat of a reddish tint, the upper distal portion of tarsus 1 blackish; the anterior face and upper distal portion of femur 2 largely blackish; femur 3 pale at base, brownish towards tip, a black subterminal spot on anterior lower side. Tibiae 1 and 2 with black anterior line, tibia 3 brown with tip black. The bases of the first tarsal segments very pale, the posterior slightly darker. Tarsal bristles and claws black. Wings short, hyaline, iridescent, basal posterior very faintly tinged with brown. Halteres brown. Abdomen long, cylindrical, black, the basal portion gray pollinose; sides with fine white pile, dorsum with short, fine, black hairs. The abdomen is not ringed.

TYPE: Holotype, female, Weslaco, Texas, June 22, 1933 (S. W. Bromley). Collected in a mesquite thicket.

**Leptogaster spinitarsis**, new species

Total length, 8 mm. A small, slender, blackish and reddish species, with very long hind legs, with the spines on the

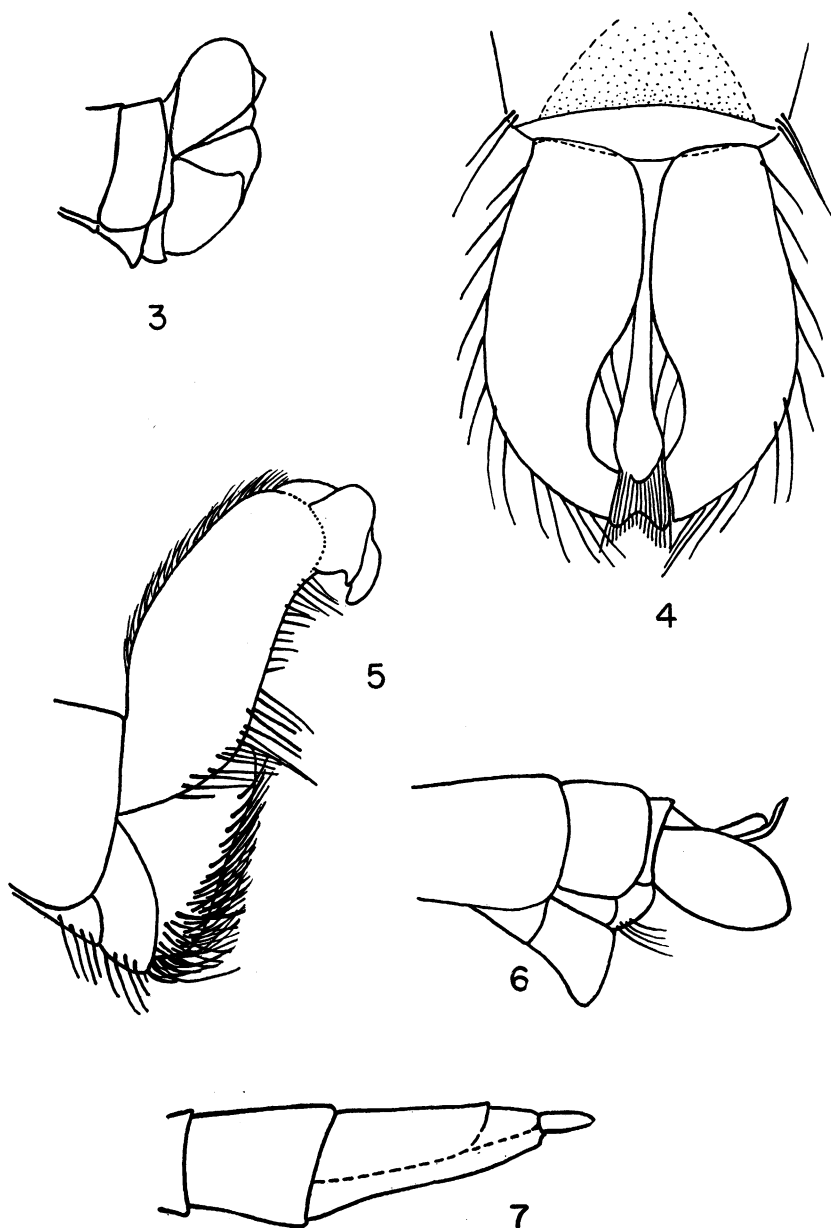


FIG. 3. *Proctacanthella robusta*, new species, male genitalia, lateral view.  
 FIG. 4. *Erax currani*, new species, dorsal view of male genitalia.  
 FIG. 5. *Erax schadei*, new species, male genitalia, profile.  
 FIG. 6. *Regasilus blantoni*, new species, lateral aspect of male genitalia.  
 FIG. 7. *Regasilus blantoni*, new species, lateral aspect of female ovipositor.

tarsi and tips of posterior tibiae exceptionally long. The empodia are over half the length of the claws, the anterior intercalary vein forming a distinct angle with the portion of the posterior cross vein that closes behind the second posterior cell, the mesonotum is reddish with three black shining stripes, bare in front but with blue-gray pollen behind. The anal cell is open, the fourth posterior cell petiolate. The posterior femur is yellowish at extreme base, brownish for two-thirds its length, then a yellowish brown band followed by a black band, followed by another yellowish brown band with the extreme tip blackish.

MALE: Face very narrow, blue-gray pollinose. Proboscis dark brown, with the base lighter. First two antennal segments yellowish, third reddish brown. Thorax reddish brown, mesonotum with three black stripes, polished above and anteriorly. The posterior portion and the scutellum with a blue-gray bloom. Pleura whitish pollinose. Wings hyaline, iridescent, with brown veins. Halteres sordid whitish, with brown knobs. Two front pairs of legs pale brownish, the tibiae darker above, extreme tips of femora dark brown, claws black, the distal tarsomeres blackish, other tarsomeres brownish at tips, with bases very pale. Hind legs very long and slender, two stout long spines at the tips on anterior side of tibiae and first three tarsal segments, posterior tibiae dark brown, with black tips. Tarsomeres dark brown, with black tips. Posterior femora dark brown, with a subterminal, pale, yellowish brown band, another similar band at three-fourths the length, the extreme bases pale yellowish. Abdomen blackish brown, dorsum shining, incisures and sides of tergites whitish pollinose. Genitalia pale brown.

FEMALE: Similar, abdomen somewhat club-shaped.

TYPES: Holotype, male, Barro Colorado Island, Canal Zone, May 13, 1937 (S. W. Frost). Allotopotype, same data. Both in collection of S. W. Frost, State College, Pennsylvania.

### ***Leptogaster freyi*, new name**

In 1942 I wrote (Trans. Amer. Ent. Soc., vol. 68, p. 11) that no *Leptogaster* had been reported from Madagascar. I was unaware then that Richard Frey of Finland, in a paper on Oriental Asilidae (1937, Notulae Ent., 17 year, no. 2, p. 45), had described a Madagascan form under the name of *L. (Mesoleptogaster) madagascariensis*. This would have priority over my

*madagascarensis* (*tom. cit.*, p. 12), and, as the two are distinct, I propose the name *freyi* for my species.

#### SUBFAMILY DASPOGONINAE

##### STENOPOGON LOEW

*Stenopogon* LOEW, 1847, *Linnaea Ent.*, vol. 2, p. 453.

*Scleropogon* LOEW, 1866, *Berliner Ent. Zeitschr.*, vol. 10, p. 26.

GENOTYPE: *Asilus sabaudus* Fabricius (1794, *Entomologia systematica*, vol. 4, p. 385, fig. 40). By designation, Coquillett, 1904.

##### *Stenopogon boharti*, new species

Total length, 14–18 mm. A slender, reddish yellow species with reddish yellow legs, mesonotum and pleura with black markings, the hypopleura base and the mystax yellowish, vestiture and male genitalia reddish yellow.

Head with face and post genae gray pollinose. Antennae blackish brown. Proboscis piceous. Vestiture reddish yellow. Thorax reddish, with part of the pleura, pronotum, and the disc of the mesonotum blackish. Vestiture of thorax and legs reddish yellow. Legs entirely reddish yellow. Wings pale smoky. Abdomen reddish yellow, slender, with reddish yellow bristles and fine whitish hairs. Genitalia small, compact, reddish yellow. The female with tip of ovipositor blackish.

Types: Holotype, male, Yuma, Arizona, May 6, 1939 (R. M. Bohart). Allotopotype, female, same data.

A distinctive species related to *S. propinquus* Bromley but much more slender, and vestiture much more sparse.

##### *Stenopogon floridensis*, new species

Total length, 20–25 mm. A black and red species with smoky wings, the mystax black above, the posterior femora entirely black, the four anterior femora black and red.

MALE: Face grayish yellow pollinose. Mystax black above, yellow below. Beard pale yellow. Upper occipitals and bristles of vertex and hairs of antennae black. Thorax black, humeri red, mesonotum and pleura grayish brown pollinose. Coxae with yellow hairs and bristles. First four femora black, broadly reddish at tips. Hind femora all black. Posterior tibiae red, with black tips, the others all red. Tarsi red. Legs

with some yellow, some black hairs; most of bristles black but some red. Mesonotum with mostly black hairs and bristles. Bristles above bases of wings yellowish. Two median scutellars yellowish, the two out beyond these black. Humeri red. Wings blackish. Abdomen mostly red, blackish at base and tip. Halteres reddish. Genitalia small, compact, black.

TYPES: Holotype, male, Dade City, Florida, July 17, 1938 (W. Stehr). Paratopotype, same data.

Related to *S. subulatus* Wiedemann, from which it can be distinguished by the entirely black hind femora, the black thorax, the upper hairs of mystax black, and the blackish wings.

### ***Stenopogon tenebrosus* Coquillett**

I would like to call attention to the fact that *tenebrosus* Coquillett will not run correctly in my key to this genus (1931, Ann. Ent. Soc. Amer., vol. 24, pp. 2, 428). Since the preparation of this key, I have identified the true *tenebrosus* Coquillett from Del Rio, Texas (July 9, 1931, collected by Mr. G. P. Engelhardt). In the key it would run to *pumilus*, but is much larger. The abdomen is entirely black, gray pollinose, long, and cylindrical. The wings are dark gray; the femora all black except the first which has a large reddish yellow vitta anteriorly. Total length, 25 mm.

### ***Stenopogon tinkhami*, new species**

Total length, 18 mm. A reddish species with blackish wings. The hypopleura with a few yellowish bristles, the mesonotum grayish pollinose and with vestiture of head pale yellowish.

FEMALE: Head black, the face grayish pollinose. The antennae, palpi, and proboscis black, the vestiture very pale yellow, with two dark bristles on vertex. Thorax, legs, and halteres reddish, the thorax grayish pollinose. Bristles of legs yellowish. Bristles above wing bases reddish to dark brown. Scutellars dark brown. Wings blackish. Abdomen reddish, venter blackish.

TYPE: Holotype, female, Chinati Mountain, Texas, September 23, 1929 (E. R. Tinkham).

Related to *S. latipennis* Loew, but distinguished by the darker wings, reddish thorax, with gray pollen, and the absence of reddish yellow bristles and hairs.

***Stenopogon utahensis*, new species**

Total length, 9–11 mm. A small, whitish pollinose species with yellowish terminalia and legs, the hind femora with a broad black vitta on the anterior median portion. Vestiture whitish.

Antennae with third joint brownish, first two yellowish. Scutellum with two to four white marginal bristles. Halteres yellowish. Wings hyaline. Abdomen brownish in ground color, becoming yellowish towards tip. Genitalia yellowish with yellowish hairs.

TYPES: Holotype, male, Leeds, Utah, June 20, 1929 (E. G. Anderson). Allotopotype, female, same data. Paratopotype, female, same data.

Related to *S. albibasis* Bigot but distinguished therefrom by the conspicuous black anterior median vitta on the hind femora.

**STICHOPOGON LOEW**

*Stichopogon* LOEW, 1847, *Linnaea Ent.*, vol. 2, p. 499.

*Philammosius* RONDANI, 1856, *Dipterologia Italica*, vol. 1, p. 156, pl. 3.

*Stilopogon* A. COSTA, 1884, *Atti R. Acad. Sci. Napoli*, ser. 2, vol. 1, p. 62.

*Neopogon* BEZZI, 1910, *Ann. Mus. Natl. Hungarici*, vol. 8, pp. 147–153.

*Lissoteles* BEZZI, 1910, *Boll. Lab. Zool. Portici*, vol. 4, p. 175.

*Echinopogon* BEZZI, 1910, *Ann. Mus. Natl. Hungarici*, vol. 8, p. 131.

*Dichropogon* BEZZI, 1910, *Ann. Mus. Natl. Hungarici*, vol. 8, p. 133.

GENOTYPE: *Dasyopogon elegantulus* Meigen (1820, *Systematische Beschreibung der bekannten Europäischen zweiflügeligen Insekten*, vol. 2, p. 270, pl. 18). By designation, Back, 1909.

***Stichopogon pritchardi*, new species**

Total length, 8–11 mm. A grayish white pollinose species with red abdomen and yellowish tibiae, closely related to *S. abdominalis* Back.

Head whitish pollinose. Vestiture white. Thorax black, whitish pollinose except disc of mesonotum where the pollen has a brownish tint. Bristles of thorax and most of those on the legs white. Tibiae yellowish. Wings subhyaline, with a yellowish tinge. Halteres yellow. Abdomen reddish, the sides broadly white pollinose. The white pollinose bands extend narrowly over the dorsum along the incisures. Genitalia reddish, white pollinose, and white haired.

TYPES: Holotype, male, Medora, Kansas, June 9, 1933. Allo-



topotype, female, same data. Paratopotypes, one male, one female, same data. Paratypes, two males, Clark County, Kansas, June, 1962 feet (F. H. Snow); two males, Hidalgo County, Texas, August 9, 1933 (S. W. Bromley); one male, one female, Osage County, Oklahoma, July 28, 29, 1932 (A. E. Pritchard); two males, Stillwater, Oklahoma, June 20, 1923 (S. W. Bromley); 15 specimens, Roggen, Colorado, July 8–August 31 (M. T. James).

Distinguished from *abdominalis* Back (Florida species) by the yellowish rather than reddish tibiae and the white pollinose incisures of the abdomen not narrow and even but broad at the sides. Dr. A. L. Pritchard called my attention to the fact that this species was distinct from *abdominalis*, and I have named it in his honor.

#### **ECHTHODOPA LOEW**

*Echthodopa* LOEW, 1866, Berliner Ent. Zeitschr., vol. 10, p. 16.

*Echthopoda* KERTESZ, 1909, Catalogus Dipteriorum, vol. 4, p. 104.

GENOTYPE: *Echthodopa pubera* Loew (1866, Berliner Ent. Zeitschr., vol. 10, p. 15). By designation, Coquillett, 1910.

#### ***Echthodopa carolinensis*, new species**

Total length, 18–20 mm. Shining black species with yellowish tibiae, black mystax, and vestiture of mesonotum golden.

MALE: Head black, face bordered with white pollen. Occipital hairs and bristles as well as those of the vertex mostly golden brown. Mystax and palpal hairs, beard white. Pronotum, mesonotum, and scutellum with golden fulvous hairs and bristles. Hairs of abdomen golden fulvous. Legs with some white hairs and some yellowish. Legs black, tibiae reddish yellow, with blackish tips. Wings tinged with brown, the veins narrowly bordered with brownish. The anal angle milky white. Genitalia small, compact, piceous, with golden fulvous hairs.

TYPES: Holotype, male, Linville Falls, North Carolina (3200 feet), June 3, 1940 (C. P. Alexander). Paratopotype, male, same data.

Distinguished from *E. formosa* Back by the black mystax and larger size.

**HOLCOCEPHALA JAENNICKE**

*Holcocephala* JAENNICKE, 1867, Abhandl. Senckenbergischen Naturf. Gesellsch., vol. 6, p. 359.

*Discocephala* MACQUART, 1838, Diptères exotiques, vol. 1, pt. 2, p. 50 (not Laporte, 1832).

*Helcocephala* LOEW, 1874, Berliner Ent. Zeitschr., vol. 18, p. 377.

*Holcocephala* WILLISTON, 1891, Trans. Amer. Ent. Soc., vol. 18, p. 72.

GENOTYPE: *Dasygogon abdominalis* Say (1823, Jour. Acad. Nat. Sci. Philadelphia, vol. 3, p. 50). By designation, Coquillett, 1910.

***Holcocephala fusca*, new species**

Total length, 5.5–7 mm. A small brownish species closely related to *abdominalis* Say, but the abdomen is dark brown, not yellowish red as in that species; the pollen of the thorax is pale gray-brown, not golden as in *abdominalis*, while the legs are brown, not yellow, with the tips of the tibiae, the upper surface of the femora (in the male), and the distal portions of the tarsomeres blackish.

MALE: Face brown pollinose; vertex yellow-brown pollinose; occiput gray pollinose. Antennae, proboscis, and palpi blackish. Mystacial hairs grayish; occipital and genal hairs whitish. Thorax with sides gray pollinose, the mesonotum pale gray-brown pollinose, with three confluent, anteriorly dark brown stripes. Scutellum pale gray-brown pollinose. Wings blackish brown, tips grayish, nearly hyaline. Legs reddish brown, tips of tibiae, upper distal portions of femora, and tips of tarsomeres blackish. Halteres pale yellowish brown. Abdomen dark brown, the incisures paler. The genitalia lighter, with a long, hook-like process below.

FEMALE: Similar; abdomen usually darker in color and the upper surface of the hind femora may lack the blackish area.

TYPES: Holotype, male, Donna, Texas, March, 1934 (J. W. Monk). Allotopotype, female, Donna, Texas, April, 1934 (J. W. Monk). Paratopotypes, two males, four females, March–April, 1934 (J. W. Monk). Paratypes: Ohio: Three males, seven females, Columbus, July 11–August 15, 1943–1947 (R. M. Goslin); three males, five females, Fairfield County, July 15–September 15, 1935–1939 (R. M. Goslin); one male, Union County, August 13, 1940 (Clem Wolfe); one male, Hocking

County, July 26, 1936 (E. S. Thomas and C. F. Walker); one male, two females, Washington Township S33, Hocking County, August 16, 1950 (R. M. Goslin); two males, two females, Adams County, August 4–10 (E. S. Thomas); 22 females, Erie County, August 14–September 12 (E. S. Thomas); one female, Lawrence County, August 18, 1929 (J. S. Hine); one female, Vinton County, July 30, 1937 (R. M. Goslin); five females, Ross County, August 16–25 (R. M. and W. E. Goslin); one male, Andersonville, South Union Township, Ross County, August 17, 1941 (R. M. Goslin); three females, North Union Township, Pickaway County, July 31, 1949 (R. M. Goslin and C. A. Triplehorn); two females, Alum Creek, Columbus, September 7–15, 1942–1943 (R. M. Goslin); one male, same locality, July 29, 1944 (R. M. Goslin); five males, five females, same locality, July 23–August 20, 1949, and August 12 and 13, 1950 (R. M. Goslin); one female, "Flatrocks," Lancaster, July 24, 1949 (R. M. Goslin and C. A. Triplehorn); one female, Batavia, Clermont County, August 18, 1949 (E. S. Thomas and R. M. Goslin); five males, eight females, Hyde Park, Cincinnati, August 18, 1949 (R. M. Goslin) (all in Ohio State Museum); two males, one female, Alum Creek, Columbus, July 18, 1948 (R. M. Goslin) (S. W. Bromley collection). Tennessee: Five males, 13 females, Campbell County, July 17–August 11, 1948; three males, three females, Cedar Creek, Campbell County, August 6–September 7, 1940 (R. M. Goslin); two females, same locality, September 1–3, 1941 (R. M. Goslin); nine males, two females, same locality, July 8–12, 1942 (R. M. Goslin); 124 males, 143 females, same locality, August 2–10, 1950 (R. M. Goslin); one female, Lafollette (Cumberland Mountains), August 13, 1938 (R. M. Goslin); one male, two females, same locality, August 26, 1940 (R. M. Goslin); 12 males, four females, same locality, August 9, 1950 (R. M. Goslin); 21 males, 26 females, Clinton, Anderson County, August 8, 1950 (R. M. Goslin) (all in Ohio State Museum); one male, two females, Cedar Creek, Campbell County, September 5, 1941 (R. M. Goslin); two females, same locality, July 8, 1942 (R. M. Goslin) (A.M.N.H. collection); five females, two males, same locality, August 26–September 7, 1940–1941 (R. M. Goslin); two females, Lafollette (Cumberland Mountains), August 26, 1940 (R. M. Goslin) (S. W. Bromley collection).

**SENOBASIS MACQUART**

*Senobasis* MACQUART, 1838, Diptères exotiques, vol. 1, pt. 2, p. 52.

GENOTYPE: *Senobasis analis* Macquart (1838, Diptères exotiques, vol. 1, pt. 2, p. 53, Brazil). By designation, Bromley, 1934.

***Senobasis corsair*, new species**

Total length, 21–23 mm. A large black and white species related to *mendax* Curran, but larger, with totally black legs, and with tergites 2, 3, and 4 completely white pollinose.

MALE: Head black; vestiture sparse, black, except the two long mystacal setae, brownish. Occiput black above, white pollinose below; vertex partially white pollinose. Pronotum with a broad, black, median line, white pollinose below. Mesonotum deep black, with a thin, white, median line and sides white pollinose. Pleura and coxae white pollinose. Scutellum with margin black, center of disc bluish white pollinose. "Metanotum" whitish pollinose. Legs black; under sides of tibiae dark piceous, hairs and bristles black; pulvilli gray. Wings blackish, anal region paler, nearly hyaline. Halteres black. Abdomen black, venter and tergites 2, 3, and 4 white pollinose. Genitalia subterminally enlarged, black, shining, claspers curved, hook-like, falcate.

FEMALE: Similar, but white on abdominal tergites confined to sides of segments 1 to 8, and incisures at basal third of abdomen. Tip of abdomen shining black.

TYPES: Holotype, male, Rio Indio, Panama, May 16, 1937 (S. W. Frost). Allotopotype, female, same data. Paratopotypes, four males, one female, same data. Holotype and allotype in collection of S. W. Frost, State College, Pennsylvania.

The name *corsair* was given this species because of its black and white color, traditional of the pirate's emblem.

***Senobasis frosti*, new species**

Total length, 15 mm. A black and yellow species related to *S. analis* Macquart, differing in having the first four tergites of the abdomen with black sagittate spots above along the median line and with a broad black line extending the length of each side of the abdomen along the junction of sternites and tergites.

FEMALE: Front and vertex yellow pollinose. Upper portion

of occiput dark brown pollinose, this brown area extending forward to ocelli. Postocular area gray pollinose. Proboscis black, almost colorless at base. Palpi grayish yellow, with golden hairs. Mystacal setae pale yellow, beard sparse and fine, grayish yellow. Antenna black, with black hairs, the first segment yellow. Occipitals few, stout, black. Pronotum black above, yellow at sides. Mesonotum margined with yellow, four large black spots on the disc nearly covering entire surface. Mesonotal bristles black, one between humerus and base of wing reddish yellow. Scutellum yellow. Pleura yellow. A black band at junction of postscutellum and abdomen. Halteres yellowish. Wings hyaline, with grayish tips. Legs pale yellow. Knees brownish. Tips of tibiae and tarsi grayish yellow. Abdomen yellow, with a broad black line along the sides. A black sagittate spot on the median area of tergites 1 to 5. Sides and posterior margin of tergite 5 blackish, tip of abdomen dark brown, probably black in a fully pigmented individual. The specimen from which this description is made is somewhat teneral.

TYPE: Holotype, female, Pecora, Panama, April 25, 1937 (S. W. Frost), in collection of S. W. Frost, State College, Pennsylvania.

I have named this species in honor of Dr. S. W. Frost of Pennsylvania State College.

#### DIOGMITES LOEW

*Diogmites* LOEW, 1866, Berliner Ent. Zeitschr., vol. 10, p. 21.

*Deromyia* AUTHORS, not Phillippi, 1865, Verhandl. Zool.-Bot. Gesellsch. Wien, vol. 15, p. 705.

GENOTYPE: *Diogmites platypterus* Loew (1866, Centuria VII, in Berliner Ent. Zeitschr., p. 36, U.S.A.). By designation, Bromley, 1936.

#### *Diogmites missouriensis*, new species

Total length, 18–25 mm. A pale reddish yellow species, without distinct blackish markings on abdomen, the palpi reddish, its proboscis reddish brown. Distinguished from *texanus* Bromley in lacking the black proboscis and in the fact that the wings are much paler; from *salutans* Bromley, by the darker mesonotal markings, the lack of blackish bands on dorsum of abdomen, and the more robust habitus.

MALE: Head reddish yellow, the vestiture and pollen whitish. The proboscis reddish brown, the palpi reddish.

Pronotal bristles yellowish. Mesonotum with a pair of brownish black, approximate, median lines, and two shorter maculations on either side: the two scutellars, the supra-alars, and fine hair on disc of mesonotum black. Thorax otherwise pale yellowish pollinose. Tuft of hairs in front of halteres and coxal hairs pale yellowish. Legs pale reddish yellow, with black bristles and hairs. Wings pale smoky.

Abdomen reddish yellow, with fine black hairs on dorsum and fine pale yellow scattered hairs along sides. Median lateral portions of tergites with a darker cast than the rest of the dorsal areas. Hypopygium reddish yellow, with pale hairs.

FEMALE: Similar. A few dark bristles on occiput and antennae. Ovipositor broad, reddish yellow, with reddish brown spines.

TYPES: Holotype, male, St. Louis, Missouri, July 12, 1940 (Japanese beetle traps). Allotopotype, July 20, 1936 (U.S.D.A. Japanese beetle traps). Paratopotypes, six females (all U.S.-D.A. Japanese beetle traps); July 14, 1936, August 19, 1936, July 5, 1937, July 10, 1939, all received from R. C. Froeschner. Paratypes, female, State College, Mississippi, April 2, 1946 (McCarty) (Mississippi State College collection); male, Cincinnati, Ohio, August 11, 1947 (S. W. Bromley and R. M. Goslin); female, Cincinnati, Ohio, August 17, 1949 (R. M. Goslin) (Ohio State Museum).

#### SAROPOGON LOEW

*Saropogon* LOEW, 1847, *Linnaea Ent.*, vol. 2, p. 439.

*Saropogon* WILLISTON, 1891, *Trans. Amer. Ent. Soc. Philadelphia*, vol. 18, p. 74.

GENOTYPE: *Dasyopogon luctuosus* Meigen (1820 *Systematische Beschreibung der bekannten Europäischen zweiflügeligen Insekten*, vol. 2, p. 259, central and south Europe). By designation, Coquillett, 1910.

#### *Saropogon laparoides*, new species

Total length, 14–16 mm. A small, black species with thorax brownish gray pollinose, vestiture of the entire body whitish, the legs reddish, with tips of tibiae and tarsi blackish. Wings

hyaline, the scutellars normal in length and coxal bristles white.

Head whitish pollinose. Vestiture white. Third antennal segment reddish proboscis and palpi black. Thorax with vestiture white, the mesonotum brownish gray pollinose, the pleura gray pollinose, the halteres pale brownish, the wings hyaline. Legs reddish except the tips of the tibiae and tarsi, which are piceous. Hairs and bristles white. Abdomen shining black, with five white hairs, the posterior lateral margins of the tergites white pollinose. Ovipositor with very short, blackish or brownish spines.

TYPE: Holotype, female, Presidio, Texas. Paratype, female, Chinati Mountain, Texas, August 4, 1929 (E. R. Tinkham).

This species bears a superficial resemblance to certain of the African dayopogonine genus *Meolaparus*.

### **Saropogon solus**, new species

Total length, 12 mm. A small yellowish species distinguished from all other North American species by the complete absence of bristles on the scutellum. Wings luteous, with gray tips. Legs entirely reddish yellow.

MALE: Antennae reddish; head yellow pollinose; mystax white; head and occipital hairs pale yellowish. Proboscis and palpi dark brown, the latter with dark hairs. Thorax yellow pollinose, with pale hairs and bristles. Mesonotum viewed from above with a pale brown, divided, median line and side spots. Scutellum yellow pollinose, bare. Wings pale luteous, grayish towards legs. Halteres yellow. Legs pale reddish yellow, with concolorous hairs and bristles. Abdomen dark reddish, shining, with very few scattered, short, reddish yellow hairs. Genitalia reddish, with concolorous hairs.

TYPE: Holotype, male, Hidalgo County, Texas, June 26, 1933 (W. Eby).

### **PSILOCURUS** LOEW

*Psilocurus* LOEW, 1874, Berliner Ent. Zeitschr., vol. 18, p. 373.

*Orthoneuromyia* WILLISTON, 1893, Kansas Univ. Quart., vol. 2, p. 67.

GENOTYPE: *Psilocurus nudiussculus* Loew (1874, Berliner Ent. Zeitschr., vol. 18, p. 370, North America). By designation, Coquillett, 1910.

***Psilocurus reinhardi*, new species**

Total length, 7.5–8 mm. A small, dark-colored species with the legs largely reddish in both sexes, the antennae wholly black, and the dorsum of the abdomen metallic blue-black, with the usual pollinose areas in the male, the abdomen duller colored in the female. There are two scutellar bristles in the male and four in the female. Closely related to *puellus* Bromley, from which it can be distinguished by the reddish legs and the metallic blue color of the dorsum of the abdomen in the male.

**MALE:** Head black; face, vertex, and occiput silvery pruinose. Mystax, ocellar bristles, and bristles of antennae pale straw-colored. Beard white. Third antennal segment oval, flattened vertically, and about the same length as the first two together. Thorax black, pleura gray-white pollinose. Mesonotum pale yellow pruinose. Supra-alars black. Scutellars (two) black. Wings hyaline, iridescent. Halteres yellow. Legs pale reddish; tips of tibiae darker and the femora darkened above. Abdomen metallic blue-black, the incisures and a lateral posterior spot on each side of tergites 1 to 6 pale brownish. These spots are white pruinose. Bristles at side of segments pale straw-colored.

**FEMALE:** Similar; femora entirely reddish. Abdomen broader than in male, duller colored; the scutellum with four bristles.

**TYPES:** Holotype, male, Bexar County, Texas, September 5, 1934. Allotype, female, same data.

Named in honor of Dr. H. J. Reinhard, Texas Agricultural Experiment Station, College Station, Texas.

**SUBFAMILY LAPHRIINAE****DORYCLUS JAENNICKÉ**

*Doryclus* JAENNICKÉ, 1867, Abhandl. Senckenbergischen Naturf. Gesellsch., vol. 6, p. 366.

The aberrant Neotropical laphriine genus *Doryclus* has been keyed recently by Curran (1942, Bull. Amer. Mus. Nat. Hist., vol. 80, pp. 55–57) and by Carrera (1949, Arq. Zool. Estado de São Paulo, Brazil, vol. 7, pp. 8–13). A revised key is presented herewith to accommodate the three species described below as new.

*Doryclus*, together with *Megapoda*, *Pseudorus*, and *Pronomop-*



*sis*, bears a spur on the under side of the tip of the front tibia which sets these genera apart from all other Laphriinae. They compose the tribe Megapodini of Carrera.

The Megapodini are wasp-like in appearance and are undoubtedly mimetic of certain aculeate Hymenoptera with which they are associated in a Mullerian association. Their affinities with the other Laphriinae are indicated by the fact that their larval and pupal stages take place in decaying wood. Dr. Zetek has reared certain species of this group from hollow citrus trees in Panama.

GENOTYPE: *Asilus distendens* Wiedemann (1828, Aussereuropäische zweiflügelige Insekten, vol. 1, pp. 61, 571). By designation, Jaennicke, 1867.

#### KEY TO THE SPECIES OF *Doryclus*

1. Body and legs deep black.....2  
Body and legs more or less brownish.....3
2. Wings hyaline; mesonotum smooth; 13–17 mm. (Brazil).....  
.....*distendens* Wiedemann  
Wings clouded in a definite pattern; large species, 25 mm. (Mexico).....  
.....*mexicanus*, new species
3. Wings clouded in a definite pattern or at least partly fumose.....6  
Wings hyaline.....4
4. Mesonotum strongly roughened in the middle; femora ferruginous; 12 mm. (Panama).....*panamensis* Curran  
Mesonotum not strongly roughened in middle.....5
5. Abdomen brown; 11–13 mm. (Brazil).....*carrerai*, new species  
Abdomen metallic blue or violaceous above; 10–16 mm. (Brazil).....  
.....*plaumanni*, new species
6. Wings yellowish, with distinct brown cloudings; legs brownish; 13–15 mm. (Brazil).....*crassitarsis* Macquart  
Wings with less definite pattern.....7
7. Abdomen metallic blue or violaceous above.....8  
Abdomen brownish or yellowish; palpi black; 12–14 mm. (Argentina, Brazil).....*guentheri* Arribalzaga
8. Basal antennal segments black; palpi yellow; posterior tarsi black in contrast to the others which are yellowish brown; 12–14 mm. (Brazil).....  
.....*variipennis* Walker  
Antennae reddish.....9
9. Legs brown, anterior ones black; hind tibiae testaceous; palpi black; 12 mm. (Mexico).....*cyaneiventris* Macquart  
Legs reddish, the anterior tibiae and all tarsi black; palpi ferruginous; 12 mm. (Surinam).....*latipes* Van der Wulp

#### ***Doryclus mexicanus*, new species**

Total length, 25 mm. Length of wing, 22 mm. A deep black

species with black vestiture and four gray pollinose lines on the mesonotum; the wings yellowish, with a median dark cloud and the apical fourth black.

**MALE:** Head black, with black vestiture. Thorax black, with black vestiture, the mesonotum with four grayish pollinose lines, the two median, narrow, and distinct, the outer lines broader and less distinct. Legs black, with black vestiture. Halteres black. Wings yellowish, with a median band and apical fourth blackish. Abdomen deep black, with metallic bluish reflections above; vestiture and hypopygium black.

**TYPE:** Holotype, male, Aqua Prieta, Mexico, July 18, 1933 (D. Elmo Hardy).

This large, striking species is quite distinct from the previous Mexican *Doryclus cyaneiventris* Macquart, as outlined in the above key.

#### ***Doryclus carrerai*, new species**

Total length, 11–13 mm. Length of wing, 12 mm. A brown species with hyaline wings and black vestiture.

**MALE:** Head brown; eyes and vestiture black. Thorax and halteres brown. Abdomen and legs brown. Vestiture of legs black, of abdomen mostly pale. Wings hyaline. Mesonotum with four gray pollinose lines. Hypopygium brown.

**FEMALE:** Similar, the ovipositor long and slender, dark brown.

**TYPES:** Holotype, male, Nova Teutonia, Brazil, December 7, 1941 (F. Plaumann). Allotopotype, female, October 29, 1941 (F. Plaumann). Paratopotypes, one male, November 21, 1941 (F. Plaumann); one female, December 7, 1941 (F. Plaumann) (A.M.N.H.); six males, two females, December 3, 1940, to January 26, 1942 (F. Plaumann) (S. W. Bromley collection).

Named in honor of Sr. Messias Carrera, Department of Zoology, Secretariat of Agriculture, São Paulo, Brazil, who has accomplished such excellent work on the Asilidae of Brazil and Mexico.

#### ***Doryclus plaumanni*, new species**

Total length, 10–16 mm. Length of wing, 14 mm. A brown species with hyaline wings; the abdominal tergites with a violaceous sheen. Most of the vestiture is black, but the head and occipital area are pale brown.

MALE: Head brown, the facial, antennal hairs and mystax are black, the rest of the vestiture is brownish. Thorax brown, with dorsum of mesonotum gray pollinose. Wings hyaline, halteres brown. Legs brown, with black vestiture. Abdomen brown, with deep violaceous reflections. Most of the abdominal hairs are pale. Hypopygium brown, with black hairs.

FEMALE: Similar; the ovipositor long and slender, dark brown.

TYPES: Holotype, male, Nova Teutonia, Brazil, January 3, 1942 (F. Plaumann). Allotopotype, female, February 8, 1941 (F. Plaumann). Paratopotypes, male, December 7, 1941 (F. Plaumann); three females, October 20, 1941, January 27, 1941, and October 10, 1941 (F. Plaumann) (A.M.N.H.); four males, two females, October 9, 1940, to February 12, 1942 (F. Plaumann) (S. W. Bromley collection).

Named in honor of Mr. Fritz Plaumann, an indefatigable collector and author, of Nova Teutonia, Brazil.

#### ATOMOSIA MACQUART

*Atomosia* MACQUART, 1838, Diptères exotiques, vol. 1, pt. 2, p. 73.

*Comansia* WALKER, 1851, Insecta Saundersiana, Diptera, vol. 1, p. 154.

GENOTYPE: *Laphria puella* Wiedemann (1828, Aussereuropäische zweiflügelige Insekten, vol. 1, p. 531, North America). By designation, Coquillett, 1910.

#### *Atomosia mucidoides*, new species

Total length, 6–7 mm. Runs in the key to *mucida* Osten Sacken, but is to be distinguished therefrom by the shorter third antennal joint, the dark brown first and the light brown second antennal segments, not yellow as in *mucida*, and the more scattered pale pubescence of the thorax and abdomen, not thick and silvery as in *mucida*, where the thorax and abdomen are densely covered. I have a specimen of the true *mucida* from El Paso, Texas, July 11, 1917.

MALE: Head black, grayish white pollinose. Mystax and facial hairs white; ocellars (two) white, antennae black, the second segment pale brown, the third segment about one and one-fourth the length of the first two together. Thorax black, sides silvery pollinose. Mesonotum shiny, with five pale yellow short hairs. Posterior calli pale reddish, with two yellow bristles.

Scutellum with two pale marginal bristles. Halteres yellow. Wings hyaline. Legs yellow, the ultimate tarsal segments black. Abdomen black, with fine, short, brassy-colored hairs, the incisures white.

FEMALE: Similar.

TYPES: Holotype, male, Cameron County, Texas, July 3, 1933 (S. W. Bromley). Allotype, female, Bexar County, June 15, 1928 (H. B. Parks). Paratypes, Austin, June 10, 1921 (R. H. Painter); Bexar County, May 3, 1929 (J. Wilcox, in H. B. Parks collection).

### PROAGONISTES LOEW

*Proagonistes* LOEW, 1858, Ofvers. af K. Vet.-Akad. Forhandl., vol. 14, p. 362.

GENOTYPE: *Proagonistes validus* Loew, 1858, a synonym of *Laphria princeps* Walker, 1855, South Africa. By designation, Bromley, 1930.

The genus *Proagonistes* Loew comprises a group of large laphrine robber flies which I reviewed in 1930 (Ann. Mag. Nat. Hist., ser. 10, vol. 6, pp. 209-225). In this paper I described *P. auripes* from Malay, and I mentioned (p. 215) that the female had not been seen and, until such was the case, the species could not be definitely generically consigned.

Since then, in studying a collection sent me by the late Mr. Pendlebury, Selangor Museum, Kuala Lumpur, Malay, I found what may be the female. This proved to belong to the genus *Anisosis* Hermann, and the species I described as *Proagonistes auripes* is most certainly an *Anisosis* related to, if not identical with, *phalaris* Osten Sacken.

This leaves the genus *Proagonistes*, according to our present knowledge, restricted to the Ethiopian region.

Wiedemann (1828, Aussereuropäische zweiflügelige Insekten, vol. 1, p. 425) headed the list of *Asilus* with *A. beelzebub*, the point of origin of which was unknown. The description is very suggestive of a *Proagonistes*, and it is possible, if not probable, that *beelzebub* may prove to be my *gigantipes* from Madagascar. There has been no definite identification of *beelzebub* since its description.

### DASYLLIS LOEW

*Dasyllis* LOEW, 1851, Bemerkungen über die Familie der Asiliden, p. 20.

GENOTYPE: *Laphria haemorrhoea* Wiedemann (1830, *Aussereuropäische zweiflügelige Insekten*, vol. 2, p. 645). By designation, Coquillett, 1910.

*Dasyllis* is a Neotropical laphriine genus of the *Andrenosoma* complex closely related to the Old World *Hyperechia*. It is a small genus of large, robust flies, all of which are mimetic of the large, brilliantly colored bees of the genus *Eulaema*. The outstanding generic feature is the compact, thick, oblique mystax. This is illustrated in figure 1, showing the head of *Dasyllis fascipennis* Macquart in profile. The North American *Bombomima* were erroneously listed by authors under *Dasyllis* for many years in spite of protestations by Yerbury, McAtee, Bezzi, and others. Five species of *Dasyllis* are known:

*Albicollis* Bigot, 1878, *Ann. Soc. Ent. France*, ser. 5, vol. 8, p. 229, South America.

*Croceiventris* Wiedemann, 1821, *Diptères exotiques*, p. 234, Brazil.

*Erythrura* Hermann, 1912, *Nova Acta Acad. Caes. Leopoldino-Carolinae*, vol. 96, p. 238, Paraguay.

*Fascipennis* Macquart, 1834, *Histoire naturelle des insectes, diptères*, vol. 1, p. 284, Central America.

*Haemorrhoea* Wiedemann, 1830, *Aussereuropäische zweiflügelige Insekten*, vol. 2, p. 645, Bahia.

The *Andrenosoma* complex contains the following genera: *Andrenosoma* Rondani, *Dasyllis* Loew, *Hyperechia* Schiner, *Neophoneus* Williston, *Pogonosoma* Rondani, *Proagonistes* Loew, and *Stenoxericera* Macquart.

### BOMBOMIMA ENDERLEIN

*Bombomima* ENDERLEIN, 1914, *Zool. Anz.*, vol. 44, fasc. 6, p. 253.

*Dasyllis* AUTHORS, not Loew, 1851, *Bemerkungen über die Familie der Asiliden*, p. 20.

GENOTYPE: *Laphria fulvithorax* Fabricius (1805 = *Thoracica* Fabricius, *Systema Antliatorum*, p. 158). By designation, Enderlein, 1914.

For many years authors confused this genus with *Dasyllis*. *Bombomima* is closely related to *Laphria*, from which it can be distinguished by the long, thick pile on the mesothorax, the more robust build, and the broader abdomen. There are not the remotest connections with *Dasyllis*, which is a genus of the *Andrenosoma* complex.

***Bombomima apila*, new species**

Total length, 28–35 mm. A large species with yellow mystax and beard, a patch of yellow hairs in front of bases of wings and in front of halteres, the coxae yellow haired, the first pair of legs and the tibiae and tarsi of second pair with many yellow hairs, mesonotal hairs mostly yellow but scutellar hairs and bristles black. Distinguished from all other *Bombomima* by the shining black of the dorsum of the abdomen, practically devoid of pile.

MALE: Mystax and head yellow; occipitals, vertical hairs, antennal hairs, palpal hairs, and hairs of oral margin black with intermingled yellow. Pronotal hairs mostly black, some yellow. Mesonotum with yellow hairs and a few short black intermingled. Scutellum with black hairs and bristles. Pleural tufts and coxal hairs yellow. Legs black, with mostly black hairs but many yellow on front legs and second tibiae and tarsi. Wings brown, halteres pale brown. Abdomen mostly black, with piceous undertones, and with dorsum free of long pile; some yellow pile along the sides, intermingled with black. Genitalia black, with black hair.

FEMALE: Similar; ovipositor with both black and pale hair.

TYPES: Holotype, male, Anniston, Alabama, June 26, 1940 (M. E. Smith). Allotopotype, female, June 2, 1940, same data. Paratopotypes, three males, three females, June 2 to June 29, 1939–1940, same data. Paratypes, three males, two females, Cumberland Mountains, Lafollette, Tennessee, June 3 and 6, 1947 (R. M. Goslin); one female, Sitton's Gulch, Georgia, August 2, 1941 (P. W. Fattig). A pair at the Ohio State Museum; two males, one female in S. W. Bromley collection.

Related to both *champlainii* Walton, but lacking the black and yellow pile pattern of the dorsum of the abdomen of that species, and *grossa* Fabricius, from which it differs in having more yellow pile on the legs. From all other related species it differs in having the dorsum of the abdomen shining and bare of pile.

***Bombomima asturina*, new species**

Total length, 14–24 mm. A black species with red pile on the dorsum of abdomen, distinguished from *B. fernaldi* Back by the predominantly black instead of yellow pile on the first two abdominal tergites, and by the greater amount of black pile inter-

mingled with the yellow on the anterior half of the mesonotal disc.

MALE: Head black, yellow pilose with a few black hairs on vertex, antennae, oral margin, and palpi; the occipitals mostly black. Beard white.

Pronotal hairs mostly black, a few pale interspersed. Mesonotum yellow pilose, with many black hairs on anterior half. Scutellum with black hairs and bristles. Pleural tufts yellow. Front coxae with white pile, successively thinner, shorter, and with more black on the second and third pairs. Legs with black bristles and hairs, the tibiae and fore femora with considerable pale yellow pile. Halteres black, wings pale brown.

Abdomen with black hairs on first three tergites, the sides with a few pale hairs intermingled; fourth, fifth, and sixth with red hairs, seventh and eighth with yellow pile. Genitalia black, with yellow pile and a few red hairs interspersed.

FEMALE: Similar; ovipositor black, with yellow hairs and black bristles along sides.

TYPES: Holotype, male, Robson, British Columbia, July 17, 1938 (H. R. Foxlee). Allotopotype, female, July 13, 1941, same data. Paratopotypes, eight males, five females, May 20 to August 22, 1941–1945, same data. Paratypes, female, Revelstoke Mountain, British Columbia, 6000 feet, August 12, 1923 (E. R. Buckell); female, Lillooet, British Columbia, May 27, 1925 (E. R. Buckell); female, Seton Lake, Lillooet, British Columbia, July 14, 1926 (J. McDunnough); male, Lillooet, British Columbia, August 10 (C. H. Young); male, Alta Lake, Mons, British Columbia, July 11, 1926 (J. McDunnough); male, three females, Courtenay, British Columbia, June 17, 1932 (J. L. G.).

This is the species referred to *astur* Walker by Banks in his article on *Dasyllis*. Banks' species *californicus* is a synonym of *astur*.

### ***Bombomima fattigi*, new species**

Total length, 26 mm. A black species, yellow pilose, about the size of *champlainii* Walton, but distinguished by the red hairs on dorsum of abdomen. Related to *vorax* Bromley, but the arrangement of the red pile is quite different.

FEMALE: Mystax, beard, part of palpal, vertical, and antennal hairs yellow. Black hairs on occiput, vertex, antennae, oral

margin, and palpi, more or less interspersed with the pale hairs.

Pronotal bristles mostly black, a few pale, as are the humeral hairs. Disc of mesonotum with appressed, long, yellow pile. Scutellum with black hairs and marginal bristles. Long vestiture of pleura and coxae yellow. Legs with mostly black hairs and bristles, a few pale hairs on the forelegs and fewer still on the second pair of legs. Halteres and wings pale brown.

Abdomen with few black hairs on first three tergites, and on the seventh and succeeding segments. Lateral portions with yellow pile. Tergites 4, 5, and 6 with red hairs. Ovipositor black, with yellow pile.

TYPE: Holotype, female, Yonah Mountain, Georgia, June 22, 1935 (P. W. Fattig).

This is the species referred to by Fattig in his list of robber flies of Georgia (1945, p. 20, no. 71).

#### SUBFAMILY ASILINAE

#### MALLOPHORA MACQUART

*Mallophora* MACQUART, 1834, Histoire naturelle des insectes, diptères, vol. 1, p. 300:

GENOTYPE: *Asilus bomboides* Wiedemann (1821, Diptères exotiques, p. 203, North America). By designation, Coquillett, 1910.

The genus *Mallophora*, a Neotropical asiline genus most numerous in species and individuals in South America, is composed of robust flies of the *Promachus* complex, many of which are mimetic of bumblebees, xylocopids, megachilid or other bees. From *Promachus* they can be distinguished by their blunt-tipped claws, and from *Promachina* by their robust habitus, small hypopygia, and short ovipositor.

The subgenus *Mallophorina* Curran (1934, Families and genera of the North American Diptera, p. 183), characterized by the gently convex and evenly pilose face, is quite distinct in the United States, but one can find all gradations in the South American fauna, so that *Mallophorina* is not tenable as a completely differentiated genus.

The following key to those members of the subgenus *Mallophorina* that inhabit the southeastern United States east of the Mississippi River was kindly checked by Drs. C. F. W. Muesebeck and M. C. T. Greene of the Division of Insect Identifica-



tion, United States Bureau of Entomology and Plant Quarantine, Washington, D. C., with reference to all species but *minuta*.

The three species here keyed all have the first posterior cell closed or nearly so, and the femora black basally.

KEY TO THE SPECIES OF THE SUBGENUS *Mallophorina* CURRAN  
EAST OF THE MISSISSIPPI RIVER

1. Occiput or pronotum with a few black bristles; bases of posterior tibiae with both black and yellow hairs; petiole of first posterior cell about as long as anterior cross vein; 13–19 mm. .... *laphroides* Wiedemann  
Pronotum with only pale yellow hairs or bristles. .... 2
2. Posterior tibiae yellow-haired on basal half; petiole of first posterior cell at most half as long as anterior cross vein; 11–18 mm. .... *clausicella* Macquart  
Posterior tibiae black-haired dorsally on entire length; small species, 7–10 mm. .... *minuta* Macquart

**ECORITOSIA** SCHINER

*Ecoritosia* SCHINER, 1866, Verhandl. Zool. Bot. Gesellsch. Wien, vol. 16, p. 674.

GENOTYPE: *Asilus barbatus* Fabricius (1787, Mantissa Insectorum, vol. 11, p. 358, Brasil and Guiana). By original designation, 1866.

*Ecoritosia* is closely related to *Proctacanthus*, from which it can be distinguished by the thick, compact, oblique mystax (fig. 2), in addition to the short abdomen, usually shorter than the wings.

**Ecoritosia zamon** Townsend

*Ecoritosia zamon* TOWNSEND, 1895, Proc. California Acad. Sci., ser. 2, vol. 4, p. 600.

In my paper on the Asilidae of Texas (1934, Ann. Ent. Soc. Amer., vol. 27, p. 106, no. 120), I erroneously referred to this species as *amphinome* Walker. This genus was straightened out by Curran (1934, Amer. Mus. Novitates, no. 752, pp. 13, 14). I have since obtained another *zamon* from Texas: a male from Presidio, September 1, 1934 (W. L. Barrett, Jr.).

*Zamon* was originally described from a large series of specimens from Lower California by Townsend, and a number of the co-types have since turned up in the American Museum of Natural History and in the University of Kansas. As no holotype and allotype were originally designated, I am fixing the following

male specimen in the American Museum as holotype: "Am. Mus. Nat. Hist. 10031, W. M. Wheeler, San Jose del Cabo," and labeled "*Proctacanthus zamon* Townsend, new species." The allolectotype is the female, same data, but No. 10030.

### PROCTACANTHELLA BROMLEY

*Proctacanthella* BROMLEY, 1934, Ann. Ent. Soc. Amer., vol. 27, p. 96.

GENOTYPE: *Asilus cacopilugus* Hine (1909, Ann. Ent. Soc. Amer., vol. 2, p. 166, United States). By designation, Bromley, 1934.

### *Proctacanthella robusta*, new species

Total length, 21 mm.; large, robust member of this genus, superficially suggestive of a small *Proctacanthus brevipennis*. The anterior cross vein is beyond the middle of the discal cell; the hairs on the first antennal segment are mostly black; the front femur is hairy below, with no spines intermingled. Larger, more robust, and darker colored than *leucopogon* Williston.

MALE: Beard, mystax, hairs of vertex yellowish. Face yellowish white pollinose. Hairs of palpi black. Occipital bristles and antennal hairs black. Thorax grayish brown pollinose; mesonotum with a narrowly divided black median line and a narrow, lateral, black spot on each side. Hairs and bristles of mesonotum black. Scutellum with numerous upright black bristles, those on the margin longer; a few pale hairs intermingled. Pleura and coxae with straw-colored hairs and bristles. Wings subhyaline; halteres light brownish. Legs black; the base and tips of femora, most of the tibiae, and under sides of tarsi reddish yellow. Hairs of legs yellowish; bristles of hind legs black, of middle legs some yellow, some black, most of those of front yellowish. Abdomen dark gray, with pale hairs; incisures light gray; sixth and seventh tergites yellowish white pollinose. Genitalia reddish with yellowish hairs; upper forceps projecting less than one-third their length beyond the lower (fig. 3).

TYPE: Holotype, male, Port Lavaca, Texas, July 24, 1925, in Ohio State University collection, Columbus, Ohio.

### ERAX MACQUART

*Erax* MACQUART, 1838, Diptères exotiques, vol. 1, p. 107.

GENOTYPE: *Erax rufibarbis* Macquart (1838, Diptères exotiques, vol. 1, p. 116, United States). By designation, Hine, 1919.

***Erax currani*, new species**

Total length, 18–21 mm. A pale brown and black species similar to *Erax interruptus* Macquart but differs in having the genitalia much broader (fig. 4).

MALE: Face golden brown pollinose with concolorous vestiture. Some bristles of occiput, vertex, antennae, mystax, and most of the palpi black. Thorax golden brown pollinose, with a broad, median, dark brown line on mesonotum. Fine hairs and bristles of mesonotum and scutellum black. Tuft of bristles in front of wing bases and halteres black. Pronotal and humeral hairs yellowish brown, as are those of coxae. Posterior coxae with two stout black bristles. Legs reddish brown, under sides of femora black. Legs with hairs yellowish brown, bristles black. Wings pale brown, nearly hyaline. Halteres pale brown.

Abdomen black, the second and third tergites with large pale side spots; the sixth and seventh tergites whitish pollinose except on median dorsal line. Genitalia reddish brown, with both pale and black hairs.

TYPES: Holotype, male, Corozal, Canal Zone, January 16, 1929 (C. H. Curran). Paratype, male Barro Colorado, Canal Zone, March 19, 1933 (H. F. Schwarz).

Named in honor of Dr. C. Howard Curran, Curator, Department of Insects and Spiders, the American Museum of Natural History, one of the greatest dipterists of all times.

***Erax mesquite*, new species**

Total length, 13 mm. A small fragile species of the *stramineus* group, having the furcation of the third vein at the middle of the distance between the base of the second posterior cell and the small cross vein; the abdomen with long white hair parted at the middle and directed outward, the mystax white, and the legs red, with black tibiae. Related to *canus* Hine but much smaller and slenderer, the hypopygium lacking the tuft of hair below at apex, and to *pilosus* Hine, from which it differs in having the scutellum and posterior portion of mesonotum with black bristles, not white, and the slender hypopygium, as viewed from above, not swollen towards the tip.

MALE: Head black, grayish white pollinose. Mystax and beard white. Ocellars and occipitals black; palpi black, white-haired. Antennae black, with white hairs and bristles. Mesonotum pale brown pollinose, with darker indistinct markings; the hairs and bristles black. Pleura gray pollinose, white-haired. Scutellum with black hairs and bristles. Wings hyaline, iridescent. Halteres pale brown. Legs with white hairs and black bristles. Femora black. Tibiae and tarsi red, with blackish tips. Abdomen black, white pollinose, with long, white, outwardly directed hairs, parted along the middorsal line. Genitalia black, with black and some pale hairs. Seen from above, narrower than sixth segment, sides parallel, not swollen at tip; from side, general outline cylindrical. Seventh sternite with a little tuft of black hairs.

FEMALE: Similar, but with pollen of head and mesonotum with slightly more of a yellow tinge, the hairs on disc of scutellum whitish. The abdomen gray-white pollinose, and tergite with the large central anterior portion blackish. Ovipositor black, about the length of the preceding five abdominal segments.

TYPES: Holotype, male, Starr County, Texas, July 23, 1933 (S. W. Bromley), in mesquite thicket. Allotype, female, Donna, Texas, July, 1935 (J. W. Monk). Paratypes, five males, five females, Donna, Texas, July 1935 (J. W. Monk).

### ***Erax monki*, new species**

Total length, 18–21 mm. A brown species of the *stramineus* group, having the furcation of the third vein distinctly beyond the middle of the distance between the base of the second posterior cell and the small cross vein, the femora entirely black, the mystax sordid white, the scutellum with black hair and bristles (in female, the hair and some of the bristles pale yellowish). Related to *nemoralis* Hine, from which it can be distinguished by its smaller size, more slender build; hyaline wings, the white hairs of mystax, beard, coxae, and legs in the male not bright yellow as in *nemoralis*, and the genitalia (from side view) more rounded at tip. In the female, *monki* differs from *nemoralis* in having the hairs whiter, the bristles of scutellum partly yellowish, the femora gray pollinose, and the abdomen gray pollinose above, without the median dark markings of *nemoralis*.

MALE: Head black, pale gray-yellow pollinose. Beard, mystax, palpal hairs sordid whitish. Occipital and ocellar

bristles and bristles of vertex black. Thorax yellowish brown pollinose, mesonotum with brown median and lateral vittae. Hairs and bristles of mesonotum and scutellum black. Pleura brown pollinose, with pale hairs. Hypopleural bristles black. Hairs of coxae and legs sordid white. Legs black; external basal portion of tibiae red; bristles black. Wings hyaline, halteres brown. Abdomen black, posterior margin of segment 3 and all of segments 4, 5, 6, and 7 silvery pollinose, with long, white, outwardly projecting hairs parted along median dorsal line on all except seventh of those that are silvery pollinose. The base of abdomen black haired above. The genitalia black, upper forceps enlarged as in *nemoralis* but more rounded and truncate, when viewed from the side.

FEMALE: Thorax lighter colored, with more pale hairs. Scutellum with pale hairs on disc and some pale marginal bristles. Abdomen gray pollinose, with very short, pale, scattered hairs.

TYPES: Holotype, male, Donna, Texas, October 1, 1933 (J. W. Monk). Allotopotype, female, September 30, 1933 (J. W. Monk). Paratopotypes, one male, three females, September 24 to October 8, 1933 (J. W. Monk).

Named in honor of the collector, Mr. J. W. Monk.

### ***Erax completus* Macquart**

*Erax completus* MACQUART, 1838, Diptères exotiques, vol. 1, p. 117.

*Efferia rava* COQUILLETT, 1893, Canadian Ent., vol. 25, p. 176.

A species of the *rufibarbis* group, distinguished from *rufibarbis* Macquart by the broader, larger, more bulbous genitalia, more thickly hirsute with black hairs, the pale yellowish, almost white mystax and white beard, and the presence of three submarginal cells as in Hine's *anomalus* group of *Erax*. The female has most of the scutellar bristles pale, with black hairs on the disc. The presence of the three submarginal cells is not invariable, but it is the rule; whereas in *rufibarbis* the presence of three submarginal cells is exceptional. The difference in the genitalia is sufficient to distinguish the species so far as males are concerned. *Completus* is a common species in the Rio Grande Valley and southwestern Texas in September and October. Mr. Reinhard received a shipment of 103 specimens from Charlotte, Atascosa County, Texas, collected on October 17, 1934, by C. E. Heard and C. J. Burgin. Of this lot, 97 had three submarginal cells in both wings, three had three submarginal cells

in the left wing only, and one had only two submarginal cells present in both wings. J. W. Monk and Wayne Eby collected many specimens of *Erax completus* in Hidalgo County, Texas, in September and October, 1933. Several were feeding on small butterflies, and one was feeding on a sarcophagid fly.

***Erax schadei*, new species**

Total length, 18–24 mm. A black species with tibiae partly yellow, the abdomen with pale golden bands, the thorax grayish yellow pollinose, the branching of the third vein opposite the cross vein that bounds the distal border of the discal cell, the male genitalia hooked at the apex, and the ovipositor thick and blade-like.

MALE: Mystax, beard, and palpal hairs golden. Post-genal hairs pale yellowish. Occipital bristles and hairs of vertex and antennae mostly black, some yellowish.

Thorax grayish yellow pollinose; mesonotum with the dorsal blackish markings and the hairs and bristles mostly black. Pleural tufts pale yellowish. Scutellum with black hairs and many marginal yellow bristles. Supra-alars black anteriorly, yellow posteriorly. Coxae blue-gray pollinose, with golden hairs. Legs with black bristles and golden hairs. Femora, tips of tibiae, and tarsi black; rest of legs yellow. Wings hyaline. Halteres yellowish. Abdomen black, with yellow incisures, golden hairs, the sides of the tergites gray pollinose. Sides of fifth and sixth and entire seventh tergites white pollinose. Genitalia piceous, with apical hook reddish, hairs black (fig. 5).

FEMALE: Similar, the ovipositor black, thick, and blade-like.

TYPES: Holotype, male, Hape, Paraguay, November, 1927 (F. Schade). Allotopotype, female, same data. Paratopotype, female, same data. Paratype, female, Villarica, Paraguay, January, 1937 (F. Schade).

Named in honor of F. Schade, the famous collector of Villarica, Paraguay.

***Erax helenae*, new species**

Total length, 22–31 mm. A pale yellowish, tan-colored pollinose and pruinose species of the *rufibarbis* group, having the tip of the ovipositor divaricate, the mesonotum and scutellum

strongly bristled, and the third vein branching beyond the middle of the distance between the base of the second posterior cell and the small cross vein.

**MALE:** Vestiture of head white, except four or five of the shorter bristles of the vertex and the distal bristles of the palpi which are black. Mesothorax mostly white haired and bristled, but there are some black hairs and bristles on the disc of the mesonotum and a few short black hairs on the scutellum. Most of the bristles of the mesonotum and the scutellum are whitish or yellowish. Mesonotal pollen yellowish, but there are two median lines on the dorsum free of pollen. Legs black, the tibiae on the posterior sides, except the tips, pale reddish brown. Bristles of the legs black; there are nine to 11 stout black spines on the under sides of the hind femora. Claws black, pulvilli yellow. Wings hyaline, halteres yellowish brown. Abdomen with whitish hairs and yellowish pollen, each of tergites 1 to 5 with a black spot bare of pollen; segments 6, 7, and 8 silvery pruinose. Hypopygium reddish brown, with white hairs, some black hairs on the dorsum and a row of black hairs on the median venter.

**FEMALE:** Similar, the ovipositor shining dark reddish brown.

**TYPES:** Holotype, male, Masters, Colorado, 4500 feet, September 18, 1938 (E. B. Andrews). Allotype, female, Masters, Colorado, 4300 feet, September 3, 1939 (E. B. Andrews). Paratopotypes, 27 males, 38 females, Masters, Colorado, 4300 feet, September 3 to 17, 1939 (E. B. Andrews). Paratypes, six males, nine females, Loveland, Colorado, dry creek, 5200 feet, September 12 to 22, 1937 (E. B. Andrews); four males, four females, Orchard, Colorado, 4500 feet, September 28, 1938 (E. B. Andrews); one male, Calhan, Colorado, August 19, 1936 (J. D. Beamer); one female, August 19, 1936 (W. D. Field); one male, Parshall, Colorado, August 17, 1936 (M. B. Jackson).

Differs from *Erax bicaudatus* Hine in the much paler pollen and by having a larger proportion of the bristles of the posterior part of the mesonotum and scutellum whitish or pale yellowish.

Holotype and allotype in the S. W. Bromley collection. A series of paratypes in the American Museum of Natural History, another series in the Ohio State Museum, and another series in the Museum of Comparative Zoölogy.

Named in honor of my wife, Dr. Helen Jean Brown Bromley.

***Erax tricellus*, new species**

Total length, 24–32 mm. A silvery gray pollinose species of the *anomalus* group having three submarginal cells.

MALE: Vestiture of the head white, except the two vertical bristles and a few of the occipitals which may be black or brownish. Thorax reddish brown, whitish pruinose and pollinose. Fine hairs of mesonotum, supra-alars, posterior mesonotals, and scutellars black. Halteres yellowish brown, wings hyaline. Legs abundantly white pilose, with a few black bristles, ground color mostly reddish, with the anterior portion of the femora black. Abdomen silvery pruinose, with white hairs parted in the middle and directed outward. The hypopygium slender and somewhat elongate, reddish brown, with a thin tuft of black hairs along the venter and at the tip.

FEMALE: Similar, but without the long white hairs parted in the middle on the abdomen.

TYPES: Holotype, male, Buckeye, Arizona, June 25, 1925 (S. W. Bromley). Allotype, female, Salome, Arizona, July 20, 1948 (W. Goslin). Paratypes, one male, same data as holotype, with therevid prey (S. W. Bromley); one male, Buckeye, Arizona, August 7, 1917 (J. Bequaert); seven males, Salome, Arizona, July 20, 1948, one male with female *Erax spiniventris* Hine, prey, and one male with small acridid, *Melanoplus* sp. (W. Goslin); three males (M.C.Z.), Deming, New Mexico, July 12, 1917, Florence, Pina County, Arizona, July 28, 1917, Post Creek Canyon, Pinaleno Mountains, Fort Grant, Arizona, July 15 to 18, 1917 (J. Bequaert); one female, San Simon, Cochise County, Arizona, July 17, 1937 (J. Bequaert); nine females, Salome, Arizona, July 20, 1948; one female, with *Colops* sp. prey (W. Goslin); two females (M.C.Z.), Post Creek Canyon, Pinalemo Mountains, Fort Grant, Arizona, July 15 to 18, 1917, and Tempe, Arizona, July 4 (both J. Bequaert); five males, Arivaca, Arizona, July 12, 1940 (E. E. Kenaga, D. E. Hardy, and L. W. Hepner) and Boyce Thompson Arboretum, Superior, August 1, 1933; nine females, Arivaca, July 12, 1940 (R. H. Beamer, E. E. Kenaga, and D. E. Hardy), Continental, July 15, 1940 (E. E. Kenaga, L. J. Lipovsky), Ajo, July 23, 1938 (L. W. Hepner), Wickenburg, July 17, 1940 (D. J. and J. N. Knull) and Tucson, August 16, 1940 (D. J. and J. N. Knull).

Holotype and allotype in S. W. Bromley collection. Paratypes in the American Museum of Natural History, Ohio State



Museum, the Museum of Comparative Zoölogy, and the University of Kansas.

Differs from *candidus* Coquillett in being larger, with the hypopygium longer and proportionately more slender, and reddish brown instead of black. In *candidus* the femora are entirely black. In *anomalus* Bellardi, the bristles of the palpi are black. *Pernicis* Coquillett differs in being considerably smaller and lacking the white hair of the male abdominal tergites parted at the middle and directed outward and in having the pollen of the abdomen brownish gray instead of silvery.

Named *tricellus* because of the three submarginal celis in the wings.

### ASILUS LINNAEUS

*Asilus* LINNAEUS, 1758, *Systema naturae*, ed. 10, p. 605.

GENOTYPE: *Asilus crabroniformis* Linnaeus (1758, *Systema naturae*, ed. 10, p. 605, Europe). By designation, Latreille, 1810.

### *Asilus gertschi*, new species

Total length, 14–16 mm. A small brownish species with spotted wings, related to *A. tenebrosus* Williston but much smaller, and brownish in color rather than gray.

MALE: Black, pale grayish brown pollinose, head with face yellowish white pollinose, beard white; mystax, antennal hairs, hairs of vertex, and occipital bristles black, palpal hairs black. A few yellow hairs in lower mystax. Mesonotum with black hairs and bristles, scutellars black. Legs reddish yellow, the femora black medianly below and anteriorly. Tips of tibiae and tarsal segments black. Halteres yellowish brown. Wings pale yellowish brown, with dark spots in the posterior area and the tips. Legs with black bristles and golden hairs. Abdomen grayish yellow pollinose, the bristles along the incisures golden yellow. Genitalia blackish, bases of forceps red. The sternite with both black and golden hairs. Forceps with mostly golden hairs.

FEMALE: Similar; ovipositor piceous.

TYPES: Holotype, male, El Volcan, Chiriqui, Republic of Panama, February 19, 1936 (W. J. Gertsch). Allotopotype, female, same data. Paratopotypes, five males, one female, same locality, February 18 to 21, 1936 (W. J. Gertsch).

Named in honor of the world-famous arachnologist, Dr. W. J. Gertsch.

***Asilus neriacensis*, new species**

Total length, 18–19 mm. A black species, yellowish brown pollinose, with abdominal pile yellowish.

MALE: Mystax, hairs of vertex, antennae, and occiput black. Palpal hairs black. Beard white. A few yellow bristles in lower mystax.

Pronotum with yellowish brown hairs. Hairs and bristles of mesonotum and scutellum black. Pollen of mesonotum yellowish brown, of scutellum, pleura, and coxae, gray. Pleural and coxal tufts yellowish. Legs black, with hairs yellowish brown and bristles black. Wings pale brown, tips darker. Halteres brown. Abdomen yellowish brown pollinose, with concolorous pile. Genitalia black, with black hairs.

FEMALE: Similar, ovipositor shining black.

TYPES: Holotype, male, Neriaco, Mexico, 10,500 feet, October 27, 1946 (W. G. Downs). Allotopotype, female, same data. Paratopotype, male, same data.

A species of the *Asilus fulviventr*is Schaeffer group, but larger, with black mystax, scutellum with black bristles instead of pile, and wings brownish instead of glassy hyaline.

Named from the type locality, Neriaco, Mexico.

**REGASILUS CURRAN**

*Regasilus* CURRAN, 1931, Amer. Mus. Novitates, no. 487, p. 24.

GENOTYPE: *Regasilus strigaria* Curran (1931, Amer. Mus. Novitates, no. 487, p. 24, Ecuador). By original designation, Curran, 1931.

This genus is related to the African *Neolophonotus* Engel in that the face is narrow and the bristles of the mystax form a dense, mane-like fan. The genus differs from *Asilus* Linnaeus in its usual concept by lacking hairs on the mesonotal slopes, above and slightly caudad to the halteres. The lateral portions of the abdominal tergites have coarser hairs than on the dorsum but not the decided bristles which occur in the subgenus *Machimus* of *Asilus*.

Curran described one species, the genotype *Regasilus strigaria* Curran, from Ecuador. Recently, a number of specimens

collected by Mr. Alton Blanton in Nevada were studied by the writer and considered to belong to this genus, which would make the first record for the United States. Curran had only males for study in the case of *strigaria*, but there are several females in the Nevada lot. In these, the ovipositor is quite similar to that of *Machimus*.

***Regasilus blantoni*, new species**

Total length, 18–21 mm. A black species, grayish white pollinose. The abdomen as seen from above indistinctly banded black and white.

MALE: Head black, densely white pollinose; mystax, beard, and a thick tuft of proclinate hairs of the vertex white; antennal bristles, occipitals, and a very few bristles in the lower part of the mystax black; palpal hairs white, with a few black. Thorax largely whitish pollinose, with the usual mesonotal markings indistinct. Mesonotum with fine white hairs in front and coarse black bristles posteriorly. The two lower bristles above the base of wings white. Pleura and pronotum with white hairs. Coxae with thick white hairs and bristles. Scutellum thickly set with long, upturned, thin white hairs. Legs black, the tibiae reddish, with black tips, the tarsal segments dark reddish, nearly black at the dorsal apices. Hairs of legs white, bristles mostly black, but some, particularly on middle femora, are white. Wings hyaline. Halteres pale yellowish. Abdomen grayish white pollinose, with concolorous hairs, except the basal half of tergites 1 to 5 where the color is black, with blackish hairs. The seventh sternite is decidedly enlarged and produced downward and caudad. The genitalia are almost the width of the seventh segment, blackish, with white hairs (fig. 6).

TYPES: Holotype, male, Wills, Nevada, August 19, 1939 (S. W. Bromley collection). Allotype, female, same data (S. W. Bromley collection). Paratopotypes, three males, six females, same data. All collected by Mr. Alton Blanton and received through kindness of Mr. F. S. Blanton, Babylon, New York.

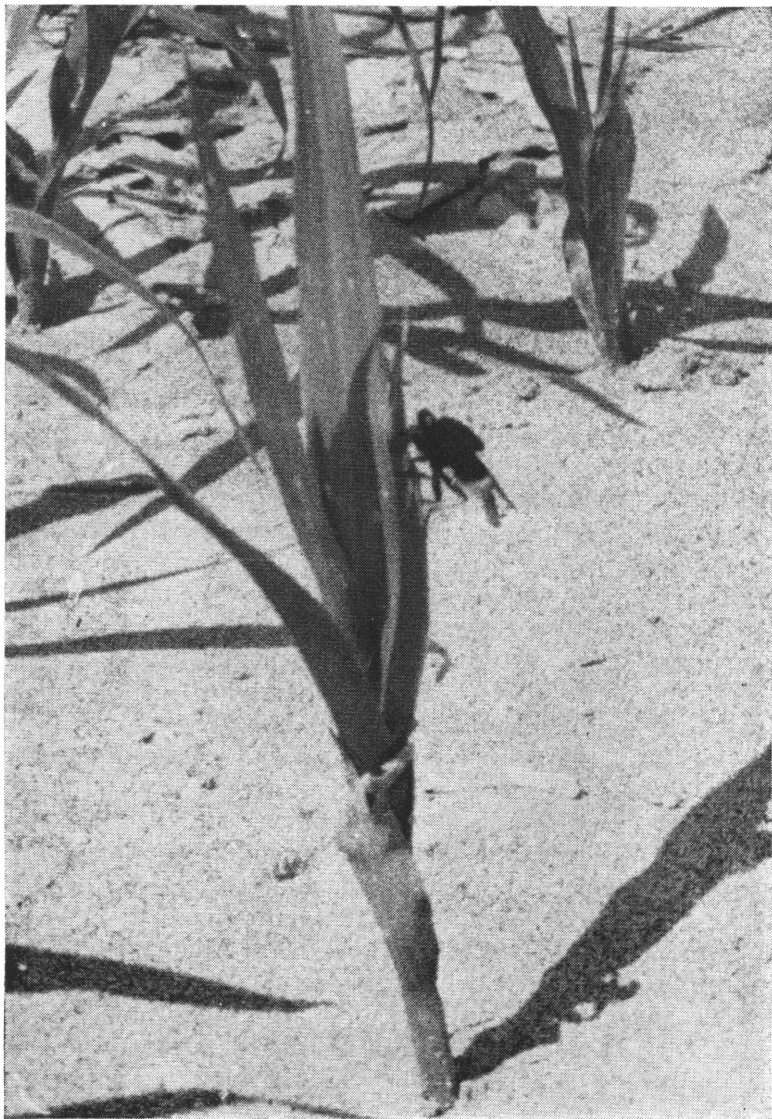


FIG. 8. *Eccritiosia zamon* Townsend, resting on plant in sandy area along Rio Papaloapan, Vera Cruz, Mexico. Photograph by Dr. Guenther Lassman, received from Dr. Wilbur G. Downs.