

Article VIII.—A REVISED LIST OF THE DIPTERA OF JAMAICA

BY CHARLES W. JOHNSON

PHORIDÆ BY CHARLES T. BRUES

In 1894 (Proc. Acad. Nat. Sci. Phila., pp. 271–281), the author published a list of the Diptera of Jamaica, based on a collection made by Mr. Wm. J. Fox and the writer at Kingston and Port Antonio in April and the early part of May 1891, together with those previously described from the Island. A supplement to this list was published by Prof. T. D. A. Cockerell in the same journal and volume, page 419. A number of scattered descriptions have since appeared at various times, but the only other paper bearing directly on the dipteran fauna of the Island was published by the Institute of Jamaica in 1905, The Mosquitoes or Culicidæ of Jamaica by Fred. B. Theobald, with descriptions of some of the various stages by M. Graham. In the present list the Culicidæ have been rearranged and corrected according to the classification in the Mosquitoes of North and Central America and the West Indies by Messrs. Howard, Dyar, and Knab.

The writer has had the privilege of studying the collections made by Mr. John A. Grossbeck, Dr. Joseph A. Cushman, Dr. Charles W. Metz, Mrs. George L. Chaney, and Prof. Charles T. Brues. Prof. Brues has kindly contributed the part on the family Phoridae. The writer is also indebted to Dr. A. L. Melander for assistance on the Empidæ and to Dr. A. H. Sturtevant on the Drosophilidæ. The list of 1894, which contained 115 species, has been corrected in the present list, which contains 322 species and varieties, 19 of which are new.

Our knowledge of the distribution of the tropical Diptera is still too inadequate to form any definite conclusion. The following figures, however, will give an approximate idea of their general distribution. The number recorded from Jamaica exclusively includes only those which are determined specifically.

Recorded only from Jamaica	83
Recorded also from the following localities:	
Cuba	70
Porto Rico	57
St. Vincent	37
United States	112
Mexico and Central America	74
South America	66

TIPULIDÆ

Geranomyia intermedia (Walker). "Jamaica," (Walker).

Rhipidia domestica Osten Sacken. Balaclava, (Cockerell), U. S. Nat. Mus.

Limnobia sp. Balaclava, (Cockerell), U. S. Nat. Mus.

Gonomyia slossonæ Alexander, 1914, Proc. Acad. Nat. Sci. Phila., XXVII, p. 588, Fig. 26. Kingston, April.

Gonomyia (Leiponeura) puer Alexander, 1913, Proc. U. S. Nat. Mus., XLIV, p. 506, Pl. LXVI, fig. 14. Kingston, April.

Sacandaga parva Alexander, 1913, Proc. U. S. Nat. Mus., XLIV, p. 508. Yallahs Valley, Blue Mts., Feb. 24, 1911, (Busck).

Limnophila nacreæ Alexander, 1913, Proc. U. S. Nat. Mus., XLIV, p. 544. Cinchona, Feb. 24, 1911, (Grossbeck), Amer. Mus. Nat. History.

PSYCHODIDÆ

Psychoda sp.? Jamaica, (Cockerell).

CHIRONOMIDÆ

Oecacta furens Poey. Jamaica, (Townsend).

CULICIDÆ

Wyeomyia mitchellii (Theobald). *Dendromyia mitchellii* Theobald, 1905, Mosquitoes of Jamaica, p. 37, Inst. Jamaica. Kingston, Jamaica, Feb. 11, (M. Grabham).

Wyeomyia grayii Theobald. Red Hills and Bath Botanic Garden, (M. Grabham).

Deinocerites cancer Theobald. Near Kingston, (M. Grabham). The larvæ live in "crab-holes."

Culex corniger Theobald. Kingston, (M. Grabham).

Culex annulipes (Theobald). *Melanoconium annulipes* Theobald, 1907, Mon. Culic., IV, p. 512. Red Hills, (M. Grabham).

Culex janitor Theobald. Kingston, in crab-holes along the seashore, (M. Grabham).

Culex secutor Theobald. Cinchona, 4900 ft.; Mavis Bank, 3500 ft.; Red Hills; Kingston; Newcastle, April 10, (M. Grabham). Abundant, especially after heavy autumnal rains.

Culex similis Theobald. Red Hills, Kingston, March, (M. Grabham).

Culex revocator Dyar and Knab. Hope Gardens and Newcastle, (M. Grabham).

Culex quinquefasciatus Say. *C. fatigans* Wiedemann. Theobald, 1905, Mosquitoes of Jamaica, p. 27. Jamaica, (Theobald).

Culex atratus Theobald. *Melanoconium atratus* Theobald, 1905, Mosquitoes of Jamaica, p. 28. In Jamaica it is found in abundance at the Ferry Swamp, (Theobald). Kingston, April, (M. Grabham).

Culex reductor Dyar and Knab. *Mochlostyrax jamaicensis* Grabham (not *Culex jamaicensis* Theobald), 1906, Can. Ent., XXXVIII, p. 318. Kingston, (M. Grabham).

Culex microsquamosus Grabham. In algæ-covered pools at the Rio Cobre, Canal Dam, near Spanish Town, Jan. 17, 1905, (M. Grabham).

Culex subfuscus Theobald. Monaque, Feb., (Lord Walsingham).

Masonia titillans (Walker). Kingston, Nov. 16, 1906, (M. Grabham).

Psorophora posticatus (Wiedemann). Kingston, (M. Grabham).

Psorophora johnstonii (Grabham). Red Hills, Molynes Road, Kingston, July 1905, (M. Grabham).

Psorophora jamaicensis (Theobald). Runaway Bay, (Lord Walsingham); Kingston, (Grabham).

Psorophora pygmæa (Theobald). *Grabhamia pygmæa* Theobald, 1905, Mosquitoes of Jamaica, p. 31. Kingston, Oct. 10, 1903, April 1906, (M. Grabham).

Psorophora haruspicus (Dyar and Knab). Port Antonio, bred from the larvæ in seaside pools, No. 15, 1906, (M. Grabham).

Aedes sollicitans (Walker). *Grabhamia sollicitans* (Walker) Theobald, 1905, Mosquitoes of Jamaica, p. 32. "Jamaica," (Theobald).

Aedes niger (Giles). *Culex tæniorhynchus* Theobald (in part) not Wiedeman. Jamaica, (M. Grabham).

Aedes scapularis (Rondani). *Culex confirmatus* Theobald, 1905, Mosquitoes of Jamaica, p. 25. Red Hills and Rockport near Kingston, (M. Grabham).

Aedes pertinax Grabham. Red Hills, Kingston, June-July, (M. Grabham).

Aedes tortilis (Theobald). *Culex tortilis* Theobald, 1905, Mosquitoes of Jamaica, p. 26. Kingston, July 10, 1906, (M. Grabham).

Aedes mediovittata (Coquillett). Waverly estate: Constant Spring and woods above Rockport, near Kingston, (M. Grabham). "Larvæ collected from hollow trees."

Aedes argenteus (Poiret). "Yellow fever Mosquito."
Culex argenteus Poiret, 1787, Journ. de Physique, XXX, p. 245.
Culex fasciatus Fabricius (*non* Müller), 1805, Syst. Antliat., p. 36.
Culex calopus Meigen, 1818, Syst. Besch., I, p. 3.
Stegomyia fasciata and *calopus* of authors. Kingston, July, (Cockerell), Hope Bay, May.

Aedes walkeri (Theobald). *Howardina walkeri* Theobald, 1905, Mosquitoes of Jamaica, p. 20. Mavis Bank, 5000 ft., (M. Grabham).

Aedes aureostriata (Grabham). Mavis Bank, April, 1906, (M. Grabham).

Aedes aurites (Theobald). Newcastle, July.

Hæmogogus equinus Theobald. Kingston, July 8, 1903, (M. Grabham).

Orthopodamyia waverleyi (Grabham). Waverley Estate, Sept. 1, 1903, (M. Grabham).

Uranotænia socialis Theobald. Rockfort, near Kingston, April 1906, (M. Grabham).

Uranotænia lowii Theobald. Kingston, (M. Grabham).

Anopheles albimanus Wiedemann. *Cellia albipes* Theobald, 1905, Mosquitoes of Jamaica, p. 15. Kingston, Nov. to March, (M. Grabham).

Anopheles vestitipennis Dyar and Knab. Spanish Town, Jan. 1910, (Dr. Neish).

Anopheles maculipes (Theobald). *Arribalzagia maculipes* Theobald, 1905, Mosquitoes of Jamaica, p. 13. Folly Point; Port Antonio; Morant Bay, (Theobald).

Anopheles grabhamii (Theobald). *Cyclolepteron grabhamii* Theobald, 1905, Mosquitoes of Jamaica, p. 17. Liguanea Plain, Kingston, March, April, and May, (M. Grabham); Montego Bay, March, (Grossbeck).

Anopheles crucians Wiedemann. Spanish Town, Jan. 1910, (Dr. Neish).

Anopheles punctipennis (Say). Port Antonio? Jamaica? Its occurrence in Jamaica is questioned, see Mosquitoes of North America, IV, p. 1014.

Anopheles argyrotarsis Theobald, 1905, Mosquitoes of Jamaica, p. 14. Rockfort near Kingston, Nov.-March bred by Dr. Grabham, (Theobald). Its occurrence in Jamaica is questioned by Mr. Knab.

MYCETOPHILIDÆ

Macrocera concinna Williston. Liguanea Plain, Kingston, Nov., (Brues).

Mycetophila pallida, new species

Head, antennæ, thorax, abdomen, and legs light yellow, the first and second abdominal segments and the extreme base of the posterior tibiæ, slightly brownish, scutellum with four long black bristles; the prominent bristles of the middle and posterior tibiæ black, posterior metatarsi as long as all of the following joints together; wings strongly tinged with yellow. Length, 3 mm.

Liguanea Plain, near Kingston, Dec., (Brues).

In the light yellow color of the body and wings it resembles *M. punctata* Say in miniature.

Leia sp. One specimen. Liguanea Plain, Kingston, Dec., (Brues).

Sciara delectata Williston. Cinchona, Feb. 29, (Grossbeck).

CECIDOMYIDÆ

Mycodiplosis coccidivora Felt, 1911, Journ. Econ. Ent., IV, p. 549. "Reared by Prof. T. D. A. Cockerell from the ovisac of *Pulvinaria urbicola* taken on *capsicum* at Kingston, Jamaica, W. I. and labeled *Diplosis coccidarum* Ckll. This is very different from what we take to be the true *Diplosis coccidarum* Ckll., a species reared from *Dactylopius coccidarum*" (Felt).

Catocha sp.? Port Antonio.

Asphondylia siccæ Felt. Infests fruit of *Phyllanthus distichus*, the Otaheite gooseberry, (Dr. M. Grabham).

SIMULIIDÆ

Simulium antillarum Jennings, 1915, Proc. Ent. Soc., Wash., XVII, p. 200. Hope River near Kingston and Roaring River close to the Falls, Sept. 1913, (A. H. Jennings).

BIBIONIDÆ

Dilophus orbatus (Say). Cinchona, Feb. 24, (Grossbeck).

The posterior cross-vein in this species is often obsolete or wanting.

Dilophus venulatus, new species

MALE.—Head dark brown, shining, proboscis dull brown, nearly as long as the head, palpi and antennæ black. Thorax including the pleura yellow, shining, with a broad black, shining, dorsal strip extending from the collar to and over the scutellum, a row of black spines on the collar and at the transverse suture. Abdomen yellow, with broad posterior bands of black on each segment; on the venter these are obsolete or wanting. Legs yellow, tip of the anterior femora, the three sets of spines on anterior tibiæ, tips of the middle femora and tibiæ, outer half of the posterior femora, tips of the posterior tibiæ, tips of the first three and all of the other joints of all the tarsi, black. The posterior femora clavate. Halteres black. Wings hyaline, veins and stigma dark brown. Length, 3 mm.

One specimen, Newton, 3000 ft., Jan. 1912, (Brues).

Plecia rufithorax Walker. "Jamaica," (Walker). This is probably the *P. collaris* Fabr.

RHYPHIDÆ

Rhyphus dolorosus Williston. Newton, 3000 ft., Jan., (Brues). Yallahs Valley, Blue Mts., Feb., 27, (Grossbeck). Resembles superficially both *R. fenestralis* Scop. and *R. alternatus* Say, but differs in the markings on the wings and in having the two basal joints of the antennæ yellow.

STRATIOMYIDÆ

Hermetia illucens (Linné). Port Antonio, April; Liguanea Plain, Kingston, (Brues).

Macrosargus alchidas (Walker). Port Antonio, April–May.

Macrosargus bagosas (Walker). "Jamaica," (Walker).

Microchrysa bruesi, new species

MALE.—Face and vertical triangle green, frontal triangle small, whitish, palpi and antennæ yellow, aristæ blackish. Thorax and scutellum a bright metallic green with a yellow line extending from the humeri to the base of the wings, postalar callosities reddish. Abdomen and halteres dark fulvous yellow. Legs light yellow. Wings hyaline, veins light brown, stigma yellow. Length, 3 mm.

FEMALE.—Front broad, metallic bluish green. Abdomen greenish yellowish at the base, venter yellow. Length, 2.5 mm. In other respects resembling the male.

Holotype, Liguanea Plain, Kingston, Nov.–Dec., (C. T. Brues). Allotype, Rockfort near Kingston, April, (C. W. Johnson). Paratype, British Guiana, Feb., received from Dr. A. S. Melander.

Cyphomyia marginata Loew? ?*Cyphomyia* n. sp., Williston, 1885, Can. Ent., XVII, p. 128, Jamaica.

I am referring Williston's "*Cyphomyia* n. sp." doubtfully to this species. It agrees in every respect with the description except that he

does not mention the white pile on the thorax and abdomen. Could the specimens have been denuded, or had they been in alcohol? I wrote to Prof. S. J. Hunter to see if any of the five specimens were in the Museum of the Kansas University but they were not. He kindly sent me, however, a specimen from San Domingo which Dr. Williston had also determined as *Cyphomyia* sp. and which is *C. marginata* Loew. It is the only species of the genus to my knowledge having a red scutellum.

Neorondania chalybea (Wiedemann). *Clitellaria anchialus* Walker, List, part 3, p. 522; var. of *Clitellaria chalybea* Wied. (?), Walker, List, part 4, p. 1157. "Jamaica," (Walker).

Nemotelus flavicornis Johnson. Kingston, April 1891. Type locality.

Oxycera liburna Walker. "Jamaica," (Walker).

Pachygaster pulcher Loew. Mandeville, (Cockerell), U. S. Nat. Mus.

Psephiocera Enderlein, 1914, Zool. Anz., XLIII, p. 300.

Psephiocera metzi, new species

Vertex and front shining black when viewed from above, a front view of the latter shows the sides widely margined with a silvery pollen, face silvery white, antennae yellow, the third joint short, round, with five annulations, the basal and terminal the larger, base of third joint brown, arista black, subterminal, and a little larger than all the antennal joints together. Thorax black, with three stripes of shining yellowish white tomentum, also a large patch of the same colored tomentum between the humerus and the base of the wing, at the base of the scutellum, and in a certain light a vertical stripe on the middle of the pleura. The edges of the acute scutellum are very finely serrated. Abdomen black with spots of whitish tomentum on the third and fourth segments and a central spot on the fifth, the middle spot on the third segment is faint and only seen in certain lights. Legs and halteres light yellow. Wings hyaline, third vein with an anterior branch. Length, 2.5 mm.

One specimen, Port Antonio, March 30, 1915, (Dr. C. W. Metz). Type in the author's collection.

To this genus belongs the *Cynipimorpha minuta* Williston, of Mexico, for which Malloch proposed the genus *Eucynipimorpha* (1915, Ann. Ent. Soc. Amer., VIII, p. 312). In *P. minuta* the entire thorax is covered with yellowish tomentum. The types of the genus *P. flavipes* Enderlein, from southern Brazil, also has the thorax covered with yellow tomentum, but black on the scutellum, the pleura is shining black, without tomentum.

REAGIONIDÆ (LEPTIDÆ)

Pheneus tibialis Walker. *Arthrostylum fascipennis* Williston, 1895, Kan. Univ. Quart., IV, p. 108. "Jamaica," (Walker).

Chrysopilus jamaicensis Johnson. Port Antonio, Aptil-May.

TABANIDÆ

Chrysops costatus (Fabricius). Port Antonio, April-May; Kingston, Sept. 11 and Nov. 18, (Townsend); Liguanea Plain, Dec., (Brues); Montego Bay, March 3-11, (Grossbeck).

Tabanus alene Townsend, 1895, Trans. Amer. Ent. Soc., XXII, p. 59. "Bath (Mrs. E. M. Swainson), one female. Type in collection" (Townsend).

Tabanus townsendi, new name

T. angustifrons Townsend, 1895, Trans. Amer. Ent. Soc., XXII, p. 59, *non* Macquart, 1847.

"Jamaica. Two females. One from Cinchona (5000 ft.) Aug. 1893, W. Fawcett. A small species" (Townsend).

Tabanus fliolus Williston. ? *T. rufiventris* Macquart, 1838, Dipt. Exot., I, part 1, p. 141, *non* Fabricius, 1805; *T. fliolus* Williston, Biologia, Dipt. 1, p. 261.

Macquart's species was recorded from Jamaica by Walker. The name being preoccupied, Williston gave the above name to a specimen from Yucatan. The synonymy is therefore doubtful. A specimen from Montego Bay, March 5, (Grossbeck), seems to agree with Macquart's brief description.

Tabanus lucidulus Walker. One specimen collected by Mrs. Geo. L. Chaney at Hollymont, near Ewerton. The brown wings with hyaline spots seem to distinguish readily this interesting species.

BOMBYLIIDÆ

Spogostylum œdipus (Fabricius). Kingston, April.

Spogostylum gideon (Fabricius). "a Var. ? abdomen all black. Jamaica." (Walker).

Hyperalonia hela (Erichson). *Anthrax hela* Erichson in Schomburgk's Reise in Brit. Guiana. *Exoprosopa albiventris* Macquart, 1848, Dipt. Exot. Suppl., III, p. 33, Tab. 3, fig. 8; *non* Macquart, 1838, *loc. cit.*, I, part 2, p. 39, Tab. 18, fig. 10; *non* Thompson, 1868. *Exoprosopa albiventris* Van der Wulp, Tijdsch v. Ent., XXIV, p. 164,

Tab. 15, fig. 11. The law of priority prevents the use of *H. albiventris* Van der Wulp as suggested by Osten Sacken and necessitates the adoption of *H. hela* Erichson. A specimen taken at Morant Bay, April 17, was inadvertently referred to *H. cerberus* in my previous list. I have also a specimen from the Caura Valley, Venezuela, collected by Mr. S. M. Klages.

Hyperalonia proserpina (Wiedemann). *Exoprosopa cerberus* Macquart, 1840, Dipt. Exot., II, part 1, p. 38, Pl. xvi, fig. 5, non Fabricius 1794. Kingston, April; Bath, (Mrs. Swainson).

Hyperalonia gargantua Knab, 1915, Insecutor Inscitiæ Menstruus, III, p. 49. St. Elizabeth, Santa Cruz, Mts., altitude 1500 ft., Oct. 14, 1899, (Taylor).

Exoprosopa parva Loew. Rockfort near Kingston, April.

Exoprosopa ignifera Walker. *Anthrax ignifera* Walker, 1849, List, II, p. 243. *Exoprosopa pueblensis* Jaenicke, 1867, Neue Exot. Dipt., Abhdl. d. Senckenb. Ges., VI, p. 342, Pl. XLIV, fig. 21. *Exoprosopa eremita* Osten Sacken, 1877, Western Dipt., 236. "Jamaica," Walker.

There seems to be no doubt regarding the above synonymy. Florida and Colorado specimens both agree with Walker's description.

Exoprosopa subfascia (Walker). "Jamaica," (Walker).

Villa bigradata (Loew). *Anthrax bigradata* Loew. Rockfort near Kingston, April.

Villa delicatula (Walker). *Anthrax delicatula* Walker. "Jamaica," (Walker).

Villa lateralis (Say). *Anthrax lateralis* Say. Rockfort near Kingston, April.

Villa lucifer (Fabricius). *Anthrax lucifer* Fabricius. Common, Rockfort near Kingston, April; Liguanea Plain, Nov.-Dec., (Brues); Montego Bay, March 2 and 15, (Grossbeck).

Villa trimaculata (Walker). *Anthrax trimaculata* Walker. Kingston and Port Antonio, April-May; Annotta Bay, May; Liguanea Plain, Nov.-Dec., (Brues).

Bombylius plumipes Drury. "Jamaica," (Drury).

Geron senilis (Fabricius). Kingston, April; Montego Bay, March 4.

Geron rufipes Macquart. Liguanea Plain, Kingston, Nov.-Dec., (Brues).

THEREVIDÆ

Psilocephala obscura Coquillett. Kingston, April.

ASILIDÆ

Leptogaster clavipes Johnson, 1897, Ent. News, VIII, p. 120.
L. longipes Johnson, 1894, Proc. Acad. Nat. Sci., Phila., p. 273, non Walker, 1859. Port Antonio, April.

Leptogaster pictipes Loew. Liguanea Plain, Kingston, Nov.-Dec., (Brues).

Plesiomma indecora Loew. Kingston, April; Morant Bay, May 17.

Cerotainia macrocera Say **jamaicensis**, new variety

The difference between this and the typical form was briefly referred to in my previous paper. While additional material proves *C. macrocera* to be extremely variable in size and venation, there remain a few characters which seem to separate the island form. The entire insect is a dark steel-blue, not black, the long hairs of the face are dark brown or black and the yellow tomentum of the thorax more dense. The veins forming the second posterior cell are practically parallel, in only one of the five specimens is there a marked convergence near the margin. On the other hand, four out of eleven specimens of *C. macrocera*, from various parts of the United States, have the second posterior cell closed in one or both wings, one has an adventitious vein near the anterior cross-vein and another a cross-vein in the submarginal cell. The vein dividing the third and fourth posterior cells, often prominent in the typical *macrocera*, is wanting or only indicated by a slight stub.

Port Antonio, April and May. Holotype, allotype, and one paratype in the author's collection; two paratypes in The Amer. Museum of Nat. History.

Ommatius saccas Walker. Port Antonio, April and May. This seems to be a good species readily distinguished from *O. marginellus* Fabricius by the male having a simple, not thickened costa.

Erax haloesus Walker. Bath, (Mrs. E. M. Swainson). This species seems to be distinct from *E. rufitibia* Macquart.

Erax stylatus Fabricius. *Erax invarius* Walker. "Jamaica," (Walker).

DOLICHOPODIDÆ

Psilopus chrysoprasius Walker. Common Port Antonio, April-May; Liguanea Plain near Kingston, Nov.-Dec., (Brues).

Psilopus caudatus Wiedemann. Hope Gardens, Feb. 22; Montego Bay, March 2.

Psilopus jucundus Loew. Port Antonio, April–May; Liguanea Plain near Kingston, Nov.–Dec., (Brues).

Psilopus suavius Walker. "Jamaica," (Walker).

Psilopus flavicornis (Aldrich). Port Antonio, Feb. 21; Montego Bay, March 13, 1911.

Chrysotus barbatus (Loew). Montego Bay, March 6, (Cushman).

Chrysotus picticornis Loew. Montego Bay, March 6, (Cushman).

Chrysotus sp. Kingston, April.

Plagioneurus univittatus Loew. Hope Gardens, Feb. 22, 1911, (Grossbeck). Amer. Mus. Nat. History.

Paraclius arcuatus Loew. "Jamaica," (Aldrich).

EMPIDIDÆ

Drapetis flavicornis Melander. *D. flavicornis* Melander, 1918, Ann. Entom. Soc. Amer., XI, p. 193. "Jamaica," (Melander).

Elaphropeza bacis (Walker). *Platypalpus bacis* Walker, 1849, List Dipt. Ins., III, p. 510. "Jamaica," (Walker).

Elaphropeza flavida (Williston). *Drapetis flavida* Williston, 1896, Trans. Ent. Soc., London, III, p. 308, Pl. II, fig. 86. Hope Garden, Feb. 22; Catadupa, March 9, 1911.

Elaphropeza simplicipes Melander, 1918, Ann. Ent. Soc. Amer., XI, p. 212. Montego Bay, March 6, (J. A. Cushman); Balaclava.

Elaphropeza upsilon Melander, 1918, Ann. Ent. Soc. Amer., XI, p. 214. Jamaica, (Brues).

Hybos electus Melander. Montego Bay, Feb. 25, (Cushman); Liguanea Plain, Nov.–Dec., (Brues).

Lampremis viridis (Coquillett). *Hilara viridis* Coquillett, Revis. Empid., p. 395. Kingston.

PHORIDÆ

BY CHARLES T. BRUES

Paraspiniphora scutellata Brues **jamaicensis**, new subspecies

FEMALE.—So similar to *P. scutellata* Brues¹ in habitus, color, and in most structural details, that it cannot be recognized as a distinct species. It differs in having the lateral scutellar bristles very much reduced in size, and in having only two serial

¹Trans. Amer. Ent. Soc., XXIX, p. 344.

bristles on the hind edge of the hind tibiæ in addition to the pair at the basal third, one of these at the middle and the other at the apical third. The pleuræ and legs are fusco-piceous and the antennæ and palpi clear honey-yellow. Otherwise similar to the typical form even to the white spot on the scutellum.

MALE.—Front barely higher than wide, narrowed, below, lowest pair of bristles very close together; lowest row of four slightly curved, the median pair farther from each other than from the adjacent lateral one; upper row slightly curved, its bristles equidistant, the lateral ones next to the eye. Propleura hairy, with two large bristles near the spiracle and a bunch of four or five next the coxa, mesopleura hairy above, with a bristle near the upper posterior angle. Sixth abdominal segment, but not the second, elongated.

Type from the Liguanea Plain, near Kingston, Jamaica, Nov.-Dec. 1911, (Brues).

This species has been placed in *Paraspiniphora* by Malloch, although it approaches *Dohnniphora* in the chætotaxy of the middle tibia, except that the subapical bristle is strong and perhaps a little farther from the apex than in typical *Dohnniphora*.

Dohnniphora dispar Enderlein. Balaclava, Jamaica, (R. Thaxter). The species was lately described by Enderlein¹ from Santa Catalina, Brazil. The antennæ of the Jamaican male are somewhat smaller than is indicated in Enderlein's description; otherwise it agrees very well.

Aphiochæta spinifemorata Malloch. Proc. U. S. Nat. Mus. XLIII, p. 465 (1912). Type locality Mandrilla, Jamaica, (T. D. A. Cockerell). This may be the *Phora scalaris* Loew recorded by Cockerell² from Mandeville, Jamaica. Cockerell indicated that the specimen was in the U. S. National Museum and I know of no town in Jamaica by the name of Mandrilla which is likely a mistake for Mandeville.

Aphiochæta scalaris (Loew). Liguanea Plain, near Kingston, Jamaica, Nov.-Dec. 1911, (Brues).

Paraphiochæta picta Lehmann, *fasciiventris*, new variety

Differs from the typical form only in having the abdomen entirely black above, with each segment narrowly margined with pale yellow at apex and in being generally darker, the front black except below, and the dorsum of the thorax except on the margins. The front is also distinctly, though not noticeably higher than wide. The wings show no yellowish tinge, and the venation is very dark; halteres considerably infuscated.

Type from Liguanea Plain, near Kingston, Jamaica, Nov.-Dec. 1911, (Brues).

Although quite different in color from the typical *picta*, this form is structurally almost identical.

¹1912, Stettiner Ent. Zeitg., p. 20.

²1894, Proc. Nat. Sci. Philadelphia, p. 420.

Chonocephalus jamaicensis Brues, Psyche, XXII, p. 102 (1915).
Type locality Williamstown, Jamaica, (R. Thaxter).

PIPUNCULIDÆ

Pipunculus albiseta Cresson. Montego Bay, March 15, (Grossbeck).

Pipunculus insularis Cresson. Liguanea Plain, Kingston, Nov.-Dec., (Brues).

Pipunculus cressoni, new species

Face and occiput covered with silvery white pollen, antennæ yellow, third joint moderately acuminate, tip white, arista black, base yellow. Thorax black, brownish pollinose, lateral stripe and pleura whitish pollinose, scutellum and metanotum black. Abdomen brown, fifth segment black (in one specimen the fourth segment is also somewhat blackish), genitalia and the entire venter yellow. Legs and halteres entirely yellow. Wings hyaline, with a slight brownish tinge, stigma very small, venation normal. Length, 3 mm

Holotype, Montego Bay, March 6, collected by Dr. J. A. Cushman.

Paratype, Liguanea Plain, near Kingston, Nov.-Dec. 1911, collected by Prof. C. T. Brues. Types in the author's collection. Dedicated to Mr. E. T. Cresson, Jr. who has done so much to further our knowledge of the Pipunculidæ

Pipunculus jamaicensis, new species

Front, face and occiput whitish pollinose, antennæ brown, tip of the third joint whitish, aristæ black. Thorax and scutellum black, brownish pollinose, pleura and metanotum grayish. Abdomen black, the base of all the segments opaque with broad, grayish, subshining, posterior margins of the first segment with white pollinose triangles narrowly separated dorsally. Legs yellow, all of the femora broadly banded with black. Halteres yellow. Wings brownish hyaline, ultimate section of the fourth vein with a short appendage. Length, 4 mm.

One specimen Liguanea Plain, near Kingston, Dec. 1911, collected by Prof. C. T. Brues. Type in author's collection.

SYRPHIDÆ

Microdon violens Townsend. *M. violens* Townsend, 1895, Trans. Amer. Ent. Soc., XXII, p. 34. "Jamaica," (Bowrey).

Chrysotoxum nigratum (Fabricius). "Jamaica," (Fabricius).

Lepidostola calopus (Loew). *Lepidomyia calopus* Loew, 1864, Cent., V, p. 38. *Lepromyia calopus* Williston, 1886, Synop. N. A. Syrphidæ, p. 31. One specimen, Port Antonio, April. Although *Lepromyia* was published the same year—1886, Williston acknowledges the priority of *Lepidostola* Mik.

Baccha clavata (Fabricius). Rockfort near Kingston, April; Bath, (E. M. Swainson); Constant Spring, Dec. 6, C. B. Taylor's collection (Townsend); Liguanea Plain, Nov.-Dec., (Brues); Montego Bay, March, (Cushman).

Baccha sagittifera Austen. Cinchona, 5000 ft., June, (Austen).

Ocyptamus antiphates (Walker). *Syrphus antiphates* Walker, 1849, List. Dipt. Brit. Mus., III, p. 589. "Jamaica," (Walker).

Ocyptamus dimidiatus (Fabricius). Kingston, March 18, in coll. C. B. Taylor, (Townsend).

Ocyptamus fuscipennis (Say). Jamaica, (Bowrey).

Ocyptamus fuscipennis, var. **fuscipennis** Macquart. Kingston, April 12, coll. C. B. Taylor, (Townsend).

Ocyptamus iris Austen. Cinchona, 5000 ft., June, (Austen).

Ocyptamus latiuscula Loew. Kingston, April; Liguanea Plain, Dec. and Newton, 5000 ft., Jan., (Brues).

Syrphus ribesii (Linné). Cinchona, 5000 ft., Jan., (Brues).

Allograpta obliqua (Say). Newton, 3000 ft., Jan., (Brues).

Allograpta obliqua var. **securifera** (Macquart). One specimen Cinchona, 5000 ft., Jan., (Brues). This differs from the typical form in having the yellow subdorsal lines and lateral spots on the fourth and fifth segments connected, thus forming hatchet-shaped markings. The black dorsal line on these segments is also much wider. It may be proved to be a good species but more material is necessary.

Toxomerus arcifera (Loew). *Mesograpta arcifera* Loew, of the previous list. Common at Port Antonio and Kingston, April; Liguanea Plain, Nov. and Dec., (Brues); Montego Bay, March 6, (Cushman).

Toxomerus pictus (Macquart). *Mesogramma pæcilogaster* Loew, 1865, Cent., VI, p. 51. Liguanea Plain, Nov.-Dec., (Brues); Montego Bay, March, (Cushman).

Toxomerus duplicatus (Wiedemann). Kingston, April.

Toxomerus subannulatus (Loew). Kingston and Port Antonio, April-May; Liguanea Plain, Nov.-Dec. and Newton, 3000 ft., Jan., (Brues); Montego Bay, March 6, (Cushman).

Toxomerus laciniosus (Loew). Liguanea Plain, Kingston, Nov.-Dec., (Brues).

Toxomerus sp. One specimen, Montego Bay, March, (Cushman).

Volucella abdominalis Wiedemann. *V. spiniger* Cockerell (*non*

Wiedemann), Journ. Inst. Jamaica, I, p. 259, British Museum. "Though the specimens seem to have been determined at the British Museum, still I am confident that they are *abdominalis* Wied. and not *spinigera* Wied." (Townsend, 1895, Trans. Amer. Ent. Soc., XXII, p. 39).

Volucella eugenia Williston. *V. purpurascens* Johnson, 1894, Proc. Acad. Nat. Sci. Phila., p. 276, (*non* Loew). Kingston, April; Newton, 3000 ft., Jan., (Brues).

Volucella haagii Jaenick. "Jamaica," (Bowrey). Kingston, March 10, C. B. Taylor's Coll., (Townsend).

Volucella obesa (Fabricius). Common Port Antonio, April-May; Kingston, (Townsend); Liguanea Plain, Dec., (Brues).

Volucella pallens Wiedemann. *V. sexpunctata* Loew, 1861, Wien. Ent. Monatsch., V, p. 38. Port Antonio, April; Bath, (Townsend); Liguanea Plain, Dec. and Newton, 3000 ft., Jan., (Brues).

Volucella picta Wiedemann. Liguanea Plain, Dec., (Brues).

Volucella vacua (Fabricius). "Jamaica," (Bowrey); Kingston, C. B. Taylor's Coll., (Townsend).

Eristalis albifrons Wiedemann. Common Port Antonio, April-May.

Eristalis atrimanus Loew. Port Antonio, April; Bath, (Townsend).

Eristalis cubensis Macquart. Port Antonio, April.

Eristalis vinetorum Fabricius. (*E. warum* Walker). Common, Port Antonio, April-May; Bath, (Swainson).

Eristalis lateralis Walker. "Jamaica," (Walker).

Meromacrus cinctus (Drury). *Eristalis pinguis* Fabr., 1805, Syst. Antl., p. 233. *Milesia ania* Walker, 1849, List Dipt. Brit. Mus., III, p. 564. *Pteroptila cincta* Johnson, 1894, Proc. Acad. Nat. Sci., Phila., p. 277. Common, Port Antonio, April-May; Bath, (Swainson); Cinchona, 5000 ft., Jan., (Mrs. C. T. Brues).

Ceriodes daphnæa (Walker). *Ceria daphnæa* Walker, 1847, List Dipt. Brit. Mus., III, p. 537. Rock Fort, near Kingston, April, Port Antonio, April-May. In motion this fly closely resembles a wasp (*Polybia* sp.).

CESTRIDÆ

Gastrophilus intestinalis (DeGeer). *Gastrophilus equi* (Clark). The Horse Botfly. Cinchona, 5000 ft., (W. Harris); two females, August, (Townsend).

Gastrophilus pecorum (Fabricius). "Jamaica," (Walker).

TACHINIDÆ

Gymnoclytia immaculata (Macquart). Liguanea Plain, Dec., (Brues).

Trichopoda pennipes (Fabricius). Cinchona, 5000 ft., Jan., (Brues).

Anisia vanderwulpi Townsend. Port Antonio, April 1891.

Hypostena floridensis (Townsend). Kingston, April 1891.

Hypostena sp. Montego Bay, March 2, 1911, (Grossbeck).

Leskia aurifrons (Macquart). Kingston; Port Antonio, April 1891; Hollymont near Ewerton, (Mrs. Geo. L. Chaney).

Leskiomima tenera (Wiedemann). Hollymont near Ewerton, (Mrs. Geo. L. Chaney).

Leucostoma senilis (Townsend). Liguanea Plain, Dec., (Brues).

Cestrophasia punctata (Coquillett). Liguanea Plain, Dec., (Brues).

Senotainia rubriventris Macquart. Kingston, April 1891.

Senotainia trilineata (Van der Wulp). Newton, 3000 ft., Jan., (Brues).

Plagia parva, new species

FEMALE.—Face and front whitish pollinose, frontal stripe dark brown, about one-third the width of the front near the base of the antennæ becoming slightly narrower toward the ocelli, with about six frontal and three fronto-orbital bristles, vertical and ocellar bristles prominent, antennæ black, reaching the oral margin, the third joint about double the length of the first and second together, palpi yellow. Thorax grayish pollinose, with four narrow black stripes, the post-alar and scutellar bristles very large. Abdomen grayish pollinose, the segments margined posteriorly with black. Legs black. Wings hyaline, the costa, first, and third vein as far as the cross-vein bristly. Squamæ white. Length, 5 mm.

Two specimens, Liguanea Plain, near Kingston, Dec. 1911 (Brues).

Belvosia bicincta (Desvoidy). Kingston, (Cockerell).

Belvosia ferruginosa Townsend. Bath, (E. M. Swainson). Bred from a lepidopterous chrysalis; one male, (Townsend).

Belvosia unifasciata (Desvoidy). Port Antonio, April 1891.

Ocyptera carolinæ (Desvoidy). *O. dotades* Walker, 1849, List Dipt. Brit. Mus., IV, p. 694. Port Antonio, April 1891.

Carcelia lagosæ (Townsend). *Exorista lagosæ* Townsend, 1891, Ent. News, II, p. 159. Mandeville. Bred from a red *Halesidota*, (E. S. Panton).

Sturmia distincta (Wiedemann). *Masicera protoparcis* Townsend, Journ. Inst. Jamaica, I, p. 70. Bred from *Protoparce jamaicensis*.

Sturmia fraudulenta (Van der Wulp). Kingston, April; Hollymont near Ewerton, (Mrs. Geo. L. Chaney).

Sturmia (?) **subvaria** (Walker). *Tachina subvaria* Walker, 1856, Dipt. Saund., p. 299. Kingston and Port Antonio, April 1891. Determined by Coquillett.

Tachina (?) **hirta** (Drury). "Jamaica."

Blepharipeza jurinoides Townsend. Cinchona, 5000 ft., (W. Faucett).

Blepharipeza nigrisquamis Townsend. Bath, (Mrs. Swainson); Port Antonio, April 1891.

Blepharipeza (?) **breviventris** (Wiedemann). *Tachina brevi-ventris* Wiedemann, 1828, Auss. Zw. II, p. 297. Jamaica, (Walker).

Winthemia quadripustulata (Fabricius). Kingston and Port Antonio, April 1891; Newton, 3000 ft., Jan., (Brues).

Metopia leucocephala (Rossi). ? *Ophelia xychus* Walker, 1849, List Dipt. Brit. Mus., IV, p. 770. Jamaica, (Walker).

Gonia pallens Wiedemann. *G. angusta* Walker, 1849, List Dipt. Brit. Mus., IV, p. 798. Common, Port Antonio, April-May 1891. Liguanea Plain, Nov.-Dec., (Brues).

Gonia crassicornis (Fabricius). Rock Fort, near Kingston.

• **Trichophora macrocera** (Wiedemann). *Elachipalpus macrocera* Wiedemann of the previous list. Port Antonio, April 1891; Liguanea Plain, Nov., (Brues).

Hystrieciella aurifrons Townsend. "Jamaica," (Townsend), 1915, Insecutor Inscitiæ Menstruus, III, p. 95.

Hystriicia epileuca (Walker). *Jurinia epileuca* Walker of the previous list. "Jamaica," (Walker).

Archytas basifulva (Walker). *Echinomyia basifulva* Walker, List Dipt. Brit. Mus., IV, p. 725. *Jurinia amethystina* Johnson (*non* Macquart), 1894, Proc. Acad. Nat. Sci. Phila., p. 277.

This species is closely related to *A. analis* Fabricius of which *A. amethystina* Macquart is a synonym. It can be readily separated however by the much darker scutellum and terminal abdominal segment and the grayish not yellowish pollinose thorax. Port Antonio, April; Cinchona, 5000 ft., and Newton, 3000 ft., Jan., (Brues).

Archytas piliventris (Van der Wulp). Port Antonio and Kingston, April; Liguanea Plain, Nov., (Brues).

Pseudohystricia exilis Townsend. Cinchona, (Cockerell); Bath, (Mrs. Swainson); Newton, 3000 ft., Jan., (Brues); Hollymont near Ewerton, (Mrs. Chaney).

DEXIIDÆ

Prosenoides flavipes Coquillett. Montego Bay, March 6, (Cushman).

Rhynchodexia rufianalis Van der Wulp. Port Antonio and Kingston, April 1891.

Leptoda thomæ (Wiedemann). *Dexia thomæ* Wiedemann, Auss. Zw., II, p. 379. Jamaica, (Walker).

Thelairodes cinereicollis Van der Wulp. Yallahs Valley, Blue Mts., Feb. 27, (Grossbeck).

Chætona sp. Kingston, April. One female. A small species resembling *C. nitens* Coq.

Stenodexia foxii, new species

MALE.—Front with a broad, blackish frontal stripe, frontal orbits and the entire face yellow, antennæ black, aristæ conspicuously pubescent, proboscis black, palpi small, yellow. Thorax black, two subdorsal lines, a short line above the base of the wing, and pleura grayish pollinose. Scutellum black, apex gray, four large marginal bristles. Abdomen black, a spot on each side of the second and a broad band at the base of the third to fifth segments grayish pollinose, third segment with four, and the fourth and fifth each with six marginal macrochaetæ. Legs dark brown, tarsi blackish. Wings light brown, the small cross-vein at the middle of the discal cell. Opening of the first posterior cell narrow, squamæ white, halteres yellow. Length, 4 mm.

FEMALE.—Similar to the male.

Two specimens, Port Antonio, April 1891.

Allied to *S. albocincta* Van der Wulp, but the smaller size, prominent thoracic stripes, and three light bands on the abdomen readily separate this species. It is dedicated to Mr. William J. Fox, my companion on the collecting trip when these specimens were taken.

SARCOPHAGIDÆ

Phrissopodia sp. Bath; bred from a snail, Townsend, Journ. Inst. Jamaica, I, p. 315.

Sarothromyia femoralis (Schiner). Kingston, April 1891; Port Royal, Feb. 23, 1911, (Amer. Mus. Nat. Hist.).

Sarcophagula occidua (Fabricius). *S. imbecilla* Van der Wulp, 1896, Biol. Cent. Amer., II, p. 289, Pl. VII, fig. 2. Kingston and Port Antonio, April 1891; Liguanea Plain, Nov.-Dec., (Brues); Port Royal, Feb. 23, (Amer. Mus. Nat. Hist.).

Sarcophilodes sp. Moneague, (Townsend).

Sarcophaga parkeri Aldrich. "Jamaica," (Klages).

Sarcophaga (Ravinia) quadrisetosa Coquillett. Liguanea Plain, Kingston, "Nov.-Dec." (Brues).

Sarcophaga helcis Townsend. *Helicobia helcis* Coq., 1895, Proc. Acad. Nat. Sci. Phila., p. 307. Kingston, April 1891; Hollymont near Ewerton, (Mrs. Chaney); Liguanea Plain, Nov.-Dec., (Brues).

Sarcophaga peltata Aldrich. ? *Sarcophaga incesta* Walker, 1852, Dipt. Saund., p. 324. An unrecognizable species, (Aldrich). Port Antonio and Kingston, April 1891; Hollymont near Ewerton, (Mrs. Chaney); Liguanea Plain, Nov.-Dec., (Brues).

Sarcophaga sternodontis (Townsend). *Sarcodexia sternodontis* Townsend, 1892, Journ. Inst. Jamaica, I, p. 105. Bred from a cerambycid beetle (*Sternodontes damicornis*), also from a scorpion (*Centrurus edwardsii*). Montego Bay, March 6, (Cushman); Hollymont near Ewerton, (Mrs. Chaney).

Sarcophaga fimbriata Aldrich. Port Antonio, Portland, April 1891.

Sarcophaga plinthopyga Wiedemann. Port Antonio and Kingston, April 1891; Hollymont near Ewerton, (Mrs. Chaney); Cinchona, 5000 ft., Jan., (Brues).

MUSCIDÆ

Callitroga macellaria (Fabricius). "Screw-worm fly." *Compsomyia macellaria* Fabricius. Johnson, 1894, Proc. Acad. Nat. Sci., Phila., p. 279. *Chrysomyia macellaria* Aldrich, 1905, Catalogue, p. 517. Common, Kingston, April. Townsend has proposed the generic name *Cochliomyia* for this species, but Brauer and Bergenstamm had a perfect right to adopt *Callitroga* Schiner, MS.

Callitroga (?) turbida (Walker). *Musca turbida* Walker, 1856, Dipt. Saund., p. 336, "Jamaica," (Walker). Probably a synonym of *C. macellaria* Fabricius.

Calliphora punctata (Desvoidy). *Ormia punctata* Desvoidy, 1830, Myodaires, p. 428. "Jamaica," (Macquart).

Pyrellia scapulata Bigot. Common, Kingston and Port Antonio, April-May. The *Lucilia* sp. of my previous list. Liguanea Plain, Nov.-Dec., (Brues).

Morellia basalis (Walker). "Jamaica," (Walker). According to Dr. Hough this is probably a synonym of *M. ochryfacies* Rond.

Morellia violacea (Fabricius). Kingston and Port Antonio, April-May.

Musca domestica Linné. The Housefly. Kingston, April. A small form with the basal segments of the abdomen yellowish was described by Macquart as *M. basalaris*.

Stomoxys calcitrans (Linné). The "Biting Housefly." Liguanea Plain, Nov.-Dec., (Brues); Montego Bay, March 6, (Grossbeck).

Hæmatobia irritans (Linné). The "Hornfly." *H. serrata* Desvoidy, 1830, Myodaires, p. 398. Montego Bay, March 5, (Grossbeck).

Clinopera scutellata, new species

Front very narrow, stripe black, orbits silvery white, with an even row of bristles from the base of the antennæ of the vertex; face dull yellow, whitish pollinose; antennæ and palpi bright yellow; proboscis and inferior orbits black, the latter whitish pollinose. Thorax black, shining, with five white pollinose stripes, the dorsal and lateral stripes becoming obsolete behind the suture; one post-acrostical and four dorso-central bristles. Scutellum black, the apical third bright yellow, with two large apical bristles. Abdomen black, shining, and in a certain light tessellated with a whitish bloom. Legs black, tips of the femora yellow. Wings a light brownish hyaline; antisquama and squama white, the margin of the latter brownish; halteres light yellow. Length, 4.5 mm.

One specimen, Liguanea Plain near Kingston, Nov. 1911, (Brues).

ANTHOMYIDÆ

Ophyra ænescens (Wiedemann). Newton, 3000 ft., Jan., (Brues).

Fannia trimaculata (Stein). Kingston, April, Port Antonio, April.

Mydæa spermophilæ Townsend. Kingston. "One specimen bred Nov. 22, from a young *Spermophila*, probably *S. bicolor* L. Similar

larvæ have been noticed at Cinchona (5000 ft.) in nestlings. They have also been noticed in nightingale, *Mimus orpheus*, nestlings at Duncans, "Jamaica," (Townsend). Newton, 3000 ft., Jan., (Brues).

Spilogaster discreta Van der Wulp. Liguanea Plains, near Kingston, Dec., (Brues). A single female agrees well with the description.

Aricia sp.? Cinchona, Feb. 26, 1911, (Grossbeck). A single female resembling somewhat *A. lucorum* Fall.

Calythea albicincta (Fallen). *Anthomyia albicincta* Fallen of authors. Kingston and Port Antonio, April; Montego Bay, March 3, (Cushman).

Leucomelina pica Macquart. One specimen, Newton, 3000 ft., Jan. 1912, (Brues).

Leucomelina exul (Williston). *Limnophora (Spilogaster?) exul* Williston, 1896, Trans. Ent. Soc. London, part 3, p. 370, Pl. XII, figs. 122, 122a. Kingston and Port Antonio, Apr.; Montego Bay, March 6, (Grossbeck).

There are a number of species found throughout the greater portion of the United States, Mexico, and the West Indies, that clearly resemble each other and, from the various scattered descriptions, it is very difficult to separate them or to tell which one the author really had before him. Their generic position is also a matter of some doubt or discussion, owing to the fact that there are probably more than one species referable to *Leucomelina pica*, the type of the genus. Although Macquart's descriptions and figures are poor, there seems to be little doubt that he had one of the species of this group before him and, since his type is a species of tropical America, I will use this until we have a better knowledge of the number of species and their distribution. I am, therefore, inclined to follow Van der Wulp who reviewed the species in the *Biologia Centrale-Americana*, II, p. 326, 1896.

All of the four species at hand have the third and fourth veins converging, with bristles at the base of the third vein. The species with the prothoracic stripes wanting I am referring to *L. pica*. The other three more closely resemble each other, but seem to be readily separated by the width of the front in the males, the females are more difficult to distinguish.

The specimens from the United States and Mexico agree with *L. narona* Walker, (*L. cyrtoneura* Stein). *L. garrula* Giglio-Tos also seems

to be synonymous from the descriptions, and the figure given by Van der Wulp (Biol. Cent. Amer., Tab. 8, fig. 9.), although Stein separates it on the shorter pubescence of the aristæ (1904, Ann. Mus. Nat. Hung., II, p. 472). The specimens from Jamaica and Cuba represent two species; one is evidently *L. exul* Williston, to which the following cephalic characters as well as the thoracic markings apply. "Eyes narrowly separated below the ocelli; median black stripe of the front expanded triangularly below; orbital margins silvery pollinose." Among the specimens from Havana, Cuba, however, is another species with the front very narrow as in *L. narona* but without the black stripe, the silvery white orbits are united leaving only a small black triangle above the base of the antennæ. The gray and black stripes of the thorax are of almost equal width, the lateral gray stripes slightly interrupted above the base of the wings. It resembles the figure of *Brachyophyra effrons* Giglio-Tos. (Ditt. del Mess., IV, p. 26, fig. 6), but the wider front, plumose aristæ, venation, and the marking on the fourth abdominal segment, readily separate it from that species. This species was received from Prof. Chas. F. Baker when at the Estacion Central Agronomica, the Santiago de la Vegas, near Havana. I apply provisionally the name of *L. cubana* to this species pending the completion of a paper on the Diptera of Cuba.

Caricea antica (Walker). *C. insignis* Stein, 1897, Berliner Ent. Zeitschr., XLII, p. 257. Kingston and Port Antonio, April; Montego Bay, Feb. 28, (Cushman); March 6, (Grossbeck).

Cœnosia flavipes Williston. Yallahs Valley, Blue Mts., Feb. 27; Cinchona, Feb. 25, (Grossbeck). Liguanea Plain, Kingston, Nov., (Brues).

Cœnosia tenuicornis Van der Wulp. Cinchona, Feb. 25, Yallahs Valley, Blue Mts., Feb. 27.

This species was based on a single female. Two males agree closely with the description, except that the second segment of the abdomen lacks a dorsal spot, the black being confined to the posterior margin. Two females taken at the same time and place (Cinchona) have the palpi and antennæ blackish but otherwise agree with the description.

Cœnosia tibialis Stein? Hope Gardens, Feb. 22; Yallahs Valley, Blue Mts., Feb. 27.

The two specimens agree well with a cotype in my collection, but as the specimens are in poor condition, I must question their identity.

CLUSIODIDÆ (HETERONEURIDÆ)

Heteromerigia lumbalis (Williston). *Heteroneura lumbalis* Williston, 1896, Trans. Ent. Soc. London, p. 388. Montego Bay, March 4-6, (Cushman).

BORBORIDÆ

Limosina sp. Balaclava and Clarkston, (Thaxter).

SAPROMYZIDÆ

Lonchæa wiedemanni Townsend. *L. nigra* Wiedemann (*non* Meigen). Montego Bay, March 4, (Cushman).

Lonchæa orchidearum Townsend. "One specimen bred March 19 from a flower stem of an orchid (*Oncidium luridum*) brought from Kingston Garden, Feb. 22" (Townsend). Montego Bay, March 2, (Grossbeck).

Lauxania albovittata Loew. Port Antonio, April-May; Liguanea Plain, Nov.-Dec., (Brues); Montego Bay, Feb. 28-March 4, (Cushman).

Sapromyza bipunctata Say. Kingston, April; Liguanea Plain, Nov.-Dec., (Brues).

Sapromyza grata Wiedemann. Liguanea Plain, Kingston, Nov.-Dec., (Brues.)

Sapromyza octopunctata Wiedemann. Kingston, April; Liguanea Plain, Nov.-Dec., (Brues); Montego Bay, March 6, (Cushman).

Sapromyza sordida Wiedemann. Rock Fort, near Kingston, April; Liguanea Plain, Nov.-Dec., (Brues). Montego Bay, Feb. 28-March 4, (Cushman).

Sapromyza sororia Williston. Catodupa, March 9.

Sapromyza cincta Loew. Liguanea Plain, Kingston, Nov.-Dec., (Brues).

Sapromyza sp. Cinchona, Feb. 25. One specimen measuring 5 mm., probably a large form of *S. sordida* Wiedemann.

Physogenna vittata Macquart. Port Antonio, April-May; Montego Bay, March 6, (Cushman); Liguanea Plain, Nov.-Dec., (Brues); Hope Gardens, Feb. 22, and Catadupa, March 4, (Grossbeck).

Physogenna (?) multicolor, new species

Head light yellow, a large, round, shiny, black spot on the center of the face, and a smaller one on the vertex surrounding the ocelli, antennæ yellow (third joint wanting). Thorax light brown, shining, humerus and a large oblong spot on the pleura light yellow, these spots are surrounded by two oblique dark brown stripes, two dark brown slightly arcuate stripes extend from the suture to the basal angles of the scutellum, scutellum light yellow, metanotum light brown. Abdomen black, shiny. Legs and halteres light yellow, wings hyaline, with a slight yellowish tinge. Length, 2.5 mm.

One specimen: Montego Bay, March 15, 1911, (Grossbeck). Type in The American Museum of Natural History.

Owing to imperfect antennæ I am referring it provisionally to this genus. The facial and pleural markings have a superficial resemblance to *Lauxiania flavida* Wiedemann and it may possibly belong to that genus notwithstanding its weak frontal thoracic and scutellar bristles.

Minettia annulipes, new species

FEMALE.—Face grayish pollinose with a brownish spot on the upper angle of the epistoma and at the junctions of the facial and inferior orbits; front grayish with two short stripes slightly diverging above; two frontal and two vertical bristles; first and second joints of the black with black hairs and bristles, third joint yellowish, arista blackish slightly pubescent. Thorax grayish pollinose with lateral and two subdorsal brown stripes, there is also a slight dorsal stripe which does not reach either the anterior or posterior margins; four large dorso-centrals inserted in a black dot and two small post-arcosticals; pleura gray spotted with brown; scutellum gray with four marginal bristles. Abdomen yellowish with blackish bands in the third and fifth, these are divided forming two large spots. Legs light yellow, femora with an apical and submedian ring of black, on the middle femora there is also a basal ring; tibiae with a subbasal and apical ring of black; tarsi brownish. Halteres yellow. Wings brownish hyaline, anterior cross vein at the middle of the discal cell. Length, 2.6 mm.

Two specimens. Cinchona, Feb. 25, 26, 1911, (Grossbeck). Holotype and paratype in The American Museum of Natural History.

Resembling *M. quadrilineata* Loew and *M. annulata* Melander, but readily separated by its dark banded legs.

Minettia cineracea (Coquillett). Liguanea Plain, Kingston, Nov.-Dec., (Brues).

ORTALIDÆ

Notogramma stigma (Fabricius). Liguanea Plain, Nov., (Brues); Montego Bay, Feb. 25, (Cushman).

Euxesta annonæ (Fabricius). Kingston and Port Antonio, April; Liguanea Plain, Dec., and Newton 3000 ft., Jan., (Brues); Montego Bay, March 2, and Catadupa, March 9, (Grossbeck).

Euxesta annonæ scutellata, new variety

This differs from the typical *F. annonæ* Fabr. in having the scutellum bright red, femora and tarsi reddish, tibiæ black, bluish on the outer side.

Two specimens, Montego Bay, Feb. 25, 1912, (Cushman).

Euxesta costalis (Fabricius). Port Antonio, April; Liguanea Plain, Dec., and Newton, 3000 ft., Jan., (Brues).

Euxesta stigmatias Loew. Port Antonio, April; Montego Bay, March 2.

Euxesta pusio Loew. Liguanea Plain, Dec., (Brues).

Euxesta avala (Walker). *Trypeta avala* Walker, 1849, List Dipt. Brit. Mus., IV, p. 1020. "Jamaica," (Walker).

TRYPETIDÆ

Anastrepha acidusa (Walker). "Jamaica," (Walker).

Anastrepha ocesia (Walker). "Jamaica," (Walker).

Hexachæta dinia (Walker). "Jamaica," (Walker). This may be the same as *H. eximia* Wiedemann.

Aciura insecta (Loew). Common, Port Antonio, April–May. Yallahs Valley, Feb. 29 and Catadupa March 9, (Amer. Mus. Nat. Hist.).

Acidia fallax, new species

FEMALE.—Head, antennæ, thorax, scutellum, and legs dark yellow; abdomen black, somewhat shiny. In color markings the wings resemble those of *A. fratria* Loew (Mon. N. A. Dipt., III, Pl. x, fig. 4), but the cross-veins are nearer each other, the larger of the oblique bands covering both of these, is not sinuous, the middle costal spot is larger and divided, the extreme base of the wing is hyaline, and an irregular hyaline band extends from the costa across the basal and third posterior cells. Length, 4 mm.

Yallahs Valley, Blue Mts., Feb. 27. Type in The American Museum of Natural History.

Ensina picciola (Bigot). *Trypeta humilis* Loew, 1862, Mon. Dipt. North America, I, p. 81. Common, Port Antonio, April–May. Liguanea Plain, Nov.–Dec., (Brues). Yallahs Valley, Feb. 27; Cinchona, Feb. 25; Catadupa March 9, (Amer. Mus. Nat. Hist.).

Tephritis fucata (Fabricius). Common, Rock Fort, near Kingston April.

Tephritis finalis (Loew). One specimen, Newton, 3000 ft., Brues.

Euaresta melanogaster (Loew). Port Antonio, April, Montego Bay. Catadupa, March 9, (Amer. Mus. Nat. Hist.). Liguanea Plain, Nov.-Dec., (Brues).

MICROPEZIDÆ

Micropeza producta Walker. Port Antonio, April 1891.

Nerius solitarius, new species

Front dark brown, narrowly margined with yellow, one vertical and two orbital bristles, the projecting portion of the head blackish, face white, proboscis yellow; first joint of the antenna nearly as long as the other two, the second black above, yellow below, all of the third joint brown, arista black, thickened and yellowish at the base, as long as the antenna. Occiput black, thick grayish pollinose above, with a narrow, median, yellow transverse line. Thorax brown, with a wide gray dorsal stripe containing two narrow lines diverging anteriorly and uniting near the scutellum where there are three prominent bristles, scutellum gray with the discal portion reddish, pleura brown, grayish pollinose, anterior coxæ light yellow, the same color prevailing over the entire prosternum. Abdomen brownish, the sides below narrowly margined with light yellow. Legs yellow, tarsi black. Halteres yellow. Wings hyaline, tinged with brown. Length, 5 mm.

One specimen, Porus, (Dr. C. W. Metz). Type in the author's collection.

Tæniaptera lasciva (Fabricius). *Calobata lasciva* Fabr., of the previous list. Port Antonio, April-May; Catadupa, March 9.

Tæniaptera fasciata (Fabricius). Port Antonio and Kingston, April-May; Mandeville, (Cockerell).

Tæniaptera pleuritica (Johnson). *Calobata pleuritica* Johnson, 1894, Proc. Acad. Nat. Sci., Phila., p. 279. Port Antonio, May.

SEPSIDÆ

Sepsis discolor Bigot. Port Antonio, April.

Sepsis insularis Williston. Kingston, April; Montego Bay, March 6, (Cushman).

Piophila casei (Linné). "Cheese maggot." Kingston, April; also taken on the vessel en route.

EPHYDRIDÆ

Notiphila virgata Coquillett. Port Antonio, April.

Paralimna (Phalosterna) decipiens Loew. Kingston, April; Porus; Williamsfield; Mandeville; and Clarkstown, (Thaxter).

Paralimna plumbiceps Cresson, 1910, Trans. Amer. Ent. Soc., XLII, p. 110. Port Antonio and Kingston, April.

Paralimna ciliata Cresson, 1916, Trans. Amer. Ent. Soc., XLII, p. 111. Kingston, April; Port Antonio, March 30, (C. W. Metz); Liguanea Plain, Nov. and Dec., (Brues); Balaclava; Mandeville and Clarkstown, (Thaxter).

Atissa sp. Mandeville, Battersea and Clarkstown, (Thaxter).

Psilopa aciculata Loew. Hope Garden, Feb. 22.

Psilopa willistoni Cresson. *Psilopa nigrimanus* Williston, 1896, Trans. Ent. Soc., London, p. 393. *non* v. Ros., 1840. Montego Bay, Feb. 25, (Cushman); March 15, (Grossbeck).

Ilythea sp. Balaclava, Williamsfield, and Clarkstown; Mandeville; Battersea, (Thaxter).

Ochthera exculpta Loew. Kingston and Port Antonio, April.

Ochtheroidæ glaphyropus (Loew). *Athyroglossa glaphyropus* Loew, 1878, Zetisch. f. Ges. Naturwiss., p. 198. Mandeville and Porus, (Thaxter).

Discocerina leucoprocta Loew. Port Antonio, March 30, (Metz).

Discocerina parva Loew. Port Antonio, March 30, (Metz); Montego Bay, Feb. 28, (Grossbeck).

Napaea humilis (Williston). *Parydra humilis* Williston, 1897, Kans. Univ. Quart., VI, p. 7. Balaclava, (Thaxter).

CHLOROPIDÆ

Hippelates bicolor Coquillett. Montego Bay, March 15, (Grossbeck).

Hippelates dorsalis (Loew). Catadupa, March 9, (Grossbeck).

Hippelates convexus Loew. Yallahs Valley, Blue Mts., Feb. 27; Cinchona, March 9, (Grossbeck); Montego Bay, Feb. 25, (Cushman).

Hippelates flavipes Loew. Montego Bay, March 2; Cinchona, Feb. 25, (Grossbeck).

Crassiseta attenuata Adams. Hope Gardens, Feb. 22. The specimen before me is in poor condition, with the aristæ wanting. As it agrees, however, with a specimen from Florida in my collection, I have little doubt of the identification.

Siphonella sp. Jamaica, (Thaxter).

DROSOPHILIDÆ

Drosophila melanogaster Meigen. *D. ampelophila* Loew, of authors. Kingston, April 15.

Drosophila opaca Williston. Port Antonio; Porus, (Metz).

Drosophila repleta Wollaston. *D. punctulata* Loew, 1862, Cent., II, p. 100. Kingston, April 15.

Drosophila willistoni Sturtevant. *D. pallida* Williston, 1896, Trans. Ent. Soc. London, p. 415 (*non* Zetterstedt, 1847). Porus, (Metz).

Drosophila similis Williston. Port Antonio; Porus, (Metz).

Drosophila cardini Sturtevant, 1916, Ann. Ent. Soc. Amer., IX, p. 336. Porus, (Metz).

Drosophila lutzii Sturtevant, 1916, Ann. Ent. Soc. Amer., IX, p. 340. Hope Gardens, (Metz).

Scaptomyza graminum (Fallen). Yallahs Valley, Feb. 27.

Sigaloessa sp. Mandeville, (Thaxter).

AGROMYZIDÆ

Agromyza cœrulea Malloch, 1913, Ann. Ent. Soc., Amer., VI, p. 322. Kingston, April.

Agromyza maculosa Malloch. Port Antonio, May; Yallahs Valley, Feb. 27.

Agromyza minima Malloch. Kingston and Port Antonio, April–May.

Agromyza platyptera var. *allecta* Melander, 1913, Journ. N. Y. Ent. Soc., XXI, p. 257. Cinchona, Feb. 25; Yallahs Valley, Feb. 27; Montego Bay, Feb. 28.

Agromyza plumiseta Malloch. Kingston, April; Hope Gardens, Feb. 22; Yallahs Valley, Feb. 27; Catadupa, March 9; Montego Bay, Feb. 25, (Cushman).

Agromyza viridula Coquillett. Hope Gardens, Feb. 22; Montego Bay, Feb. 22.

Agromyza melampyga Loew. Montego Bay, Feb. 25, March 6, (Cushman).

Cerodontha dorsalis (Loew). Liguanea Plain, Nov.–Dec., (Brues).

Desmometopia m-nigrum (Zetterstedt). Port Antonio, April; Montego Bay, Feb. 25–March 4, (Cushman).

Phleomyia indecora (Loew). Kingston, April.

Milichiella lacteipennis (Loew). Kingston, April.

Milichiella argenteocincta, new species

FEMALE.—Front black, opaque, vertical orbits shiny, face silvery white, with six orbital bristles; antennæ dark brown, base yellow. Thorax black, slight grayish pruinose, one post-acrostical scutellum with four large marginal bristles. Abdomen black, the terminal segment shiny greenish black, the others opaque with a prominent silvery band on the posterior margin of the second segment, third segment with a narrow posterior margin. Legs black. Halteres bright yellow. Wings grayish hyaline. Length, 3 mm.

One specimen, Kingston, April 1891.

Ochthiphila quadrata, new species

Front grayish with a blackish transverse stripe above the antennæ, from which extend two lines to the vertex; face silvery white, orbits blackish; palpi and antennæ yellowish (the terminal joint of the latter wanting). Thorax grayish pruinose, with four obscure longitudinal lines, the middle pair abbreviated posteriorly, an obscure yellowish lateral line extends from the humerus to the base of the wing. Abdomen light gray, a pair of large, velvety black, quadrate spots on all but the first segment, which is black except for the narrow posterior margin. Halteres yellow. Femora and base of the tibiæ black; knees, the greater portion of the tibiæ and all of the tarsi yellow. Wings grayish hyaline. Length, 2.5 mm.

One specimen, Cinchona, Feb. 25, 1911 (Grossbeck). Type in The American Museum of Natural History.

Differs from *O. elegans* Panz. in having much larger quadrate markings on the abdomen.

Spilochroa ornata (Johnson). Montego Bay, March 4, (Cushman).

Rhicoëssa willistoni Melander. *Anthomyza cinerea* Williston, 1896, Trans. Ent. Soc. London, p. 444, Pl. xiv, fig. 170. *Non R. cinerea* Loew, 1862. *R. willistoni* Melander, 1913, Journ. N. Y. Ent. Soc., XXI, p. 298. Kingston, April.

