

distr. notes); Hull, 1942c: 10, figs. 2 (abdomen), 3 (mesonotum) (descript. notes).

Distribution.—Cuba*.

I have seen only one specimen of the *pratorum* superspecies from Cuba, the holotype of *opulentus* Bigot. This specimen is very similar in appearance to *panamensis* Curran and is quite distinct from both *acutus* and *pratorum* (*v.s.*). Without more material it is impossible to properly assess the status of the Cuban populations of *pratorum* superspecies, and until this is done I treat *milesiformis* as a valid species.

Macquart originally spelled *milesiformis* with two "l"s but I accept this as a *lapsus calami* because he gave the French vernacular name as "*milesiforme*" and stated that the species had the "*facies des Milesies . . .*" In all subsequent usage of this name Macquart spelled it with one "l."

Meromacrus pinguis (Fabricius)

Fig. 165

Musca cinctus Drury, 1773: (4) [1770: 109, pl. 45, fig. 6 (habitus)] (preocc. by Müller in Allioni, 1766). Type-loc.: Jamaica. Type(s) ?.

Pteroptila cincta: Osten Sacken, 1878: 133 (synonymy); Roeder, 1885: 342 (Puerto Rico; descript. notes); Gundlach, 1887: 186 (Puerto Rico); Williston, 1887: 182 (San Domingo; descript.); Cockerell, 1892: 74 (Jamaica); Johnson, 1894: 277 (Jamaica).

Meromacrus cinctus: Townsend, 1895: 50, 51 (Jamaica, descript. notes); Aldrich, 1905: 391 (citation, synonymy); Johnson, 1919: 435 (Jamaica); Hine, 1924: 21 (Jamaica, Hispaniola, Puerto Rico; descript., distr. notes); Wolcott, 1923: 220, 1936: 352, 1948: 469 (Puerto Rico, descript. notes); Gowdey, 1926: 80 (Jamaica); Drewry, 1970: E-147 (Puerto Rico); Telford, 1973: 239 (Puerto Rico).

Syrphus pinguis Fabricius, 1775: 763. Type-loc.: "America." Type(s) same as those of *cinctus* Drury (*v.* Wiedemann, 1830: 193). Synonymy by Wiedemann, 1830: 193.

Eristalis pinguis: Fabricius, 1805: 233; Wiedemann, 1830: 193 (discusses relationship between Drury's and Fabricius' work).

Milesia ania Walker, 1849: 564. Type-loc.: Jamaica. Type ♀ BM(NH). Subsequent reference: Macquart, 1855: 94 (Jamaica, descript. note). Synonymy by Osten Sacken, 1878: 133.

Plagiocera poiens Ragues, 1908: 312 (Cuba; *nomen nudum*).

Meromacrus potens Curran, 1932: 8. Type-loc.: Cuba, Sierra Maestra, B. de Joaquin. Holotype ♂ AMNH. Subsequent reference: Hull, 1942c: 2, fig. 4 (antenna). NEW SYNONYMY.

Pteroptila sp. of Cockerell, 1894: 419 (Jamaica).

Distribution.—Cuba*, Jamaica*, Hispaniola*, Puerto Rico*.

Meromacrus pinguis is a widespread and variable species. *Meromacrus*

potens Curran was based on the Cuban populations of this species; the types are slightly larger, have more pronounced pollinose vittae on the mesonotum, and are more brownish black on the basal third of the abdomen than in the typical individual from Jamaica. Otherwise the types are identical to the Jamaican form. The Hispaniolan populations are similar to those of Cuba. The Puerto Rican populations are quite distinct from those of the other islands. The Puerto Rican males have the entire abdomen brick red and lack the broad yellow tomentose fascia on the third tergum, whereas the males from the other islands have a broad yellow tomentose pile fascia on the base of the third tergum and are dark brownish black to shiny bluish black beyond the yellow fascia. The females are quite similar to their respective males except the Puerto Rican females sometimes appear to have a slight trace of the yellow fascia.

Meromacrus pratorum (Fabricius)

Syrphus pratorum Fabricius, 1775: 765. Type-loc.: "Americae Insulis" (restricted by Fabricius, 1794: 286). Lectotype ? KIEL now in MC, see Appendix B. Subsequent reference: Zimsen, 1964: 478 (type).

Eristalis pratorum: Fabricius, 1805: 236; Wiedemann, 1830: 166 (redescript.; ? based on a mixed series of *pratorum* and *panamensis* Curran, definitely refers to a *panamensis* in VMNH).

Pteroptila pratorum: Osten Sacken, 1878: 133; Roeder, 1885: 342 (Puerto Rico); Gundlach, 1887: 186 (Puerto Rico).

Meromacrus pratorum: Williston, 1896: 346 (St. Vincent, descript. notes); Aldrich, 1905: 391 (citation); Wolcott, 1923: 220, 1936: 352, 1948: 469 (Puerto Rico); Hine, 1924: 22 (descript., distr. notes, Puerto Rico, St. Vincent); Curran, 1928b: 43 (Virgin Is.); Doesburg, 1970: 99 (discusses status of species in Lesser Antilles).

Milesia maculata Macquart, 1850: 451, pl. 14, fig. 2 (wing). Type-loc.: Africa. Lectotype ♀ MNHN*, see Appendix B. NEW SYNONYMY.

Meromacrus flukei Curran, 1936a: 3. Type-loc.: St. Vincent. Holotype ♂ AMNH. Subsequent reference: Telford, 1973: 240 (reports status of species in Puerto Rico). NEW SYNONYMY.

?*Meromacrus acutus* of Gowdey, 1926: 80 (= *pratorum* Fabricius?).

Distribution.—Hispaniola*, Puerto Rico*, Virgin Is. (St. Thomas*), Lesser Antilles (St. Vincent*).

This species was originally described from "America" and was collected by von Rohr. Later Fabricius (1794: 286) restricted the type-locality to "Americae Insulis." As noted in the introduction it seems very likely that von Rohr collected this species on St. Croix. Williston (1896: 346) recorded the species from St. Vincent, and Curran (1928b: 43) recorded it from St.

Thomas. In 1930 Curran (1930d: 11) described a species closely related to *pratorum* from Panama. Later Curran, without any apparent reason, decided that this mainland species (*panamensis* Curran) was the same as *pratorum* Fabricius, and that the *pratorum* of Williston and himself from the Lesser Antilles was actually a new species which he then named *flukei*. Curran did not examine the original description of *pratorum* but the 1794 description which is the very one in which Fabricius restricted the type-locality to "Americae insulis." ("In his original description Fabricius states that the posterior femora are 'unidentate' . . ." Curran, 1936a: 2). In the original description, Fabricius did not mention the 'unidentate' femora and placed the species before *Parhelophilus frutetorum* (Fabricius). In the 1794 description the phrase "femoribus posticis unidentatis" was added to the very last line, and a new species, *Spilomyia saltuum* (Fabricius), was added between *pratorum* and *frutetorum*. Since Fabricius did not usually change his descriptions, I strongly suspect the added phrase was a printing error, that is, when *saltuum*, a species which does have the unidentate hindfemora, was added, the extra phrase was tacked onto the last line of *pratorum* instead of the first line of *saltuum*. In summary, only one species of the *pratorum* superspecies (*q.v.*) is known to occur in the Virgin Islands, and the senior synonym is *pratorum* Fabricius, with *flukei* Curran as a junior synonym.

Meromacrus ruficrus (Wiedemann)

Figs. 169, 176

Milesia ruficrus Wiedemann, 1830: 105. Type-loc.: Cuba. Type ♀ ZMB.

Pteroptila ruficrus: Osten Sacken, 1878: 133; Williston, 1887: 181 (Cuba, *descript.*).

Plagiocera ruficruz: Ragues, 1908: 312 (Cuba; misspelling).

Meromacrus ruficrus: Aldrich, 1905: 391; Hine, 1924: 22 (in part; *descript.*, *distr. notes*, Cuba); Gowdey, 1926: 80 (Jamaica); Hull, 1942c: 3, fig. 5 (antenna).

Distribution.—Cuba*, Jamaica.

Meromacrus ruficrus is restricted to the West Indies, the form identified as *ruficrus* from Florida represents a new species.

Meromacrus unicolor (Wulp)

Eristalis unicolor Wulp, 1882: 131, pl. 10, figs. 11 (habitus), 12–13 (head).

Type-loc.: Guadeloupe. Holotype ♀ MRHNB.

Meromacrus unicolor: Doesburg, 1970: 97 (suggests that it is the same as *bruneri* Curran).

Distribution.—Lesser Antilles (Guadeloupe).

TRIBE CERIOIDINI KERTÉSZ

Genus *Ceriana* Rafinesque

Ceria Fabricius, 1794: 277 (preocc. by Scopoli, 1763). Type-species, *clavicornis* Fabricius (Latreille, 1810: 443) = *conopsoides* (Linnaeus).

Ceriana Rafinesque, 1815: 131 (new name for *Ceria* Fabricius).

Cerioides Rondani, 1850: 211 (originally cited in synonymy; validated by Bezzi and Stein, 1907: 156). Type-species, *Ceria subsessiles* Illiger.

Monoceromyia Shannon, 1922a: 33, 41. Type-species, *Ceria tricolor* Loew (mono.).

References: Curran, 1941: 243–244 (key to New World spp.); Vockeroth, 1971 (synonymy; nomenclature); Thompson, 1972: 129–132 (descript.).

I use *Ceriana* in its broad sense to include all members of the Tribe Cerioidini. In this sense the group is worldwide in distribution, equally well represented in all faunal regions but without any species in the higher latitudes. There are three known West Indian species, all belong to the *monoceromyia* group.

KEY TO WEST INDIAN SPECIES OF *CERIANA* RAFINESQUE⁹

1. Mesonotum with yellow supraalar vitta 2
– Mesonotum completely dark above wing (Cuba) .. *weemsi*, new species
2. All femora with basal ½ or more black (Jamaica) ... *daphnaeus* (Walker)
– Front and middle femora yellow to orange; hindfemur yellow on basal ⅓ or more 3
3. Pleurotergite all dark, without a large yellow spot (Florida)
..... *floridensis* (Shannon)
– Pleurotergite with a large yellow spot (Cuba) *tricolor* (Loew)

Ceriana daphnaeus (Walker)

Fig. 186

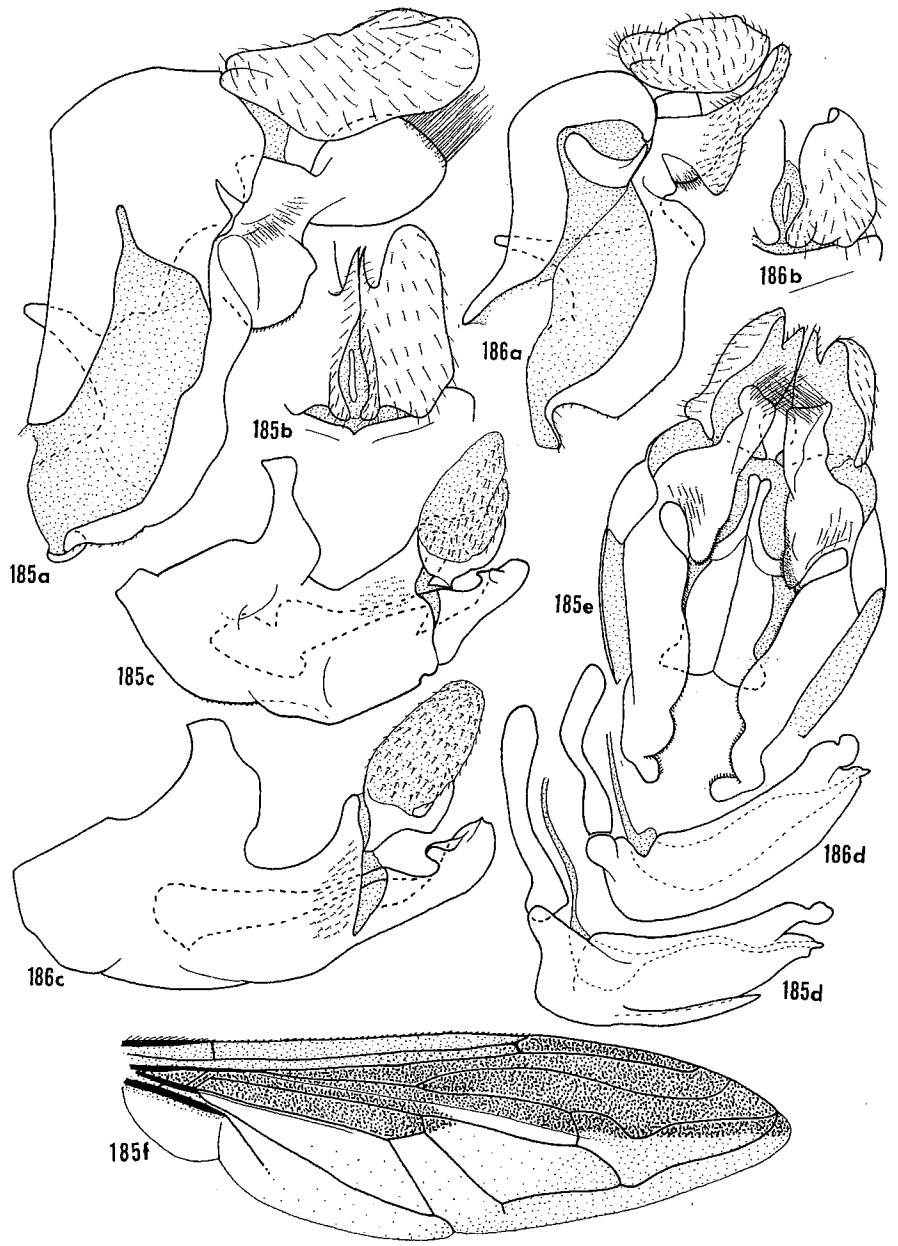
Ceria Daphnaeus Walker, 1849: 537. Type-loc.: Jamaica. Holotype ♀ BM(NH)*. Subsequent references: Westwood, 1849: 234, pl. 23, fig. 7 (habitus), 7a (head) (redescript.); Saunders, 1849: 230 (note); Loew, 1853: 17 (redescript.); Johnson, 1894: 277 (Jamaica); Shannon, 1925a: 65 (citation).

Cerioides Daphnaeus: Kertész, 1910: 363; Johnson, 1919: 435 (Jamaica); Gowdey, 1926: 80 (Jamaica).

Monoceromyia daphnaeus: Shannon, 1927b: 51.

Distribution.—Jamaica*.

⁹ *Ceriana floridensis* Shannon is included in the key for comparison only; it does not occur in the West Indies.



Figs. 185-186. *Ceriana*, males. 185, *C. tricolor*. 186, *C. daphnaeus*. a, 9th tergum and associated structures, lateral. b, Cercus, dorsal. c, 9th sternum, lateral. d, Aedeagus, lateral. e, Same as a, ventral oblique. f, Wing.

Ceriana tricolor (Loew)

Figs. 2, 185

Ceria tricolor Loew, 1861: 37. Type-loc.: Cuba. Syntypes ♂ ♀ MCZ (lost ?). Subsequent references: Ragues, 1908: 312 (Cuba); Hine, 1914: 343 (Cuba).

Cerioides tricolor: Kertész, 1910: 366.

Monoceromyia tricolor: Shannon, 1922a: 41 (descript.); Shannon, 1925a: 55 (citation; distr. notes); Shannon, 1927b: 51 (cited); Hull, 1949b: 264, fig. 3b (head).

Distribution.—Cuba*.

Ceriana weemsi Thompson, NEW SPECIES

Fig. 184

Male.—*Head*: Face yellow except for narrow reddish-brown medial vitta, sparsely short yellow pilose; cheek brownish on anterior $\frac{1}{2}$, yellow on posterior $\frac{1}{2}$; frontal triangle yellow; frontal prominence long, about as long as face, slightly shorter than antenna, $3\times$ as long as 3rd segment, yellow on basal $\frac{1}{3}$, light brownish red on apical $\frac{2}{3}$; vertical triangle brownish black; occiput yellow on upper and lower $\frac{1}{3}$, black on medial $\frac{1}{3}$, sparsely yellow pollinose, yellow pilose. Antenna brown, black pilose; ratio of segments 14:14:10; 2nd segment triangular, slightly more than twice as wide at apex as at base, slightly less than $\frac{1}{2}$ as wide as long; 3rd segment triangular; style short, $\frac{1}{2}$ as long as 3rd segment.

Thorax: Humerus yellow; mesonotum black except for yellow notopleuron and yellowish-brown postalar callus, dull pollinose, very short yellow pilose; scutellum yellow, yellow pilose. Pleuron mainly brownish black, yellow pilose, yellow as follows: On posterior mesopleuron, upper sternopleuron, anterior pteropleuron, pleurotergite, metathoracic pleuron; metasternum dirty yellow; squama pale yellow, halter yellow. *Legs*: Coxae brown, sparsely silvery pollinose, yellow pilose; rest of legs mainly yellow and yellow pilose, with femora more brownish red subbasally. *Wing*: Same as figured for *tricolor* (Fig. 185f), yellowish brown on costal cell and on subcostal cell behind costal cells, dark brown on rest of anterior $\frac{1}{2}$, hyaline on posterior $\frac{1}{2}$, microtrichose except bare as follows: Apical $\frac{1}{3}$ of 1st basal cell behind spurious vein, basoposterior $\frac{1}{8}$ of apical cell, extensively on basal $\frac{3}{4}$ of discal cell, extensively on cubital and anal cells and anal lobe, alula.

Abdomen: First tergum yellow on lateral $\frac{2}{3}$, black on medial $\frac{1}{3}$, yellow pilose; 2nd and 3rd terga black except broadly yellow on apical margin, yellow and black pilose; 4th tergum reddish brown, yellow pilose; sterna brownish orange, yellow pilose; male genitalia dark orange; cercus flattened, oblong and with sinuate margins in dorsal view; style with dorsal lobe projecting under cercus and with blunt apex, with ventral lobe simple,

evenly curved; superior lobe more elongate, membranous, bare; rest of genitalia very similar to *tricolor* (Loew).

Holotype.—♂, CUBA, Guantanamo Bay, U.S. Naval Base, 3 September 1964, T. S. Josey; collected in black light trap. From the personal collection of H. V. Weems, Jr., and to be deposited in USNM.

Discussion.—*Ceriana weemsi* is very closely related to *tricolor* (Loew) and *floridensis* (Shannon) but differs from them by lacking supraalar yellow vittae on the mesonotum. The abdominal petiole of *weemsi* is rather broad in comparison to these species and is almost as broad as that found in *abbreviata* (Loew).

TRIBE MILESIINI RONDANI

Genus *Milesia* Latreille

Milesia Latreille, 1804: 194. Type-species, *Syrphus crabroniformis* Fabricius (Williston, 1887: 254) to preserve established usage (see Thompson 1972: 176).

References: Hull, 1924 (key to American spp.); Thompson, 1972: 176–177 (descript.).

Milesia has its greatest diversity in the Oriental tropics (38 species). Eight species are known from the southern portions of the north temperate region. One Ethiopian species (*afra* Doesburg from the Congo) is known, and the genus is absent from the Australian Region (including New Guinea). The five New World species are known from the southeastern United States to Panama, and there is a dubious record from the West Indies.

Milesia virginiensis (Drury)

Musca virginiensis Drury, 1773: 71, pl. 37, fig. 6 (habitus) and index, [p. 2]. Type-loc.: Virginia. Type(s) ?.

Milesia ornata Fabricius, 1805: 188. Type-loc.: "Carolina." Type(s): Bosc Coll., MNHN (lost?) (Zimsen, 1964: 473). Subsequent reference: Macquart, 1842: 141, pl. 15, fig. 4 (head, wing) (Guadeloupe; descript. notes). Synonymy by Wiedemann, 1830: 106.

There is no doubt about the identity of the specimen Macquart studied, but the locality record of Guadeloupe is highly improbable. The southernmost localities from which *virginiensis* is known are Florida and Mexico (Nuevo Leon). This, combined with the fact that *Milesia* species have never been collected from either the Antilles or South America proper, suggests that Macquart's record is an error.

Genus *Neplas* Porter

Planes Rondani, 1863: 9 (preocc. by Bowditch, 1825; Saussure, 1862). Type-species, *Xylota vagans* Wiedemann (mono.).

Neplas Porter, 1927: 96 (new name for *Planes* Rondani).

References: Shannon, 1926a: 12–15, 44–45 (revision); Curran, 1941: 298–304 (key); Thompson, 1972: 157–158 (descript.).

Neplas is the tropical component of *Xylota* (*sensu lato*). In the New World some 28 species are known, ranging from southern Arizona to northern Argentina. In the Old World tropics *Neplas* species are less well known and are undoubtedly still confused with *Xylota*, but at least three species are known from the Ethiopian Region and one from the Oriental Region. There are four known West Indian species.

KEY TO WEST INDIAN SPECIES OF *NEPLAS* PORTER

1. Front tibia yellow or orange; hindfemur elongate (Fig. 190); 3rd antennal segment oval, only slightly longer than broad (Fig. 188); metasternum of male with strong ventral spines 2
 - Front tibia partially brown to black; hindfemur shorter and broader (Fig. 191); 3rd antennal segment elongate, slightly more than twice as long as broad (Fig. 189); metasternum without spines 3
2. Front and middle legs virtually all orange; face golden pollinose over orange ground color; metallic copper-green flies (Cuba) *bettyae*, new species
 - Front and middle femora mainly metallic azure blue; face silvery-white pollinose over azure-blue ground color; metallic azure-blue flies (Cuba, Jamaica, Hispaniola) *pretiosus* (Loew)
3. Alula narrow, slightly narrower than 2nd basal cell; front and middle tarsi with basal 3 tarsomeres yellowish orange, with apical 2 tarsomeres black; hindtibia without a distinct lateral carina on apical $\frac{1}{2}$ (Fig. 192) (Cuba) *proximus* (Hull)
 - Alula broader, slightly broader than 2nd basal cell; front and middle tarsi with only basal 2 tarsomeres yellowish orange, with middle tarsomere brown, with apical 2 black, hindtibia with a distinct lateral carina on apical $\frac{1}{2}$ (Fig. 193) (Cuba, Jamaica) *pachymera* (Loew)

Neplas bettyae Thompson, NEW SPECIES

Female.—*Head*: Face yellow, golden pollinose; cheek greenish black, shiny on anterior $\frac{1}{2}$, sparsely brassy pollinose on posterior $\frac{1}{2}$, yellow pilose; frontal lunule orange; front shiny copper green, narrowly golden pollinose along eye margins, yellow pilose; vertex slightly darker copper green, shiny, yellow pilose except black pilose on ocellar triangle; occiput dark greenish black, brassy pollinose, yellow pilose. Antenna brownish orange on basal 2 segments, darker brown on 3rd, orange pilose; 3rd segment slightly longer than broad; arista orange except black tip, bare.

Thorax: Shiny copper green, short golden pilose dorsally, longer golden to yellow pilose laterally and ventrally; mesonotum all shiny except white pollinose on medial side of humerus, with black spinose hairs above wing

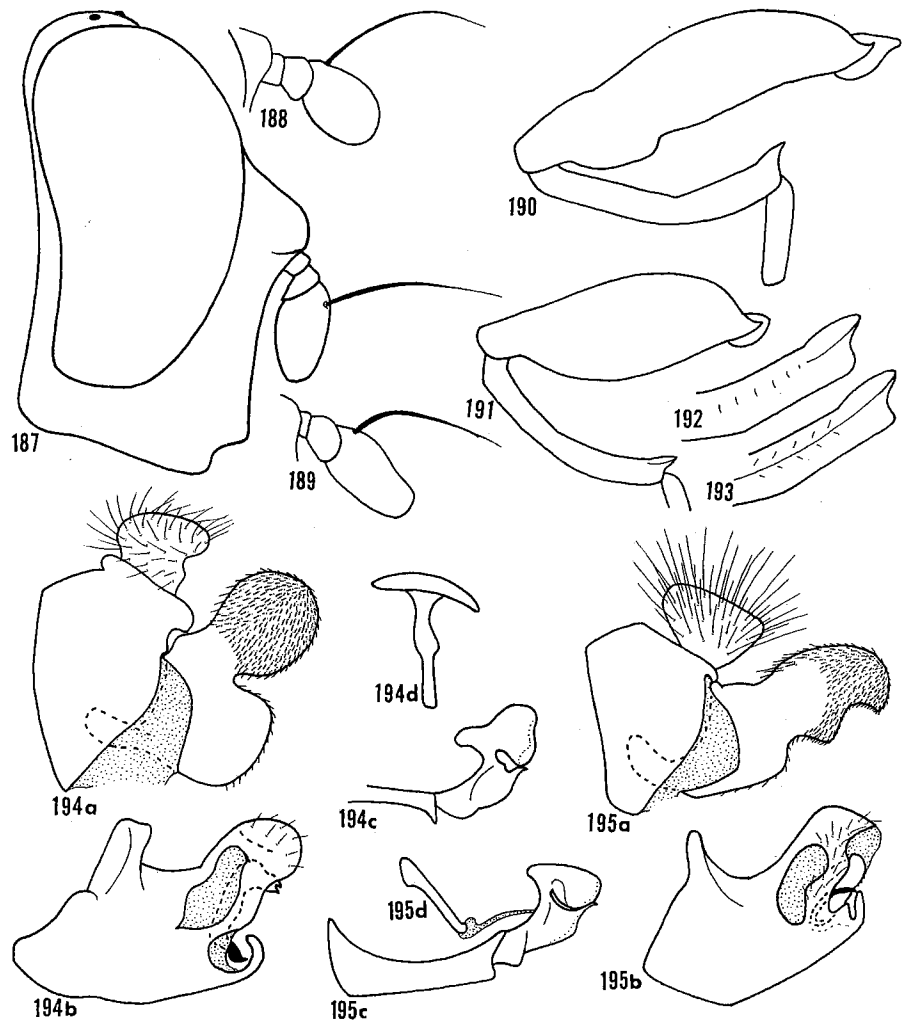


Fig. 187. *Sterphus jamaicensis*, male head, lateral. Figs. 188–189. *Neplasp* spp., antenna, lateral. 188, *N. pretiosus*. 189, *N. pachymera*. Figs. 190–191. *Neplasp* spp., hindleg, lateral. 190, *N. pretiosus*. 191, *N. proximus*. Figs. 192–193. *Neplasp* spp., apex of hindtibia, dorsal oblique. 192, *N. proximus*. 193, *N. pachymera*. Figs. 194–195. *Neplasp* spp., male genitalia, lateral. 194, *N. pachymera*. 195, *N. pretiosus*. a, 9th tergum and associated structures. b, 9th sternum. c, Aedeagus. d, Ejaculatory apodeme.

and a few orange spinose hairs on anterior edge of postalar callus; pleuron sparsely white pollinose except shiny on pteropleuron and more densely pollinose on posterior mesopleuron and sternopleuron; scutellum yellow pilose, with 3 pairs of weak orange marginal bristles, with yellow ventral

fringe, with no apical emarginate groove; squama yellowish white, with orange margin and fringe; plumula short, pale orange; halter orange; metasternum without a trace of ventral spine (although will probably be found in the males). *Legs*: Front and middle legs virtually all orange, with apical tarsomere and base of coxa slightly brownish, golden pilose, with coxa sparsely white pollinose; hindcoxa copper green, sparsely white pollinose, yellow pilose; hindtrochanter orange, yellow pilose, with a very slight indication of a ventral tubercle (although will probably be found to be much stronger in males); hindfemur with base and apical $\frac{1}{2}$ orange, with rest dark reddish brown with copper-green reflections, mainly golden pilose, black pilose dorsally on apical $\frac{1}{4}$, with black ventral spinose hairs on only apical $\frac{1}{2}$; hindtibia orange, yellow pilose on dorsal $\frac{1}{2}$, black pilose on ventral $\frac{1}{2}$, with weak basomedial carina and no apicolateral carina, produced apically into long spine; hindtarsus orange, except brownish apical tarsomere. *Wing*: With slightly brownish tinge, with epaulet black pilose, with black bristles and orange setae on base of costa, extensively microtrichose, bare as follows: 1st costal cell, basal $\frac{1}{10}$ or less of 2nd costal cell, above Rs, antero-basal $\frac{1}{3}$ of 1st basal cell, basal $\frac{1}{8}$ of 2nd basal cell, narrowly along anterior margin of anal cell.

Abdomen: First tergum greenish black, densely grayish pollinose except shiny laterally, golden pilose, 2nd tergum with large laterally expanding quadrate orange spots, which extend over lateral margins, purplish black and dull brownish-black pollinose elsewhere, with golden pile on sides, spots and along basal margin, elsewhere appressed black pilose; 3rd tergum with 2 small transverse submedial and isolated orange spots, with sides shiny and with greenish metallic reflections, elsewhere purplish black and dull brownish-bronze pollinose, with appressed black pile medially, elsewhere longer golden pilose; 4th through 5th terga shiny purplish black, with copper reflections, golden pilose; 1st sternum dark greenish black, shiny medially, white pollinose laterally, yellow pilose; 2nd and 3rd sterna dull reddish brown, sparsely white pollinose, white pilose; 4th sternum shiny greenish black, yellow pilose, sparsely brassy pollinose; 5th sterna dull reddish brown, sparsely white pollinose, yellow pilose laterally, black pilose medially.

Holotype.—♀, CUBA, Sierra Maestra, Palma Mocha, 1070–1350 meters; 10–20 July 1922; C. H. Ballou and S. C. Bruner. Deposited in AMNH.

Discussion.—*Neplax bettyae* and *pretiosus* (Loew) differ from all other *Neplax* species by their elongate hindfemur (Fig. 190) and oval third antennal segment (Fig. 188). In these characteristics *bettyae* and *pretiosus* are like species of *Xylotomima* Shannon. *Neplax bettyae* is readily distinguished from *pretiosus* by its orange face and anterior legs. It is my pleasure to name this pretty species after my wife.

Neplaspachymera (Loew)

Figs. 189, 193, 194

Xylota pachymera Loew, 1866: 162. Type-loc.: Cuba. Lectotype ♀ MCZ* (here designated). Subsequent references: Roeder, 1885: 342 (Puerto Rico); Williston, 1887: 237 (descript.); Gundlach, 1887: 186 (Puerto Rico); Wolcott, 1923: 220, 1936: 352, 1948: 469 (Puerto Rico).

Planes pachymera: Shannon, 1926: 13 (descript.).

Heliophilus pachymera: Fluke, 1957: 98 (synonymy).

Neplaspachymera: Fluke, 1957: 100 (synonymy); Telford, 1973: 239 (Puerto Rico).

Distribution.—Cuba*, Jamaica*, Puerto Rico?.

The types of *pachymera* and *proximus* are both in very poor condition. Thus it is not possible to add much more to what was in their respective descriptions and given in the above key.

Loew's original description strongly suggests that *pachymera* was based on three or more specimens. In the Museum of Comparative Zoology there are no specimens bearing a Loew determination label for *pachymera*. The specimen labeled as the type of *pachymera* has only 1) a locality label ["Cuba, Richd"], 2) a Loew Collection label, and 3) a Bank's type label [#4056]. The holotype of *proximus* has the following labels: 1) Loew determination label ["proxima"]; 2) Loew Collection label; 3) another Loew determination label ["var. ejusd?" (=variety of the same)]; 4) a MCZ type label [#23991]; and 5) a Hull determination label [*Planes proxima* Hull, n. sp.]. Both agree perfectly with Loew's description, and both are considered syntypes. I suspect that: 1) Loew originally considered his *pachymera* as a variety of *Xylota proxima* Say (= *Syrirta pipiens* (Linnaeus)), which would explain the labels now on the holotype of *Neplasp proximus*; 2) later Loew changed his mind and described *pachymera*; and 3) there was (or is) probably a third specimen labeled with a Loew determination label of "*pachymera* m." If the above is the case, then a lectotype designation is necessary to fix the name *pachymera* Loew. Therefore I designate the specimen with the Banks type label [#4056] as the LECTOTYPE of *pachymera* Loew and have so labeled it.

The Puerto Rican records of *pachymera* are all based on Roeder's (1885) record. The species apparently has never been taken there again.

Neplasp proximus (Hull)

Figs. 191, 192

Planes proxima Hull, 1944a: 38. Type-loc.: Cuba (here restricted). Holotype ♀ MCZ.

Neplasp proxima: Fluke, 1957: 101 (citation).

Distribution.—Cuba*.

As noted under *pachymera*, I believe that *proximus* Hull was based on a syntype of *pachymera* Loew. Thus I am restricting the type-locality of *proximus* Hull to Cuba.

Neplax pretiosus (Loew)

Figs. 188, 190, 195

Xylota pretiosa Loew, 1861: 39. Type-loc.: Cuba. Type ♂ MCZ.

Subsequent references: Williston, 1887: 237 (translation of descript.); Ragues, 1908: 312 (Cuba).

Planes pretiosa: Shannon, 1926a: 13 (descript.).

Distribution.—Cuba*; Jamaica*, Hispaniola*.

Male.—*Head*: Face azure blue except narrowly brownish oral margin, silvery-white pollinose; cheek azure blue, slightly more brownish along oral margin, shiny, white pilose; frontal lunule orange; frontal triangle shiny azure blue, white pollinose narrowly along eye margins, white pilose; vertical triangle more bluish black, shiny except white pollinose in front of ocellar triangle, black pilose; occiput bluish gray, white pollinose and pilose. Antenna brownish black, black pilose; 3rd antennal segment oval, only slightly longer than wide; arista bare, brown.

Thorax: Shiny azure blue, short white pilose except for band of black pile across mesonotum between wings, white pollinose as follows: Along inner margin of humerus and anterior edge of mesonotum, sparsely on prothorax, sternopleuron, hypopleuron, pleurotergite and metanotum. Mesonotum, with short black spinose hairs above wing and on anterior edge of postalar callus. Scutellum white pilose with a few apical black hairs, with white ventral fringe, with a distinct apical emarginate groove. Squama white, with brownish black border and fringe; plumula short, white; halter pale yellowish white; metasternum white pilose, with a prominent medial spine on each side. *Legs*: Front and middle coxae orangish brown, yellow apically, silvery pollinose, yellowish-white pilose; front and middle trochanters bright yellow, yellow pilose; front and middle femora mainly shiny azure blue, may appear dark reddish brown under some light condition, yellow on base and apex, very sparsely white pollinose dorsally, white pilose except for a few black hairs dorsoapically on middle femur; front and middle 4 tibiae whitish yellow, white pilose; front and middle tarsi with basal 2 tarsomeres pale yellow, and white pilose, with middle tarsomeres brown and black pilose, with apical 2 tarsomeres brownish black and black pilose; hindcoxa azure blue, slightly more reddish medially, white pilose, sparsely white pollinose laterally, hindtrochanter yellow, white pilose, with a small ventral tubercle; hindfemur elongate, with strong black ventral spinose hairs along whole length, dark reddish brown, with strong azure-blue reflections, narrowly yellow on base, white pilose except black pilose on apical $\frac{1}{4}$; hindtibia

arcuate, with a long apicomedial spine, with strong lateral knife-edge like carina on apical $\frac{1}{2}$, with weak basomedial carina, yellow on basal $\frac{1}{4}$, reddish brown on apical $\frac{3}{4}$, mainly white pilose, black pilose ventrally; hindbasitarsus pale yellow, white pilose; 2nd hind tarsomere brownish yellow, white pilose, rest of hind tarsus brownish black, black pilose. *Wing*: Hyaline, with black bristles and setae on base of costa, extensively microtrichose, bare as follows: 1st costal cell, basal $\frac{1}{10}$ or less of 2nd costal cell, anterior to Rs on its basal $\frac{2}{3}$, basal $\frac{1}{2}$ of 2nd basal cell, basal $\frac{1}{4}$ of 2nd basal cell, anterobasal $\frac{1}{4}$ of anal cell.

Abdomen: First tergum shiny azure blue laterally, reddish brown and white pollinose medially, all white pilose; 2nd tergum with two large lateral yellow spots which obliquely extend over lateral margin of tergum, shiny azure blue laterally, with rest dull dark reddish brown, short black pilose except longer white pilose basolaterally and along sides; 3rd tergum with two smaller yellow lateral spots which extend over lateral margins, with rest dull brown with purple reflections, mainly short black pilose, longer white pilose on sides; 4th tergum all shiny azure blue, long white pilose; 1st sternum shiny azure blue, white pilose; 2nd and 3rd sterna weakly sclerotized, orange, white pilose; 4th sternum purplish blue, sparsely gray pollinose, white pilose.

Discussion.—The above description is based on the holotype male.

Besides the holotype of *pretiosus* I have seen four additional specimens, the Jamaican material noted above and a single female from Hispaniola (CNC). All this material is quite similar except for some slight differences in color: The Jamaican material is metallic azure blue as is the type but lacks distinct spots on the abdomen, and the single female from Hispaniola is metallic cupreous green on the head and thorax with the abdomen more bluish.

Genus *Sterphus* Philippi

Sterphus Philippi, 1865: 737. Type-species, *autumnalis* Philippi (orig. des.) = *coeruleus* Rondani.

Crepidomyia Shannon, 1926a: 47. Type-species, *tricrepis* Shannon (orig. des.) = *jamaicensis* Gmelin.

References: Thompson, 1972: 153 (descript., synonymy), 1973a (spp. revision).

Sterphus is an exclusively Neotropical group with some 28 known species. One species is known from the West Indies.

Sterphus jamaicensis (Gmelin), NEW COMBINATION

Fig. 187

Syrphus nigrita Fabricius, 1781: 427 (preocc. when placed in *Musca* with

Bibio nigrita Fabricius by Gmelin, 1790). Type-loc.: Jamaica. Type ? Yeats Coll.

Mulio nigrita: Fabricius, 1805: 183.

Chrysotoxum nigrita: Wiedemann, 1830: 88; Johnson, 1894: 276, 1919: 433 (Jamaica); Gowdey, 1926: 79 (Jamaica); Shannon, 1926b: 19 (questions placement in *Chrysotoxum*).

Musca jamaicensis Gmelin, 1790: 2871 (new name for *Syrphus nigrita* Fabricius).

Musca nigrana Turton, 1800: 643 (new name for *Syrphus nigrita* Fabricius).

Crepidomyia tricrepis Shannon, 1926a: 47. Type-loc.: Peru, Rio Charape. Holotype ♂ USNM. NEW SYNONYMY.

Sterphus tricrepis: Thompson, 1973a: 226, Fig. 32 (♂ genitalia) (Cuba, Dominica, Peru, Bolivia; descript., synonymy).

Crepidomyia darlingtoni Hull, 1944a: 40. Type-loc.: Cuba, Eastern Oriente, Mounts north of Imias, 3–4000 ft. Holotype ♂ MCZ. Synonymy by Thompson, 1973: 226.

Crepidomyia genuina of Telford, 1973: 239 (Puerto Rico).

Distribution.—Peru, Bolivia; Cuba*, Jamaica*, Puerto Rico, Lesser Antilles (Dominica*).

The identity of *Syrphus nigrita* Fabricius has been dubious in the past as the above synonymy can attest. A careful review of Fabricius' treatment of this species in light of his methods and the known West Indian syrphid fauna strongly suggests that the name *nigrita* can apply only to the species now known as *Sterphus tricrepis* (Shannon). My reasoning is as follows. First, Fabricius' original description fits *tricrepis* better than any other known West Indian syrphid to the naked eye: *tricrepis* appears totally dark and without markings; the arista is bare; and the wings are dark. Second, Fabricius originally placed his species in *Syrphus* after *Xylota sylvarum* (Linnaeus) and before *Merodon clavipes* (Fabricius). *Sterphus* has an elongate habitus like *Xylota* and thus the placement of the species after *sylvarum* and before the more robust forms like *Merodon clavipes* (and the *Chrysotoxum* species) is logical. Third, the antenna of *Sterphus* is much longer than that of the typical milesiine flies, thus it would be logical to use the word "*elongatis*" to describe them even though they are not as long as those of *Chrysotoxum*. Fourth, Fabricius studied the Yeats Collection while he was in London, but, so far as is known, he did not retain any material from this collection for his own. This last point is further indicated by the fact that Fabricius listed the species as in "Mus. Dom. Yeats" rather than just "Dom. Yeats" (v. Tuxen, 1967: 8–9). Thus Fabricius was able to accurately place the species into his 1775 classification scheme, and, for later revisions (such as the final one of 1805), he had only the reference to his own inadequate description. In 1794 Fabricius added three more species of *Merodon* after *clavipes* and before the *Chrysotoxum* species. *Syrphus ni-*

nigrita was still left between *Xylota sylvarum* and *Merodon* species. In his final work on flies (1805) Fabricius broke up his arrangement of *Syrphus*: *Xylota sylvarum* was moved to *Milesia*; the *Merodon* species to *Merodon*; and *nigrita* along with the *Chrysotoxum*, *Microdon*, *Paragus*, and *Pipizella* species to his new genus *Mulio*. Thus *nigrita* became the first species in the genus *Mulio* followed by two species of *Chrysotoxum*. This is undoubtedly the reason why Wiedemann and subsequent authors placed *nigrita* in *Chrysotoxum*. However, considering the above facts I suspect that Fabricius just placed *nigrita* in *Mulio* because he had no better place for it, and, from looking at all the species Fabricius did place in his *Mulio*, this genus appears to have been merely a collection of the species that did not fit into the other Fabrician syrphid genera. There are no known Neotropical species of *Chrysotoxum* or any *Chrysotoxum* species which would even approach the totally dark appearance of *nigrita*. Therefore I think the placement of *nigrita* in *Chrysotoxum* as done by previous authors is without any foundation and *Sterphus tricrepis* is the only known Antillean species to which the name *nigrita* can be reasonably applied.

The problem of the usage of the Gmelin names is discussed in the introduction. Because the name *nigrita* and *jamaicensis* are both virtually unknown, I have used *jamaicensis* Gmelin, the correct name under the *Règles* (Richmond 1926).

LITERATURE CITED¹⁰

- Aldrich, J. M. 1905. A catalogue of North American Diptera. *Smithson. Misc. Collect.* 46(2): 1-680.
- Austen, E. E. 1893. Descriptions of new species of dipterous insects of the family Syrphidae in the collection of the British Museum, with notes on species described by the late Francis Walker. Part I. Bacchini and Brachyopini. *Proc. Zool. Soc. Lond.* 1893: 132-164, pl. 4-5.
- Bean, J. L. 1949. A study of the male hypopygia of the species of Tubifera (Syrphidae, Diptera) that occur North of Mexico. *Can. Entomol.* 81: 140-152, 21 figs.
- Beatty, H. A. 1944. The insects of St. Croix, V. I. J. Agric. Univ. P.R. 23: 114-172.
- Becker, T. 1902-1903. Aegyptische Dipteren. *Mitt. Zool. Mus. Berl.* 2(2/3): 1-66, 1 pl. [1902]; 67-195, 4 pls. [1903].
- Becker, T., M. Bezzi, K. Kertész, and P. Stein, eds. 1907. Katalog der paläarktischen Dipteren. Vol. 3, 828 pp. Budapest.
- Bezzi, M. 1908. Nomenklatorisches über Dipteren. III-IV. *Wien. Entomol. Ztg.* 27: 74-84, 291-295.
- Bezzi, M. and P. Stein. 1907. Cyclorrapha Aschiza. Cyclorrapha Schizophora: Schizometopa, pp. 1-189; 190-749. In Becker, T., M. Bezzi, K. Kertész, and P. Stein, eds., Katalog der paläarktischen Dipteren, Vol. 3, 828 pp. Budapest.
- Bigot, J. M. F. 1857. Dipteros, pp. 328-349 [pl. 20 in vol. 8]. In Sagra, R. de la, *Historia física, política y natural de la Isla Cuba*. Vol. 7, 371 pp. Paris, "1856."

¹⁰ More detailed synonymies and bibliography for the Neotropical Syrphidae can be found in Thompson et al. (1976).

- . 1883. Diptères nouveaux ou peu connus; 22^e partie (1), XXXII. Syrphidi (2^e partie), Espèces nouvelles, no. 1^{er}. Ann. Soc. Entomol. Fr. (6)3: 315–356.
- . 1884. Diptères nouveaux ou peu connus. 24^e partie, XXXII: Syrphidi (2^e partie). Espèces nouvelles, no. III. Ann. Soc. Entomol. Fr. (6)4: 73–116.
- Boyes, J. W., J. M. van Brink, and B. C. Boyes. 1971. Chromosomes of Syrphinae (Diptera: Syrphidae). Misc. Publ. Genet. Soc. Can., 158 pp., 39 pls.
- Carrera, M. and K. Lenko. 1958. Descrição de duas espécies novas de *Mixogaster* (Diptera, Syrphidae) e observações sôbre o inquilinismo de uma delas em ninhos de *Iridomyrmex humilis*, a "formiga argentina." Stud. Entomol. 1: 465–486, 17 figs.
- Cockerell, T. D. A. 1892. A first contribution to the Entomology of Bath, Jamaica. J. Inst. Jam. 1: 71–74.
- . 1893. Additions to the fauna and flora of Jamaica. J. Inst. Jam. 1(6): 256–262.
- . 1894. A supplementary note to Mr. Johnson's list of Jamaican Diptera. Proc. Acad. Nat. Sci. Phila. 1894: 419–420.
- Collin, J. E. 1952. On the subdivisions of the genus *Pipizella* Rnd., and an additional British species (Diptera, Syrphidae). J. Soc. Br. Entomol. 4: 85–88, 3 figs.
- Coquillett, D. W. 1900. Report on a collection of Dipterous Insects from Puerto Rico. Proc. U.S. Natl. Mus. 22: 249–270.
- . 1910. The type-species of the North American genera of Diptera. Proc. U.S. Natl. Mus. 37: 499–647.
- Cotton, R. T. 1918. Insects attacking vegetables in Porto Rico. J. Dep. Agric. P.R. 2: 265–317, 67 figs.
- Curran, C. H. 1921. Revision of the *Pipiza* group of the family Syrphidae (Flower-Flies) from north of Mexico. Proc. Calif. Acad. Sci. (4)11: 345–393, 30 figs.
- . 1924. Notes on the genus *Pipizella* Rondani, with descriptions of new species (Diptera, Syrphidae). Trans. Am. Entomol. Soc. 49: 339–345.
- . 1925. Some syrphid synonymy, (Diptera). Can. Entomol. 57: 307.
- . 1926a. Partial synopsis of American species of *Volucella* with notes on Wiedemann's types. Ann. Entomol. Soc. Am. 29: 50–66.
- . 1926b. New Diptera from Jamaica, pp. 102–114. In Gowdey, C. C., Catalogus Insectorum Jamaicensis. Appendix. Entomol. Bull., Jam. Dep. Agric. 4(1/2): 1–114.
- . 1927. New Neotropical and Oriental Diptera in the American Museum of Natural History. Am. Mus. Novit. 245, 9 pp.
- . 1928a. Records and descriptions of Diptera mostly from Jamaica, pp. 29–45. In Gowdey, C. C., Catalogus Insectorum Jamaicensis. Appendix. Entomol. Bull., Jam. Dep. Agric. 4(3) 1–45.
- . 1928b. Insects of Porto Rico and the Virgin Islands. Diptera or Two-winged Flies, pp. 1–118. In New York Acad. Sci., Sci. Surv. Porto Rico and Virgin Is., Vol. 11, pt. 1.
- . 1929. New Syrphidae and Tachinidae. Ann. Entomol. Soc. Am. 22: 489–510.
- . 1930a. New species of Diptera belonging to the genus *Baccha* Fabricius (Syrphidae). Am. Mus. Novit. 403, 16 pp.
- . 1930b. New Diptera belonging to the genus *Mesogramma* Loew (Syrphidae). Am. Mus. Novit. 405, 14 pp., 3 figs.
- . 1930c. New species of Eristalinae with notes (Syrphidae, Diptera). Am. Mus. Novit. 411, 27 pp.
- . 1930d. New species of Volucellinae from America (Syrphidae, Diptera). Am. Mus. Novit. 413, 23 pp., 1 fig.
- . 1930e. New Syrphidae from Central America and the West Indies. Am. Mus. Novit. 416, 11 pp.
- . 1932. New American Syrphidae (Diptera), with notes. Am. Mus. Novit. 519, 9 pp.
- . 1934. The Diptera of Kartabo, Bartica District, British Guiana. Bull. Am. Mus. Nat. Hist. 66: 287–532, 54 figs., 1 map.

- . 1936a. Three new species of *Meromacrus* (Diptera, Syrphidae). *Am. Mus. Novit.* 834, 5 pp.
- . 1936b. New Neotropical Syrphidae (Diptera). *Am. Mus. Novit.* 882, 17 pp.
- . 1939a. Synopsis of the American species of *Volucella* (Syrphidae: Diptera). Part I.—Table of species. *Am. Mus. Novit.* 1027, 7 pp.
- . 1939b. Synopsis of the American species of *Volucella* (Syrphidae; Diptera). Part III.—Descriptions of new species. *Am. Mus. Novit.* 1028, 17 pp. [While both part I and II of this paper were published on the same day, and part I was published in earlier numerical number of this serial, I consider that the names were first validated in part II for pragmatic purposes, i.e., it includes type designations, along with full descriptions and type-locality information.]
- . 1939c. New Neotropical *Baccha* Fabricius (Syrphidae: Diptera). *Am. Mus. Novit.* 1041, 12 pp.
- . 1939d. Syrphidae (Diptera), Vol. 2, pp. 173–175. In *Résultats scientifiques des croisières du Navire-École Belge "Mercator."* *Mém. Mus. R. Hist. Nat. Belg.* 2(15).
- . 1941. New American Syrphidae. *Bull. Mus. Nat. Hist.* 78: 243–304.
- . 1953. Notes and descriptions of some Mydidae and Syrphidae (Diptera). *Am. Mus. Novit.* 1645, 15 pp.
- Curran, C. H. and C. L. Fluke. 1926. Revision of the Nearctic species of *Helophilus* and allied genera. *Trans. Wis. Acad. Sci. Arts Lett.* 22: 207–281, 3 pls.
- Curtis, J. 1824–1834. *British Entomology: Being illustrations and descriptions of the genera of insects found in Great Britain and Ireland.* Vol. 1, pls. 1–50 (1824); Vol. 2, pls. 51–98 (1825); Vol. 3, pls. 99–146 (1826); Vol. 4, pls. 147–194 (1827); Vol. 5, pls. 195–241 (1828); Vol. 6, pls. 242–289 (1829); Vol. 7, pls. 290–337 (1830); Vol. 8, pls. 338–383 (1831); Vol. 9, pls. 384–433 (1832); Vol. 10, pls. 434–481 (1833); Vol. 11, pls. 482–529 (1834). London, "1823–1840."
- Doesburg, P. H. van. 1970. Records of Syrphidae (Diptera) from the Lesser Antilles. *Stud. Fauna Curacao* 34: 89–101.
- Drewry, G. E. 1970. A list of insects from El Verde, Puerto Rico, pp. E-129–E-150, chap. E-10. In Odum, H. T. and R. F. Pigeon, *A Tropical Rain Forest.* 1563 pp., U.S. Atomic Energy Comm. (q.v.).
- Drury, D. 1770–1773. *Illustrations of Natural History.* Wherein are exhibited upwards of 240 figures of exotic insects, according to their different genera. [Vol. 1], 130 pp., 4 figs., 50 pls. [1770]; Vol. 2, 90 pp., 50 pls., and index to Vols. 1–2 (4 unnumbered pages). London.
- Enderlein, G. 1938. Beiträge zur Kenntnis der Syrphiden. *Sitzber. Gesell. Naturf. Freunde Berlin* 1937: 192–237, 1 fig.
- Fabricius, J. G. 1775. *Systema entomologiae, sistens insectorum classes, ordines, genera, species adiectis synonymis, locis, descriptionibus, observationibus.* 832 pp. Flenburgii et Lipsiae [=Flensburg and Leipzig].
- . 1781. *Species insectorum exhibentes eorum differentiae specificas, synonymis, auctorum, loca natalia, metamorphosin.* Vol. 2, 517 pp. Hamburgi et Kilonii [=Hamburg and Kiel].
- . 1787. *Mantissa insectorum sistens species nuper detectas.* Vol. 2, 382 pp. Hafniae [=Copenhagen].
- . 1794. *Entomologia systematica emendata et aucta.* Vol. 4, 472 pp. Hafniae [=Copenhagen].
- . 1798. *Supplementum entomologiae systematicae.* 572 pp. Hafniae [=Copenhagen].
- . 1799. *Index alphabeticus in J. C. Fabricii Supplementum Entomologiae Systematicae, Ordines, Genera et Species continens.* 53 pp. Hafniae [=Copenhagen].
- . 1805. *Systema antliatorum secundum ordines, genera, species.* 373 pp., + 30 pp. (index) Brunsvigae [=Brunswick].

- Fluke, C. L. 1936. New Syrphidae (Diptera) from Brazil and Cuba. *J. Kans. Entomol. Soc.* 9: 59-65, 7 figs.
- . 1937. New South American Syrphidae (Diptera). *Am. Mus. Novit.* 941, 14 pp., 15 figs.
- . 1942. Revision of the Neotropical Syrphini related to *Syrphus*. (Diptera, Syrphidae). *Am. Mus. Novit.* 1201, 24 pp., 51 figs.
- . 1945. The Melanostomini of the Neotropical Region (Diptera: Syrphidae). *Am. Mus. Novit.* 1272, 29 pp., 59 figs.
- . 1950a. The male genitalia of *Syrphus*, *Epistrophe* and related genera (Diptera, Syrphidae). *Trans. Wis. Acad. Sci. Arts Lett.* 40: 115-148, 10 pls.
- . 1950b. Some new tropical syrphid flies with notes on others. *Acta Zool. Lilloana* 9: 439-454, 21 figs.
- . 1954. Two new North American species of Syrphidae, with notes on *Syrphus* (Diptera). *Am. Mus. Novit.* 1690, 10 pp., 20 figs.
- . 1956-1957. Catalogue of the family Syrphidae in the Neotropical Region. *Rev. Bras. Entomol.* 6: 193-268 (1956); 7: 1-181 (1957).
- . 1958. A study of the male genitalia of the Melanostomini (Diptera-Syrphidae). *Trans. Wis. Acad. Sci. Arts Lett.* 46: 261-279, 6 pls. (1957).
- Giglio-Tos, E. 1892-1893. Ditteri del Messico. Parte I. Stratiomyidae-Syrphidae. 72 pp., 1 pl. (1892). Parte II. Syrphidae-Conopidae-Pipunculidae. 80 pp., 1 pl. (1893). Torino.
- Girschner, E. 1897. Über die Postalar-Membran (Schuppchen, Squamulae) der Dipteren. *Illus. Wochenschr. Entomol.* 2: 534-539, 553-559, 567-571, 586-589, 603-607, 641-645, 666-670, 6 pls.
- Gmelin, J. F. [1790]. *Caroli a Linné, Systema naturae per regna tria naturae, . . .* Ed. 13. Vol. 1: Regnum Animale, Pt. 5, pp. 2225-3020. Lipsiae [=Leipzig].
- Goot, V. S. van der. 1964. Fluke's catalogue of Neotropical Syrphidae (Insecta, Diptera), a critical study with an appendix on new names in Syrphidae. *Beaufortia* 10(127): 212-221.
- Gowdey, G. C. 1926. *Catalogus Insectorum Jamaicensis*. *Entomol. Bull., Jam. Dep. Agric.* 4(1): xiv + 114 pp.; 4(2): ii + 10 pp.
- . 1928. *Catalogus Insectorum Jamaicensis*. *Entomol. Bull., Jam. Dep. Agric.* 4(3): iii + 45 pp.
- Gundlach, J. 1887. *Apuntes para la Fauna Puerto-Riquena. Sexta Parte. VIII. Insectos. Orden Dipteros*. *An. Soc. Esp. Hist. Nat., Madrid* 16: 174-199.
- Harbach, R. E. 1974. A new Neotropical syrphid fly, *Mesograpta apegensis* (Diptera: Syrphidae). *Proc. Entomol. Soc. Wash.* 76: 31-34, 6 figs.
- Hine, J. S. 1914. Diptera of Middle America. *Ohio Naturalist* 14: 333-343.
- . 1924. The North American species of the genus *Meromacrus* with one new species. (Diptera, Syrphidae). *Bull. Brooklyn Entomol. Soc.* 19: 20-23.
- Horn, W. and I. Kahle. 1935-1937. Über entomologische Sammlungen, Entomologen und Entomo-Museologie (Ein Beitrag zur Geschichte der Entomologie). *Ent. Beihefte* 2: 1-160, pls. 1-16 [1935]; 3: 161-296, pls. 17-26 [1936]; 4: 297-536, pls. 27-38, i-vi [1937].
- Howard, R. A. 1973. The Vegetation of the Antilles, pp. 1-38. In Graham, A., *Vegetation and Vegetational History of Northern Latin America*, xiii + 393 pp., 91 illustr., 53 tables. Amsterdam.
- Hull, F. M. 1924. *Milesia* in North America (Dipt.; Syrphidae). *Entomol. News* 35: 280-282.
- . 1925. A review of the genus *Eristalis* Latreille in North America. *Ohio J. Sci.* 25: 11-43, 2 pls.; 285-310, 2 pls.
- . 1937. New species of exotic syrphid flies. *Psyche* (Camb. Mass.) 44: 12-32, pl. 2.
- . 1941a. Descriptions of some new species of Syrphidae. *Psyche* (Camb. Mass.) 48: 149-165, 11 figs.

- . 1941b. Some new species of Syrphidae from Florida, Cuba and Brazil (Diptera). Entomol. News 52: 278–283.
- . 1942a. Some new species of *Baccha* and *Mesogramma* (Dipt. Syrphidae). Rev. Entomol. (Rio de J.) 13: 44–49.
- . 1942b. Some flies of the genus *Mesogramma*. Proc. New England Zool. Club 20: 17–24.
- . 1942c. The flies of the genus *Meromacrus* (Syrphidae). Am. Mus. Novit. 1200, 11 pp., 13 figs.
- . [1943a]. New species of Syrphidae from the Neotropical Region. Psyche (Camb. Mass.) 49: 84–107 (1942). (This issue was probably published early in 1943, not 1942. The copy in the Smithsonian Institution Library is marked as received 24 February 1943.)
- . 1943b. The genus *Mesogramma*. Entomol. Am. (n.s.) 23: 1–41, 84 figs.
- . 1943c. Some notes upon the types of North and South American syrphid flies in the British Museum of Natural History. Proc. Entomol. Soc. Wash. 45: 9–10.
- . 1943d. The New World species of the genus *Baccha*. Entomol. Am. (n.s.) 23: 42–99, 2 + 95 figs.
- . 1943e. Some flies of the genus *Volucella* in the British Museum (Natural History). Ann. Mag. Nat. Hist. (11) 10: 18–40.
- . 1944a. Studies on syrphid flies in the Museum of Comparative Zoology. Psyche (Camb. Mass.) 51: 22–45.
- . 1944b. Additional species of the genus *Baccha* from the New World. Bull. Brooklyn Entomol. Soc. 39: 56–64.
- . 1945. Some undescribed syrphid flies. Proc. New England Zool. Club 23: 71–78.
- . 1946a. The genus *Quichuana* Knab. Am. Mus. Novit. 1317, 17 pp., 28 figs.
- . 1946b. The genus *Lepidostola* Mik. Am. Mus. Novit. 1326, 15 pp., 36 figs.
- . 1947. More flies of the genus *Baccha* (Dipt. Syrphidae). Rev. Entomol. (Rio de J.) 18: 395–410.
- . 1948. Some Neotropical species of syrphids. Entomol. News 59: 1–12.
- . 1949a. The genus *Baccha* from the New World. Entomol. Am. (n.s.) 27: 89–291, 393 figs. (1947).
- . 1949b. The morphology and inter-relationship of the genera of syrphid flies, recent and fossil. Trans. Zool. Soc. London 26 (4): 257–408, 25 figs.
- . 1951. New species of *Mesogramma* (Diptera, Syrphidae). Am. Mus. Novit. 1480, 22 pp.
- . 1954. The genus *Mixogaster* (Diptera, Syrphidae). Am. Mus. Novit. 1652, 28 pp., 32 figs.
- Johnson, C. W. 1894. List of the Diptera of Jamaica with descriptions of new species. Proc. Acad. Nat. Sci. Phila. 1894: 271–281.
- . 1908. The Diptera of the Bahamas with notes and descriptions. Psyche (Camb. Mass.) 15: 69–80.
- . 1919. A revised list of the Diptera of Jamaica. Bull. Am. Mus. Nat. Hist. 41: 421–449.
- Jones, T. H. 1915. Aphides or Plant-lice attacking Sugar-Cane in Puerto Rico. Bull., Board Commissioners Agric., P.R. 11: 1–19, pl. 2.
- Kanervo, E. 1938. Zur Systematik und Phylogenie der westpaläarktischen *Eristalis*-Arten (Dipt. Syrphidae) mit einer Revision derjenigen Finnlands. Ann. Univ. Turku. (A) 6(4), 54 pp., 7 abb.
- Kertész, K. 1910. Catalogus dipterorum hucusque descriptorum. Vol. 7, 470 pp. Lipsiae, Budapestini [=Leipzig, Budapest].
- Knab, F. 1913. Some Neotropical Syrphidae. Insec. Insc. Menstr. 1: 13–15.

- . 1914. Two North American Syrphidae. *Insec. Insc. Menstr.* 2: 151–153.
- . 1916a. Critical notes on Syrphidae. *Insec. Insc. Menstr.* 4: 91–95.
- . 1916b. Further notes on Syrphidae. *Insec. Insc. Menstr.* 4: 133–135.
- . 1917. On some North American species of *Microdon* [Diptera: Syrphidae]. *Proc. Biol. Soc. Wash.* 30: 133–144.
- Latreille, P. A. 1804. Tableau méthodique des Insectes, pp. 129–200. *In* Société de Naturalistes et d'Agriculteurs; Nouveau dictionnaire d'histoire naturelle, appliqué aux arts, principalement à l'agriculture et à l'économie rurale et domestique. Vol. 24 [sect. 3]: Tableaux méthodiques d'histoire naturelle, 238 pp., 5 pls. Paris.
- Latreille, P. A., A. L. M. Lepeletier, J. G. A. Serville, and F. E. Guérin-Méneville. 1825–[1828]. Entomologie, ou histoire naturelle des Crustacés, des Arachnides et des Insectes. Vol. 10, pp. 1–344 (=livr. 96), 1825; pp. 345–833 (=livr. 100), [1828]. *In* Société de Gens de Lettres, de Savans et d'Artistes; Encyclopédie méthodique, Histoire naturelle. Paris.
- Lepeletier, A. L. M. and J. G. A. Serville. [1828]. (See Latreille et al., 1825–[1828].)
- Linnaeus, C. 1758. *Systema naturae per regna tria naturae*. Ed. 10, Vol. 1, 824 pp. Holmiae [=Stockholm].
- Loew, H. 1853. *Ceria. Fabr.*, pp. 1–20. *In* Loew, H., *Neue Beiträge zur Kenntniss der Diptera. Erster Beitrag.* 38 pp. Berlin.
- . 1861. *Diptera aliquot in insula Cuba collecta.* *Wien. Entomol. Monatschr.* 5: 33–43.
- . 1863. *Diptera Americae septentrionalis indigena. Centuria tertia.* *Berl. Entomol. Z.* 7: 1–55.
- . 1864. *Diptera Americae septentrionalis indigena. Centuria quinta.* *Berl. Entomol. Z.* 8: 49–104.
- . 1866a. *Diptera Americae septentrionalis indigena. Centuria sexta.* *Berl. Entomol. Z.* 9: 127–186 (1865).
- . 1866b. *Diptera Americae septentrionalis indigena. Centuria septima.* *Berl. Entomol. Z.* 10: 1–54.
- . 1869. *Diptera Americae septentrionalis indigena. Centuria octava.* *Berl. Entomol. Z.* 13: 1–52.
- . 1872. *Diptera Americae septentrionalis indigena. Centuria decima. Catalogus generum et specierum, quae insunt in dipterorum americanorum centuriis.* *Berl. Entomol. Z.* 16: 49–124.
- Lundbeck, W. 1916. *Diptera Danica. Genera and species of flies hitherto found in Denmark. Part V. Lonchopteridae, Syrphidae*, 603 pp., 202 figs. Copenhagen.
- Macquart, J. 1829. *Insectes Diptères du nord de la France. Syrphies.* *Mém. Soc. R. Sci. Agric. Arts, Lille 1827/1828:* 149–371, 4 pls.
- . 1834. *Histoire naturelle des Insectes. Diptères, Tome premier. Diptera, Vol. 1.* 578 pp., 12 pls. *In* [Roret, N. E., ed.], (Collection des suites à Buffon). Paris.
- . 1835. *Histoire naturelle des Insectes. Diptères, Tome deuxième. Diptera, Vol. 2,* 703 pp., 12 pls. *In* [Roret, N. E., ed.], (Collection des suites à Buffon). Paris.
- . 1842. *Diptères exotiques nouveaux ou peu connus.* *Mém. Soc. R. Sci. Agric. Arts, Lille 1841:* 65–200, 22 pls.
- . 1846. *Diptères exotiques nouveaux ou peu connus. Supplément.* *Mém. Soc. R. Sci. Agric. Arts, Lille 1844:* 133–364, 20 pls.
- . 1850. *Diptères exotiques nouveaux ou peu connus. 4^e supplément [part].* *Mém. Soc. R. Sci. Agric. Arts, Lille 1849:* 309–479, pls. 1–14.
- . 1855. *Diptères exotiques nouveaux ou peu connus. 5^e supplément.* *Mém. Soc. Imp. Sci. Agric. Arts, Lille 1854:* 25–156, 7 pls.
- Maldonado Capriles, J. and C. A. Navarro. 1967. Additions and corrections to Wolcott's "Insects of Puerto Rico." *Caribb. J. Sci.* 7: 45–64.