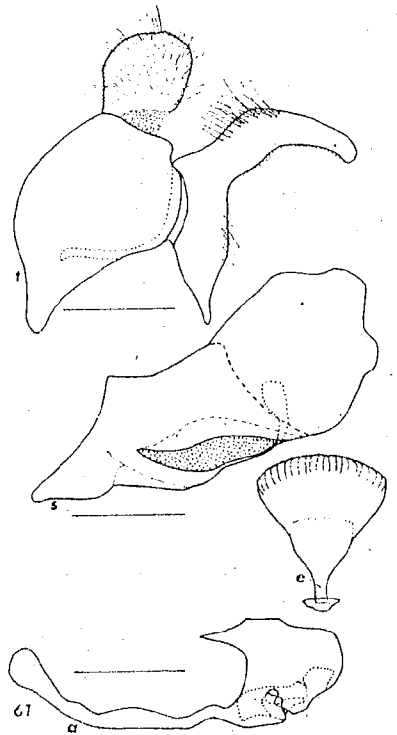


loped; post-metacoxal bridge always incomplete; metathoracic pleurae bare; metathoracic spiracle usually enlarged, in some species larger than third antennal segment; plumula ranging from absent to elongate; scutellum with a ventral pile fringe, with or without a distinct emarginate apical rim. Legs: hind trochanters frequently with spurs; hind femora usually slightly swollen, straight ventrally, with two rows of ventral spines, frequently with ventral spines very strong; hind tibiae frequently with apical spurs. Wings: marginal cell open; apical cell closed and petiolate; anterior crossvein at or beyond the middle of the discal cell, always greatly oblique; anterior margin of wings may be dark.

Abdomen: usually elongate, rarely petiolate; *batesi* with a long petiole; *coarctata* with a short petiole; constriction always on second segment.

Material examined: 10 (10); *auricaudata* (Williston)* (LTs), *batesi* (Shannon)*, *coarctata* (Wiedemann)*, *coeruleus* Rondani*, *darlingtoni* (Hull)* (HT), *genuina* (Williston)*, *plagiata* (Wiedemann)* and *tincta* (Fluke)* (also about half dozen new species as mentioned below).



61, male genitalia of *Macrometopia atra* Philippi. n, aedeagus and apodeme; e, ejaculatory apodeme; s, sternum 9; t, tergum 9; all lateral view.

Discussion: *Sterphus* can be separated easily from most milesine syrphids by its carinate face. Only *Tropidia*, *Nepenthosyrphus*, and *Cerogaster*, have distinctly carinate faces and *Senogaster*, *Syritta*, *Neplas*, and *Macrometopia* have weakly subcarinate faces, but all of these genera except for *Cerogaster* and *Macrometopia* have pilose metasterna. *Sterphus* can be distinguished from *Cerogaster* and *Macrometopia* to which it is clearly closely related by its: 1) bare face, 2) bare eyes, 3) lack of spines on occiput and anterior edge of mesonotum and 4) incomplete post-metacoxal bridge. *Sterphus*, *Cerogaster*, and *Macrometopia* all have the metasterna bare and are the only genera except *Neplas* (pilose metasterna) of the *Xylota* group with carinate faces or subcarinate faces. These similarities suggest that *Sterphus*, *Cerogaster* and *Macrometopia* had a single common ancestral species and these genera represent just one emigration into South America from the north.

Crepidomyia, *Senoceria* and *Tatuomyia* have all been synonymized because the characters on which they are based have been found to intergrade.

Crepidomyia was erected for the species with 1) strong straight facial keels, 2) black faces, 3) elongate third antennal segments, and 4) hind trochanters spurred in the males. *Tatuomyia* differs from *Crepidomyia* only in that it has 1) constricted abdomen, and 2) lacks spurs on the hind trochanter of the males. *Tatuomyia coarctata* was later split off from *Tatuomyia* as *Senoceria* because it has a short abdominal petiole instead of a long petiole. *Sterphus* was originally described for a Chilean species with: 1) elongate abdomen; 2) orange face with weak medial keel; 3) oval third antennal segment; and 4) hind trochanter of male spurred. During the course of this revision I have found a number of new species which are intermediate between all these groups. One new species (in American Museum of Natural History) is like a typical *Crepidomyia* but has no spurs on the trochanters. *Crepidomyia tinctoria* Fluke has its antennae and face like a typical *Crepidomyia* but has a slightly constricted abdomen and no spurs on the trochanters. Thus there are species that display the complete transition of the characters of *Crepidomyia*, *Senoceria* and *Tatuomyia*: from elongate abdomen and spurred males (*Crepidomyia*) to elongate abdomen and non spurred males (new species), to slightly constricted abdomen and non-spurred males (*C. tinctoria*), to constricted abdomen but short petiole (*Senoceria*), to constricted abdomen and long petiole (*Tatuomyia*). Two other new species (Museu de Zoologia, Universidade de São Paulo, Brazil) bridge the gap between *Crepidomyia* and *Sterphus*. One is a typical *Crepidomyia* except that it has an oval third antennal segment and a slightly weaker medial facial keel and the other new species is very similar to the first but has a medial keel like *Sterphus* and black and orange face. The genitalic differences between the species are not of generic significance (Thompson, in preparation).

Genus *Neplus* Porter

(Fig. 58)

Planes Rondani, 1863, Arch. Zool. 3:9 (preoccupied, Bowdich 1825; Saussure 1862). Type-species, *Xylota vagans* Wiedemann, 1830 (original designation).

Neplus Porter, 1927, Rev. Chil. Hist. Nat. 31:96 (new name for *Planes* Rondani).

Head: slightly higher than broad; face bare, narrow, subcarinate, with a weak medial keel and two short lateral keels, slightly concave in profile, completely pollinose; cheeks linear; facial grooves short, extending along lower third of eyes; facial stripes indistinct; frontal prominence low, slightly above middle of head; front of male short, as long as or slightly longer than eye contiguity; vertical triangle long, more than three times as long as broad, more than twice as long as eye contiguity; front of female narrow, slightly less than twice as long as broad at antenna, with convergent sides above; ocellar triangle always distinctly before posterior margin of eyes. Eyes bare, narrowly holoptic in male. Antennae elongate, as long as face or slightly longer; third segment elliptical or elongate, always twice as long as broad or longer; arista bare, longer than antenna or face.

Thorax: longer than broad, with very short pile; meso-anepimera with posterior portion bare; meropleurae bare; metathoracic pleurae bare; metasterna pilose and strongly developed; postmetacoxal bridge incomplete; pleurotergite with one or more distinct carinate ridges; plumula absent; metathoracic spiracle small; scutellum with ventral pile fringe and apical emarginate rim. Legs: hind femora short, greatly and evenly swollen, with some long ventral bristles as well as two rows of numerous short ventral spines; hind tibiae strongly arcuate, with ventral side forming a long knife edge, ending with short spur. Wings: marginal cell open; apical cell petiolate; anterior crossvein at middle of discal cell and oblique.

Abdomen: elongate and frequently constricted near base; sternites extremely long and narrow.

Material examined: 28(26); *armatipes* Curran *, *frontalis* Curran *, and more than a dozen undetermined species.

Discussion: *Neplus* is distinguished from the other milesine syrphid genera by the following combination of characters: 1) pilose metasterna; 2) greatly swollen hind femora; 3) strongly arcuate hind tibiae; 4) carinate pleurotergites and 5) scutellum with ventral fringe. *Neplus* is frequently considered a synonym of the Holarctic genus *Xylota*, s. l., but *Neplus* is readily separated from *Xylota* by the following characters, in addition to characters 2, 3 and 4 above: 1) subcarinate faces; 2)

very narrow and long sternites; 3) long and narrow vertical triangle in male. I have not seen any *Neplas* species from outside the Neotropical Region although two Nearctic species have been described from Sierra Madre just north of the Isthmus of Tehuantepec (*willistoni* Shannon and *pauvilla* Williston). Curran (1941) provides a key to 12 of the 28 species of *Neplas*.

Genus *Odyneromyia* Shannon and Aubertin

(Fig. 62)

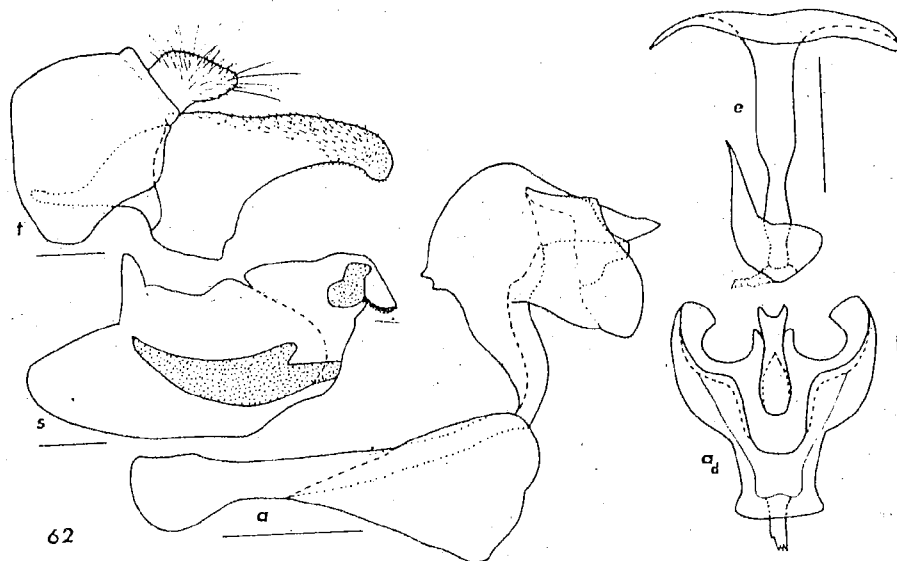
Odyneromyia Shannon and Aubertin, 1933, Dipt. Patagonia S. Chile 6:156. Type-species, *Doros odyneroides* Philippi, 1865 (original designation).

Head: higher than long; face bare, completely pollinose; face in male with a low medial tubercle about half way between oral margin and antennae, slightly concave above tubercle, straight below tubercle; face in female concave; cheeks linear, longer than broad; facial grooves short, extending along lower one-fourth of eye margins; facial stripes indistinct; frontal prominence low, slightly above middle of head; front of male short, slightly longer than vertical triangle, about three times as long as eye contiguity; vertical triangle short, slightly longer than broad at occiput; front of female broad, slightly longer than broad at antennae, with sides convergent above, slightly longer than face; ocellar triangle distinctly before posterior margin of eyes. Eyes bare, narrowly dichoptic in male. Antennae short, about one-half as long as face; third segment orbicular; arista about one and one-half times as long as antenna.

Thorax: about as long as broad, without distinct light colored pollinose markings on mesonotum, with short pile; meso-katepisterna with separate dorsal and ventral pile patches; meso-anepimera with posterior portion bare; meropleurae bare; metathoracic pleurae bare; metasterna underdeveloped and bare; postmetacoxal bridge incomplete; metathoracic spiracle small; plumulae very short but distinctly present; scutellum with ventral pile fringe, without apical emarginate rim. Legs: simple except hind femora slightly swollen apically. Wings: with anterior half orange and brown; marginal cell open; apical cell closed at costa, without a petiole; anterior crossvein at or slightly before middle of discal cell, oblique.

Abdomen: petiolate, constricted on base of second segment, narrowest at base of second segment, with petiole short and about one-half length of second segment.

Material examined: 2(2); *odyneroides* (Philippi)* and *valdiviformis* Shannon and Aubertin*.



62, male genitalia of *Odyneromyia odyneroides* (Philippi). a, acedeagus and apodeme; e, ejaculatory apodeme; s, sternum 9; t, tergum 9; all lateral view, except a_d, dorsal view.

Discussion: *Odyneromyia* can be separated from *Valdivia* by the following characters: 1) apical cell nonpetiolate; 2) anterior crossvein at or beyond middle of discal cell; 3) eyes holoptic in males; 4) frontal prominence near the middle of head, not on upper fourth of head; 5) abdomen narrowest at base of second segment, not at middle of second segment; and 6) abdominal petiole short, only about half as long as segments three and four together, not as long as these segments together. *Odyneromyia* and *Valdivia* with their: 1) tuberculate faces, 2) simple legs, 3) bare and underdeveloped metasterna, 4) subscutellar fringes and lack of apical emarginate scutellar rims, and 5) constricted abdomens are definitely sister-groups and form a group distinctly different from all other milésine syrphids. The first four characters are shared by only the Holarctic genus *Temnostoma* which never has a constricted abdomen. *Takaomyia*, a Far East genus belonging to the *Temnostoma* group, has a strongly constricted abdomen but it has a concave face, pilose and developed metasterna.

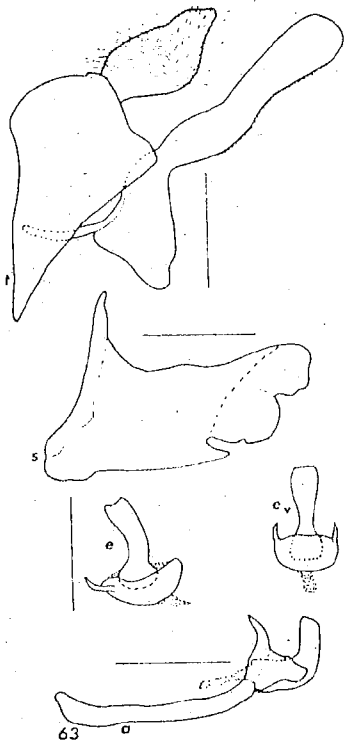
Odyneromyia includes only two species, both known only from the Andes of Chile and Argentina. The descriptive notes provided by Shannon and Aubertin (1933) with their description of *valdiviformis* will aid in distinguishing the two species.

Genus *Valdivia* Shannon

(Fig. 50)

Valdivia Shannon, 1927, Proc. U. S. Nat. Mus. 70 (9) : 31. Type-species, *Valdivia darwini* Shannon, 1927 (original designation).

Head: higher than long; face bare, pollinose broadly on sides; face in male with a low medial tubercle on lower third of face, with shallow concavity above tubercle, straight below tubercle; face in female either concave or tuberculate as in male; cheeks linear, much longer than broad; facial grooves short, extending along lower third of eyes; facial stripes not differentiated; frontal prominence low, on upper fourth of head; front of male short, shorter than vertical triangle; vertical triangle long, about twice as long as broad; front of female narrow, about twice as long as broad at antennae, less than two-thirds as long as face, with sides convergent above ocellar triangle distinctly before posterior margin of eyes. Eyes bare, narrowly dichoptic in male.



63, male genitalia of *Valdivia darwini* Shannon. a, aedeagus and apodeme; e, ejaculatory apodeme; s, sternum 9; t, tergum 9; all lateral view, except e, ventral view.

Antennae short, less than one-half as long as face; third segment orbicular; arista long, about one and one-half times as long as face.

Thorax: about twice as long as broad, with short pile, frequently with lateral borders of mesonotum broadly pollinose; meso-anepisterna with anterior part with a distinct patch of pile in the middle of posterior margin; meso-katepisterna with separate dorsal and ventral pile patches; meso-anepimera with posterior portion bare; meropleurae bare; metathoracic pleurae bare; metasterna bare and underdeveloped; metathoracic spiracle small; postmetacoxal bridge complete in *darwinii*, incomplete in all other species; plumulae elongate; scutellum with ventral pile fringe, without apical emarginate rim. Legs: simple. Wings: marginal cell open; apical cell petiolate, with a distinct petiole about one-half as long as anterior crossvein; anterior crossvein distinctly before middle of discal cell, usually at basal third of discal cell, straight.

Abdomen: strongly constricted in males, in females of almost uniform width; petiole of male almost as long as third and fourth segments combined, as long as second segment, narrowest at middle of second segment.

Material examined: 6(6); *camrasi* Sedman* (HT), *darwinii* Shannon*, *edwardsi* Shannon & Aubertin*, *nigra* Shannon* (HT) and *ruficauda* Shannon* (HT).

Discussion: See discussion under *Odyneromyia* for distinctive characters of *Valdivia*. Only six species of *Valdivia* have been described, all from Chile. Sedman (1965) has provided an up-to-date key to all known species along with figures of the male genitalia of *darwinii* and *camrasi*. Sedman has pointed out that the aedeagi of *darwinii* (type-species) and *camrasi* are quite different and these differences "may necessitate a sub-generic splitting of this interesting genus.". Too little is still known about some of the species in the genus to do this but I should point out some other structural characters that may correlate with genitalic differences: 1) most species (*edwardsi*, *ruficauda*, *nigra* and *camrasi*) have incomplete postmetacoxal bridge, whereas *darwinii* has a complete postmetacoxal bridge; and 2) *darwinii* has a facial tubercle in both sexes, whereas *edwardsi* and *ruficauda*, the only other species of which the female is known, lack the tubercle in the female.

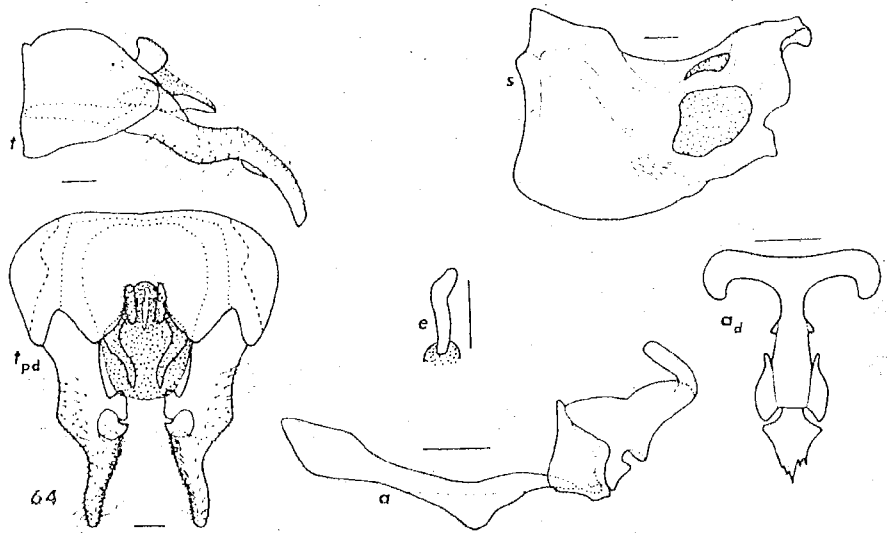
Genus *Aneriophora* Stuardo and Cortés

(Figs. 12, 24, 64)

Eriophora Philippi, 1865, Verh. Zool.-Bot. Ges. Wien 15:736 (preoccupied, Simon 1864). Type-species, *Eriophora aureorufa* Philippi, 1865 (monotypy).

Aneriophora Stuardo and Cortés, 1952, Rev. Chil. Ent. 2:311 (new name for *Eriophora* Philippi).

Head: twice as high as long; face bare, lightly orange pollinose, long, produced downwards, one-half of face below bottom of eyes, slightly concave under antennae, with traces of small medial tubercle, straight below tubercle; cheeks shiny, elongate anteriorly, as long as broad; facial grooves short, extending along basal one-third of eyes; facial stripes indistinct; frontal prominence low, on upper third of head; front of male very short, as long as eye contiguity, only one-half as long as vertical triangle; vertical triangle long, more than twice as long as broad at occiput; front of female broad, about two-thirds as long as antennae as long, slightly more than two-thirds as long as face; ocellar triangle always distinctly before posterior margin of eyes. Eyes bare, holoptic in male. Antennae very short, about one-third as long as face; third segment almost quadrate; arista long, about two and one-half times as long as antenna.



64, male genitalia of *Aneriophora aureorufa* (Philippi). a, aedeagus and apodeme; e, ejaculatory apodeme; s, sternum 9; t, tergum 9; all lateral view, except a_d dorsal view and t_{pd} posterodorsal.

Thorax: as long as broad, mostly orange pollinose except pectus black, with long mesonotal pile; meso-katepisterna with broadly separated dorsal and ventral pile patches; meso-anepimera with posterior portion bare; mero-pleurae bare; metathoracic pleurae bare; metasterna pilose and intermediate in development; postmetacoxal bridge incomplete; metathoracic spiracle medium in size, as large as third antennal segment; plumulae elongate; scutellum with ventral pile fringe and distinct apical emarginate rim. Legs: simple except for hind femora very slightly swollen before apex in males and with only a few ventral spines, hind tibiae with a short broad rounded projection at apex. Wings: with apical third orange brown; marginal cell open;

apical cell petiolate, with petiole longer than humeral crossvein; anterior crossvein at middle of discal cell strongly oblique.

Abdomen: oval; tergites orange with long orange pile; sternite shiny black with black pile.

Material examined: 1(1); *aurcorufa* Philippi*.

Discussion: *Aneriophora* has frequently been considered a synonym or a subgenus of the large almost worldwide genus *Criorhina*. The usual reasons for this synonymy is that the only differences between *Criorhina* and *Aneriophora* are insignificant. *Aneriophora* differs from *Criorhina*, s. l., by the following characters: 1) apical cell with a long petiole; 2) apical and posterior crossvein disjunct, not jointing in a line; and 3) coloration, orange instead of usually black and yellow. Further, an examination of the male genitalia indicates that *Aneriophora* is quite distinctive and not very closely related to *Criorhina* but to *Temnostoma* instead. The aedeagus of *Aneriophora* is one segmented and has fairly well developed lateral and dorsal lobes, whereas the typical *Criorhina* has a two-segmented aedeagus with very reduced lateral lobes. The very distinctive male genitalia of *Aneriophora* suggests that: 1) *Criorhina* on a world-wide basis is probably paraphyletic or polyphyletic; and 2) *Criorhina* and related genera were probably derived from a *Temnostoma-Aneriophora* type of ancestor. In support of the first suggestion, *Deineches*, the only non-Holarctic "supposed" synonym of *Criorhina* I have seen besides *Aneriophora*, has also been found to have radically different genitalia from the typical *Criorhina* and is distinct (see discussion under *Flukea*). *Aneriophora* contains only one species, which is restricted to Chile.

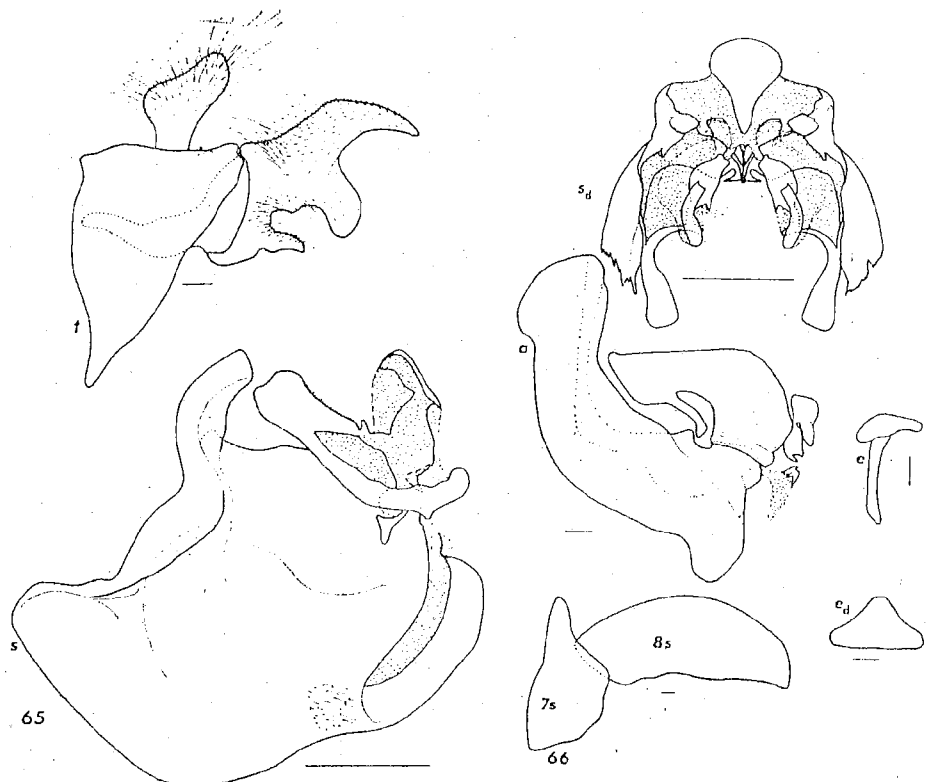
Genus *Flukea* Etcheverry

Flukea Etcheverry, 1966, Publ. Centr. Estud. Ent. 8:1. Type-species, *Flukea vockerothi* Etcheverry, 1966 (monotypy).

Head: higher than long; face bare; pollinose in male, shiny in female, concave in female, in male concave beneath antennae with a distinct medial tubercle and straight beneath tubercle, produced slightly downwards, with about one-third of face below bottoms of eyes. Cheeks narrow, longer than broad; facial grooves short, extending around basal third of eyes; facial stripes distinct, pilose; frontal prominence high, about as high as face is deep, on upper third of head; front of male long, as long as vertical triangle, about twice as long as broad at occiput; front of female broad, as broad as face, almost as broad at antennae as long, with only slightly convergent sides above, three-fourths as broad at ocellar triangle as at antennae; ocellar triangle small, always before posterior margin of eyes. Eyes bare, dichoptic in male, separated in males by one and one-half times

width of ocellar triangle. Antennae short, one-half as long as face; third segment kidney-shaped, twice as broad as long; arista long, twice as long as antenna.

Thorax: longer than broad, with long mesonotal pile; meso-katepisterna with separate dorsal and ventral pile patches; meso-anepimera with posterior portion bare; mero-pleurae bare; metathoracic pleurae bare; metasterna pilose and developed; postmetacoxal bridge incomplete; metathoracic spiracle small; plumula elongate; scutellum with ventral pile fringe and without apical emarginate rim. Legs: hind femora swollen and slightly arcuate, without ventral spines; hind tibiae flattened laterally and arcuate.



Male genitalia of *Flukea vockerothi* Etcheverry (PT). 65, s, sternum 9; t, tergum 9; all lateral view. 66, a, aedeagus and apodeme, lateral view; e, ejaculatory apodeme, lateral view; e_d, same, dorsal view; s_d, posterior half of sternum 9, dorsal view; 7s, 8s, sternum 7 and sternum 8, dorsal view.

Wings: with apical third dark and the rest orange; marginal cell open; apical cell closed at costa and without petiole; anterior crossvein slightly before middle of discal cell.

Abdomen: suboval, distinctly emarginate on segments two through four in males, with emargination indistinct in female.

Material examined: 1(1); *vockerothi* Etcheverry (PTs)*.

Discussion: The two-segmented aedeagus, pilose metasterna, kidney-shaped third antennal segment, tuberculate face in male, etc. all indicate a close relationship between *Flukea* and *Criorhina* and its related genera. *Flukea* and *Aneriophora* are different from all the genera related to *Criorhina* in that the apical and posterior crossveins are not continuous with each other but are disjunctive (Fig. 24) (posterior crossvein ends in fourth vein (m1+2) well before base of apical crossvein and at the base of the apical crossvein there is a distinct m2 spur) whereas in *Criorhina*, *Sphecomylia*, *Merapioidus*, *Deineches* and *Lycastris* (the other genera of the *Criorhina* group) the posterior crossvein ends at the base of the apical crossvein and there is no spur at the base of apical crossvein (Fig. 26).

Flukea is easily separated from *Aneriophora* by its dark coloration as well as by the following characters: 1) dichoptic eyes in male; 2) strongly tuberculate face in male; 3) strongly concave face in female; 4) high frontal prominence; 5) kidney-shaped third antennal segment; 6) absence of emarginate scutellar rim; 7) swollen hind femora; and 8) arcuate hind tibiae.

The genitalia of *Flukea* are very similar to those of the Australian genus *Deineches*. The aedeagi of the two genera are virtually identical, but there are a few minor differences in the superior lobes and surstyli of the two genera. However, none of these genitalic differences appear of any more than species importance. *Flukea* does differ from *Deineches* in a number of characters besides the wing venation as mentioned above, *Flukea* has: 1) bare barrette; 2) no apical emarginate scutellar rim; 3) small metathoracic spiracle; 4) broadly dichoptic eyes in male; 5) bare front in male; and 6) anterior crossvein located before middle of discal cell. *Deineches* was considered by Ferguson (1926) in the most recent revision of the Australian milesine syrphids to be only a synonym of *Criorhina*. Ferguson considered the Australian species of *Criorhina* "to form a fairly homogeneous group," but Hardy (1921) earlier pointed out that *Deineches* had the apical and posterior crossveins continuous, whereas in "*Criorhina*" they are disjunctive. Hardy goes on to say, "It is doubtful if this character is sufficient to justify generic separation." As I mentioned above, only the two Chilean genera, *Flukea* and *Aneriophora*, have the disjunctive crossvein. Hardy's "*Criorhina*" are apparently not the same as the Holarctic *Criorhina* species and may belong to either *Aneriophora* or *Flukea*. Also, one Australian species, *hackeni*, is described as lacking the tubercle in the female, a character found among the criorrhine genera in only *Flukea*. Unfortunately, with the exception of the type-species of *Deineches*, I have been unable to study any of the other Australian "*Criorhina*." For this reason I am forced to leave the questions of interrelationships between the Australian genera related to *Criorhina* and the Chilean ones unsolved.

In summary, *Flukea* and *Deineches* are definitely sister-groups and represent the first known case of trans-antartic relationships among

the syrphids and higher Diptera in general. However, until more is known about the Australian components of this relationship, it is not possible to make any further evaluation.

Genus *Philippimyia* Shannon

(Figs. 65, 66)

Philippimyia Shannon, 1926, Proc. U. S. Nat. Mus. 69 (9):47. Type species, ?*Sterphus cyanocephala* Philippi, 1865 (original designation).

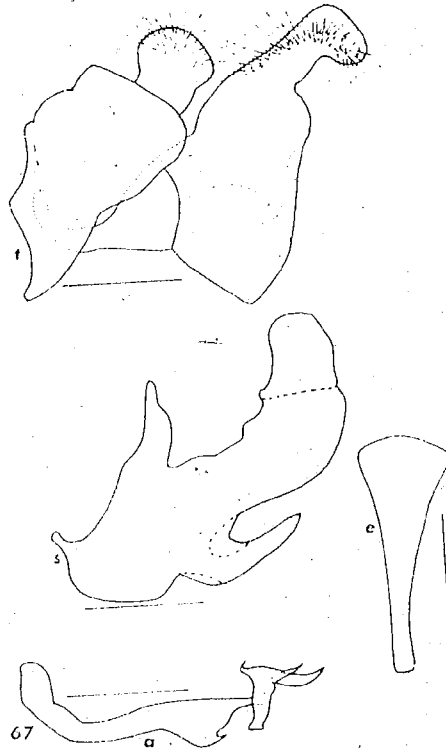
Head: metallic bluish, one-third higher than long; face bare, shiny, not pollinose, obliquely retreating below antennae to just above oral margin, straight just above oral margin; cheeks linear, longer than broad; facial grooves short, extending along lower third of eyes; facial stripes very narrow, pilose and pollinose; frontal prominence high, extending distinctly beyond oral margin, at middle of head; front of male long, about four times as long as eye contiguity, as long as vertical triangle; vertical triangle long, about twice as long as broad at occiput; front of female narrow, about twice as long as broad at antennae, about one-third longer than face, with slightly convergent sides above; ocellar triangle distinctly before posterior margin of eyes. Eyes bare, narrowly holoptic in male. Antennae short, about two-third as long as face; third segment trapezoidal, ventral margin longer than dorsal, apical end oblique; arista long, about one third longer than antenna.

Thorax: as broad as long, metallic bluish, with short pile, without pollinose markings; meso-katepisterna with separate dorsal and ventral pile patches; meso-anepimera with posterior portion bare; meropleurae bare; metathoracic pleurae bare; metasterna bare and intermediate in development; postmetacoxal bridge incomplete; metathoracic spiracle small; plumulae short; scutellum with ventral pile fringe and distinct broad emarginate apical rim. Legs: simple except hind femora slightly swollen. Wings: marginal cell open; apical cell closed just before costa, with a distinct but very short petiole; anterior crossvein slightly beyond middle of discal cell, oblique.

Abdomen: elongate, metallic bluish with short pile.

Material examined: 1(1); *cyanocephala* (Philippi) *.

Discussion: *Philippimyia* is readily separated from most milesine genera by its distinctive face with a strongly protruding frontal prominence. Only the faces of *Stilbosoma* and some species of *Lejota*, *Xylota*, *Blera* and *Somula* may be confused with *Philippimyia*'s face. *Philippimyia* is easily distinguished from all the above genera by the following characters: 1) bare metasterna; 2) simple legs; 3) broadly emarginate scutellar rim; and 4) very short petiole of apical cell. The general habitus of *Philippimyia* is also very distinctive: completely



67, male genitalia of *Philpimyia cyanocephala* (Philippi).
 a, aedeagus and apodeme; e, ejaculatory apodeme; s, sternum
 9; t, tergum 9; all lateral view.

metallic bluish flies with elongate abdomen and smoky wings. *Stilbosoma cyanea* is the only other South American syrphid with this appearance that I know of, and it may be separated by the characters given above. *Philpimyia* contains only one species, which is restricted to Chile.

Genus *Senogaster* Macquart

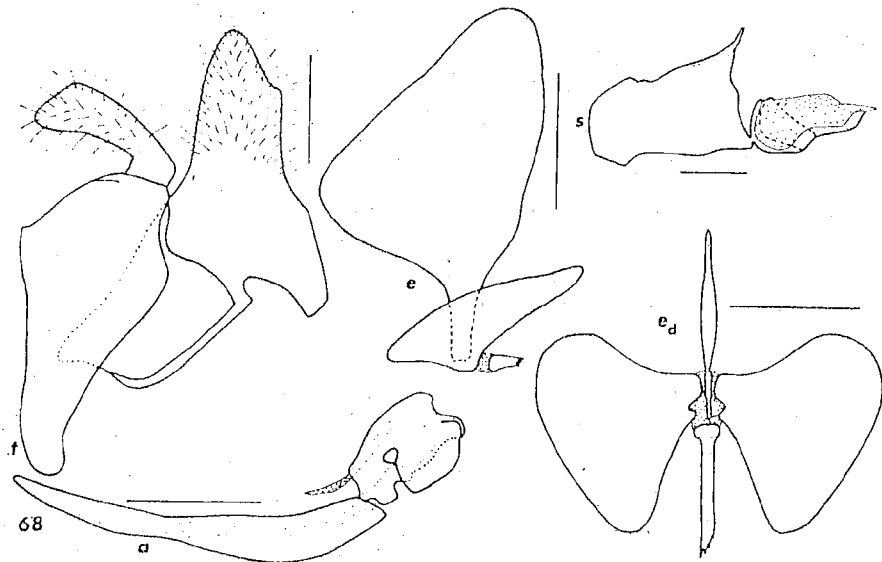
(Fig. 67)

Senogaster Macquart, 1834, Hist. Nat. Ins. Dipt. 1:519. Type-species, *Senogaster coerulescens* Macquart, 1834 (monotypy).

Head: higher than long; face bare, pollinose, concave; cheeks linear, much longer than broad; facial grooves short, extending along lower third of eyes; facial stripes indistinct; frontal prominence low, slightly below middle of head; front of male short, about one-half as long as eye contiguity, less than one-fourth as long as vertical triangle

very long, over four times as long as broad at occiput; front of female very narrow, more than four times as long as broad at antennae, one-third longer than face, with slightly convergent sides above; ocellar triangle distinctly before posterior margin of eyes. Eyes bare, narrowly holoptic in male. Antennae short, about three-fourths as long as face: third segment oval, with apex bluntly rounded, with a basal row of short black spines on inside near arisal base; arista long, longer than face.

Thorax: one-fourth longer than broad, with very short pile and two pairs of pale pollinose longitudinal vittae on mesonotum; mesokatepisterna with separate dorsal and ventral pile patches; meso-ane-pisterna with apical posterior edge raised into a small ridge; meso-ane-pimera with posterior portion pilose on ventral half; meropleurae bare except with anterior part of barrette pilose; metasterna greatly developed and pilose; metathoracic spiracle small; postmetacoxal bridge incomplete; meta-episterna with a distinct patch of pile behind and below spiracle; plumulae very short but distinct; pleurotergite with one large short transverse keel; scutellum without ventral pile fringe and emarginate apical rim. Legs: anterior four legs simple except for strongly developed basal setal patches on both coxae and base of femora; hind coxae with distinct small tubercle on inner sides; hind trochanter in male with tubercle on inner side larger than coxal tubercle, in female without tubercle but with slight swelling instead; hind femora short, greatly swollen, with ventral apical bifid spur on outer side; hind tibiae slightly arcuate, ending with short blunt spur on outside. Wings: marginal cell narrowly open at costa; apical cell distinctly



68, male genitalia of *Senogaster dentipes* (Fabricius). a, aedeagus and apodeme; c, ejaculatory apodeme; s, sternum 9; t, tergum 9; all lateral view, except e_d dorsal view.

closed before meeting costa, with petiole very short and shorter than humeral crossvein; apical and posterior crossveins continuous, without spurs at their bases; anterior crossvein beyond middle of discal cell oblique.

Abdomen: Female abdomen elongate, strongly emarginate on segments three and four, with a pair of strong lateral tubercles and a single low medial swelling on segments three and four, with sternite four swollen medially; male abdomen constricted, with second segment narrowed posteriorly, with third segment cylindrical and forming the petiole, with rest of abdomen club-shaped.

Material examined: 1(1); *dentipes* (Fabricius) *.

Discussion: *Senogaster* is unique among syrphids for a number of reasons: 1) the male abdomen with the petiole formed by the third segment not the second; 2) the female abdomen with two pairs of large dorsal tubercles (The only other syrphid with abdominal tubercles is "*Sphaerophoria*" *quadrituberculata* Bezzi but in this species the tubercles are quite different and are restricted to the male) 3) hind femora with a bifid spur, (*Stilbosoma*, has a bifid hind femoral process but *Stilbosoma*'s process is a large flattened plate-like structure, not a spur). Also, *Senogaster* is one of the few syrphid genera with true hind coxal processes. The only other genera with true hind coxal processes, to my knowledge, are *Neocnemodon* (males only) and *Stilbosoma*.

The similar head shape, lack of subscutellar fringe, presence of pile on meta-episterna, pilose and developed metasterna, swollen hind femora, carinate pleurotergite, etc. are some of the common characters shared by *Syritta* and *Senogaster* and strongly suggest a sister-group relationship despite all of *Senogaster*'s unique characters. *Senogaster* is represented by a single wide-spread Neotropical species, whereas *Syritta* is a large Old World genus absent from the New World until introduced by Man.

Some authors have used Bigot's name *Acrochordonodes* because *Senogaster* is supposedly preoccupied. However, it is Williston's unjustified emendation, *Stenogaster*, that is preoccupied, not Macquart's original spelling, *Senogaster*. Thus *Senogaster* is the valid name of the genus.

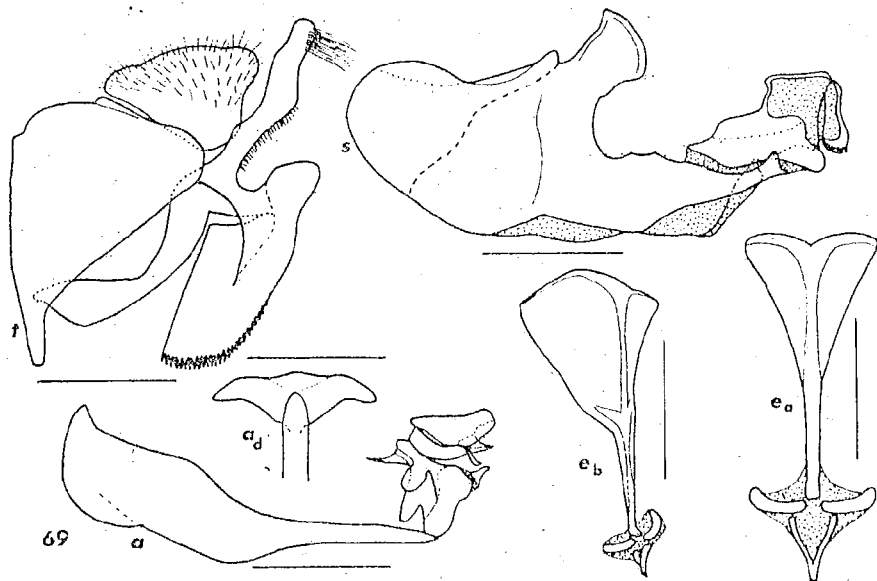
Genus *Syritta* Lepeletier and Serville

(Fig. 69)

Syritta Lepeletier and Serville, 1828, Encyclopedie methodique 10:808 (as subgenus of *Xylota*). Type-species, *Musca pipiens* Linné, 1758 (as *Xylota pipiens* Meigen) (monotypy).

Head: about one-third higher than long; face bare except for some long hairs narrowly along sides, completely pollinose, subcarinate,

with medial keel fairly distinct and slightly concave in profile, lateral keels indistinct; facial grooves very short, extending only half the length to level of tip of oral notch, extending along lower sixth of eyes; facial stripes distinct, pilose, restricted to cheeks only; cheeks very elongate, about eight times as long as broad; frontal prominence low, not clearly differentiated from surrounding area, at middle of head; front of male short, slightly shorter than eye contiguity, about one-third as long as vertical triangle; vertical triangle long, more than twice as long as broad at occiput; front of female fairly broad, slightly less than twice as long as broad at antennae, with sides only slightly convergent above, about two-thirds as broad at occiput as at antennae; ocellar triangle slightly in front of posterior margin of eyes. Eyes bare, narrowly holoptic in male. Antennae of medium length, ranging from two-thirds as long as to as long as face; third segment rectangular, ranging from as long as broad to twice as long as broad; arista short, about as long as antenna.



69, male genitalia of *Syrretta flaviventris* Macquart (*Austrosyrretta cortesi* Marnel (PT)). a, aedeagus and apodeme; e, ejaculatory apodeme; s, sternum 9; t, tergum 9; all lateral view, except a_d dorsal view, e_a anterior view and e_b bias lateral view.

Thorax: about one-third longer than broad, with lateral mesonotal margin pollinose in front of suture, with pleurae pollinose, with very short pile; meso-katepisterna with separate dorsal and ventral pile patches; meso-anepisterna with apical posterior edge swollen and ridge-like; meso-anepimera with posterior portion bare; meropleurae bare; metasterna pilose and greatly developed; metathoracic spiracle small; postmetacoxal bridge incomplete; meta-episterna with distinct patch of pile behind and below spiracle; plumulae short; scute-

Genus *Neplas* Porter

(Fig. 58)

Planes Rondani, 1863, Arch. Zool. 3:9 (preoccupied, Bowdich 1825; Saussure 1862). Type-species, *Xylota vagans* Wiedemann, 1830 (original designation).

Neplas Porter, 1927, Rev. Chil. Hist. Nat. 31:96 (new name for *Planes* Rondani).

Head: slightly higher than broad; face bare, narrow, subcarinate, with a weak medial keel and two short lateral keels, slightly concave in profile, completely pollinose; cheeks linear; facial grooves short, extending along lower third of eyes; facial stripes indistinct; frontal prominence low, slightly above middle of head; front of male short, as long as or slightly longer than eye contiguity; vertical triangle long, more than three times as long as broad, more than twice as long as eye contiguity; front of female narrow, slightly less than twice as long as broad at antenna, with convergent sides above; ocellar triangle always distinctly before posterior margin of eyes. Eyes bare, narrowly holoptic in male. Antennae elongate, as long as face or slightly longer; third segment elliptical or elongate, always twice as long as broad or longer; arista bare, longer than antenna or face.

Thorax: longer than broad, with very short pile; meso-anepimera with posterior portion bare; meropleurae bare; metathoracic pleurae bare; metasterna pilose and strongly developed; postmetacoxal bridge incomplete; pleurotergite with one or more distinct carinate ridges; plumula absent; metathoracic spiracle small; scutellum with ventral pile fringe and apical emarginate rim. Legs: hind femora short, greatly and evenly swollen, with some long ventral bristles as well as two rows of numerous short ventral spines; hind tibiae strongly arcuate, with ventral side forming a long knife edge, ending with short spur. Wings: marginal cell open; apical cell petiolate; anterior crossvein at middle of discal cell and oblique.

Abdomen: elongate and frequently constricted near base; sternites extremely long and narrow.

Material examined: 28 (26); *armatipes* Curran *, *frontalis* Curran *, and more than a dozen undetermined species.

Discussion: *Neplas* is distinguished from the other milesine syrphid genera by the following combination of characters: 1) pilose metasterna; 2) greatly swollen hind femora; 3) strongly arcuate hind tibiae; 4) carinate pleurotergites and 5) scutellum with ventral fringe. *Neplas* is frequently considered a synonym of the Holarctic genus *Xylota*, s. l., but *Neplas* is readily separated from *Xylota* by the following characters, in addition to characters 2, 3 and 4 above: 1) subcarinate faces; 2)

llum without ventral pile fringe, with distinct apical emarginate rim. Legs: hind femora short, greatly swollen and with a low spinose ridge on outer apical ventral third; hind tibiae arcuate; various species with additional armature on hind legs. Wings: marginal cell broadly open; apical cell petiolate, with petiole long and about as long as anterior crossvein; anterior crossvein slightly before middle of discal cell, straight; spurious vein frequently absent.

Abdomen; elongate, narrowed slightly beyond base of second segment, with apical segment in male club-shaped, with a row of strong curved long hairs at base of second segment.

Material examined: 28(1); *flaviventris* (Macquart) * and *pipiens* (Linné).

Discussion: The presence of pile on the meta-episterna is found only in three genera of the tribe Milesini, *Syritta*, *Senogaster* and *Spilomyia*. The differences and interrelationships between *Syritta* and *Senogaster* have been discussed under the latter. *Spilomyia* can be distinguished from both *Senogaster* and *Syritta* by its slender elongate hind femora with a small apical ventral tooth. The spinose ridge on the hind femora of *Syritta* is found elsewhere in the syrphids only in the Oriental genus *Nepenthosyrphus*. *Nepenthosyrphus*, although closely related to *Syritta*, is easily separated from *Syritta* by its strongly carinate face with the median keel convex or straight in profile, not concave.

Syritta is not indigenous to the New World but has been introduced by Man. The larvae of *Syritta* breed in almost any kind of waste and *pipiens* has been frequently reported to breed in human feces. *Syritta* is found throughout the Old World and has its greatest species abundance in Africa. *S. pipiens* is almost world-wide in distribution being absent in South America. It is possible that *S. flaviventris*, which is found only in Africa and South America, has occupied the *pipiens* niche in South America.

Genus *Tropidia* Meigen

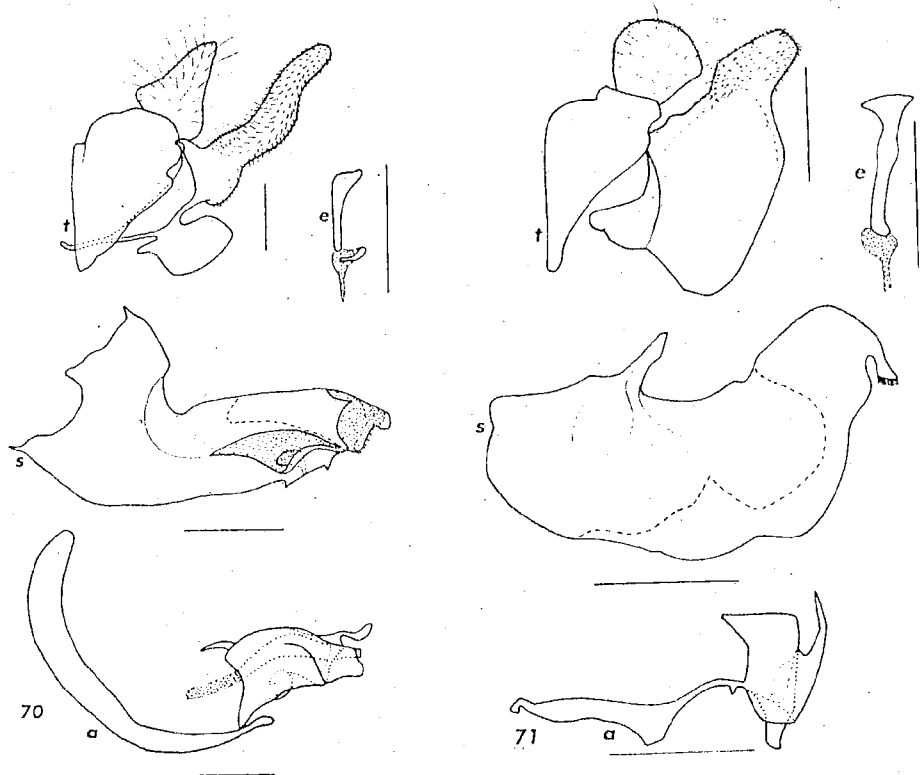
(Fig. 70)

Tropidia Meigen, 1822, Syst. Besch., 3:343. Type-species, *Meloboris milesiformis* Fallen, 1817 (subsequent designation; Curtis, 1832, Brit. Ent. 9: pl. 401) = *Musca scita* Harris, 1782.

Head: higher than long; face bare, mostly pollinose, carinate, males with strong median keel convex in profile, females with medial keel weaker and frequently concave; cheeks linear, about twice as long as broad; facial grooves short, extending along lower third of eyes; facial stripes distinct, pilose; frontal prominence low, above middle of head; front of male short, slightly shorter than eye contiguity, about one-half as long as vertical triangle; vertical triangle long, twice as

long as broad at occiput; front of female broad, about two-thirds as broad at antennae as long, about as long as face, with convergent sides above; ocellar triangle distinctly before posterior margin of eyes. Eyes bare, holoctic in males. Antennae intermediate in length, ranging from about one-half as long as face to as long as face; third segment quadrate, about as long as broad; arista long, about one-fourth longer than antenna.

Thorax: slightly longer than broad, with pleurae and frequently sides of mesonotum pollinose, with short pile; meso-anepisterna with posterior apical edge frequently swollen and ridge-like; meso-katepisterna with separate dorsal and ventral pile patches; meso-anepimera with posterior portion bare; meropleurae bare; metathoracic pleurae bare; metasterna pilose, greatly developed, with a membranous stripe dividing base from developed ventral portion; postmetacoxal bridge incomplete; metathoracic spiracle small; plumulae elongate; scutellum with a broad emarginate apical rim, with or without ventral pile fringe. Legs: hind femora strongly swollen, with ventral triangular plate on apical third on outside; hind tibiae ending in a broad rounded spur.



Male genitalia. 70, *Tropidia quadrata* (Say); 71, *Hemixylofa varipes* Shannon & Aubertin (PT). a, aedeagus and apodeme; e, ejaculatory apodeme; s, sternum 9; t, tergum 9; all lateral view.

Wings: marginal cell open; apical cell closed distinctly before reaching costa, with petiole very short and shorter than humeral crossvein; anterior crossvein at or beyond middle of discal cell, frequently on outer third of discal cell; apical and posterior crossveins continuous, without spurs at their bases.

Abdomen: elongate, with sides converging slightly towards the apex.

Material examined: 20(6); *calcarata* Williston, *quadrata* (Say), *scita* (Harris) and a couple of undetermined neotropical species.

Discussion: *Tropidia* is readily recognized by its triangular ventral plate on the hind femora and strongly carinate faces. The divided metasternum of *Tropidia* is a unique character among the syrphids. *Tropidia* is a Holarctic genus with six species extending south along the temperate Andes into Chile. A single species, *dicentra* Speiser, has been described from outside the Holarctic and Neotropical Regions. However, the description of this African species suggests that it does not belong to *Tropidia*, the face and plate on hind femora being unlike those of a typical *Tropidia*. Shannon and Aubertin (1933) provided a key to four of the Neotropical species.

Genus *Hemixylota* Shannon and Aubertin

(Fig. 71)

Hemixylota Shannon and Aubertin, 1933, Dipt. Patagonia S. Chile 6:146. Type-species, *Hemixylota varipes* Shannon and Aubertin, 1933 (original designation).

Head: slightly higher than long; face bare, pollinose, concave; cheeks linear, about twice as long as broad; facial grooves very short, extending along lower sixth of eyes; facial stripes distinct and pilose; frontal prominence low, slightly above middle of head; front of male long, slightly longer than vertical triangle; vertical triangle rectangular, only slightly broader at occiput than at front, about one-fourth longer than broad; front of female broad, slightly broader than long, as long as face, with sides slightly convergent above, about three-fourths as broad at ocellar triangle as at antennae; ocellar triangle distinct before posterior margin of eyes. Eyes bare, dichoptic in male, separated in male by about width of ocellar triangle. Antennae short, about three-fourths as long as face; third segment orbicular; arista long, about one-third longer than antenna.

Thorax: slightly longer than broad, with short pile; meso-katepisterna with separate dorsal and ventral pile patches; meso-anepimera with posterior portion bare; mero-pleurae bare; metathoracic pleurae bare; metasterna pilose and developed; postmetacoxal bridge incomplete; metathoracic spiracle small; pleurotergite not carinate; plumulae elongate; scutellum with a ventral pile fringe and distinct apical emar-