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NOTES ON THE STATUS AND RELATIONSHIPS OF SOME GENERA IN THE TRIBE MILESIINI (DIPTERA: SYRPHIDAE)

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ABSTRACT—The taxonomic status and the phylogenetic relationships of certain genera in the tribe Milesiini (Diptera: Syrphidae) are discussed. *Lejota* Rondani, *Chalcosyrphus* Curran, and *Cynorhinella* Curran are transferred from the tribe Myoleptini to the tribe Milesiini. *Xylotodes* Shannon, *Cheiroxylota* Hull, and *Neplas* Porter are synonymized with *Chalcosyrphus* (*Xylotomima* Shannon). The following are reduced to subgeneric status: *Chrysosomidia* Curran as a subgenus of *Hadromyia* Williston, *Crioprora* Osten Sacken as a subgenus of *Brachypalpus* Macquart, and *Xylotomima* Shannon as a subgenus of *Chalcosyrphus* Curran.

The status and relationships of a number of genera in the tribe Milesiini of the subfamily Eristalinae (= Milesiinae) have been confused. For the forthcoming Manual of North American Diptera a new arrangement of these genera will be used. To avoid further confusion and uncertainty about these taxa, the reasons for the new arrangement and the changes involved are here briefly explained.

The taxa treated are first listed synonymically[2], then they are discussed individually and in alphabetical order, followed by a key summarizing the diagnostic characters of the valid genera and subgenera. A complete key to the Nearctic syrphid genera will be included in the forthcoming North American Diptera Manual. The male genitalia of the type-species of all the discussed taxa are figured.

SYNONYMICAL LIST OF TAXA MENTIONED IN THIS PAPER

Tribe Brachyopini Williston, 1885

Myolepta Newman, 1838, Entomol. Mag. (Newman's) 5:373. Type-species, *Musca luteola* Gmelin (mono.). See Thompson (1974) for detailed synonymy and discussion of phylogenetic relationships.

Tribe Milesiini Rondani, 1845

The *Blera* Group

Blera Billberg, 1820, Enum. Insect. in Mus. Blbg:118. Type-species, *Musca fallax* Linnaeus (Johnson, 1911, Psyche. 18:73). See Wirth, *et al.* (1965:610) for synonyms.

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[2] The format used follows that of the North American Diptera Catalog (*v.* Wirth, *et al.*, 1965). The type-species for replacement names have not been repeated because they are the same as those of the original names. A complete list of the eristaline genera can be found in Thompson (1972:202–207).

Caliprobola Rondani, 1845, Nouv. Ann. Sci. Nat. Bologna (2)2:455. Type-species, *Syrphus speciosa* Rossi (as *Milesia speciosa* Fabr.) (orig. des.)

Lejota Rondani, 1857, Dipt. Ital. Prodr. 2:176. Type-species, *Psilota ruficornis* Zetterstedt (Goffe, 1944, Entomol. Mon. Mag. 80:29). See Wirth, *et al.* (1965:590) for synonyms.

The *Tropidia* Group

Cynorhinella Curran, 1922, Can. Entomol. 54:14. Type-species, *canadensis* Curran (orig. des.). See Wirth, *et al.* (1965:588) for synonyms.

The *Xylota* Group

Brachypalpus Macquart, 1834, (Roret's Suite a Buffon), Dipt. 1:523 (Hist. Nat. Ins., Dipt. 1:523). Type-species, *tuberculatus* Macquart (Rondani, 1844, Nouv. Ann. Sci. Nat. Bologna (2)2:456) = *Syrphus valgus* Panzer.

Subg. *Crioprora* Osten Sacken, 1878, Catal. Descr. Dipt. N. Amer., 2nd. ed.: 136, 251. Type-species, *Pocota alopex* Osten Sacken (Williston, 1887, Bull. U. S. Natn. Mus. [1886] 31:217). NEW STATUS

Chalcosyrphus Curran, 1925, Kan. Univ. Sci. Bull. [1924] 15:122 (as a subgenus of *Chalcomyia*). Type-species, *atra* Curran (orig. des.) = *Chalcomyia depressa* Shannon.

Subg. *Xylotomima* Shannon, 1926, Proc. U. S. Natn. Mus. 69(9):7, 15. Type-species, *Xylota vecors* Osten Sacken (orig. des.). As first revisor I select *Xylotomima* as being senior to *Xylotodes*. NEW STATUS

Planes Rondani, 1863, Dipt. Exot. Rev. Annot.:9 (preocc. Bowdich, 1825; Saussure, 1862). Type-species, *Xylota vagans* Wiedemann (mono.).

Xylotodes Shannon, 1926, Proc. U. S. Natn. Mus. 69(9):7, 22. Type-species, *Brachypalpus inarmatus* Hunter (orig. des.). NEW SYNONYMY

Neplas Porter, 1927, Revta chil. Hist. Nat. 31:96. New name for *Planes* Rondani. NEW SYNONYMY

Cheiroxylota Hull, 1949, Trans. Zool. Soc. London. 26:361. Type-species, *Xylota dimidiata* Brunetti (orig. des.). NEW SYNONYMY

Hadromyia Williston, 1882, Can. Entomol. 14:78. Type-species, *grandis* Williston (mono.).

Subg. *Chrysosomidia* Curran, 1934, Man. Fam. Gen. N. Amer. Dipt., 2nd ed.:261. Type-species, *Caliprobola crawfordi* Shannon (orig. des.). NEW STATUS

Macrometopia Philippi, 1865, Verh. Zool.-Bot. Ges. Wien 15 (abh.):740. Type-species, *atra* Philippi (mono.). See Thompson (1972:152) for redescription.

Pocota Lepeletier and Serville, 1828, Ency. Meth. (Ins.) 10(2):518 (as a subgenus of *Milesia*). Type-species, *Milesia apicata* Meigen (mono.) = *Musca apiformis* Schrank.

Xylota Meigen, 1822, Syst. Beschr. Zweifl. Ins. 3:211. Unjustified new name for *Heliophilus* Meigen. See Wirth, *et al.* (1965:604) for detailed synonymy and reasons for use of *Xylota*.

Heliophilus Meigen, 1803, Mag. Insektenk. (Illiger). 2:273. Type-species, *Musca sylvarum* Linnaeus (mono.).

Generic Discussions

Blera Billberg (fig. 30–33): Both *Blera* (fig. 32–33) and *Somula* (fig. 29) share the basal elongation of the aedeagus and its fusion

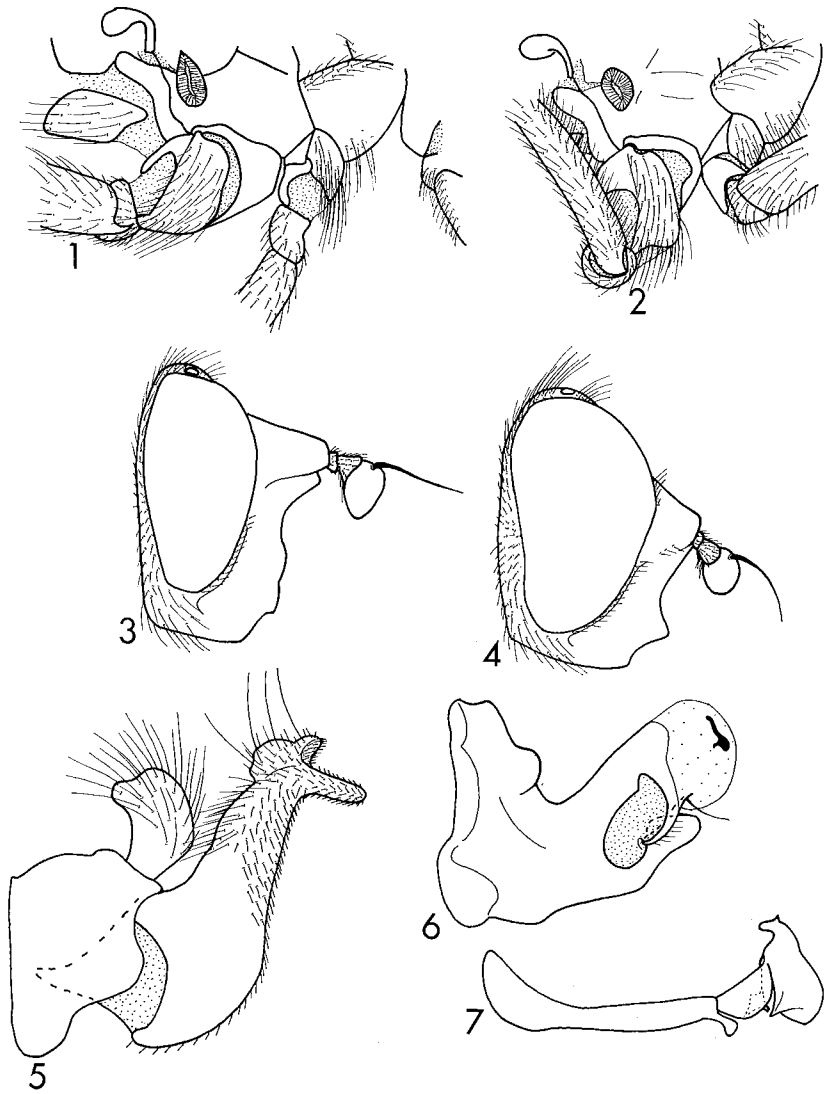

Fig. 1–2. Metasterna and associated structures, lateral view. 1, *Hadromyia* (*Chrysosomidia*) *pulcher* (Williston). 2, *Caliprobola speciosa* (Rossi). Fig. 3–4. Heads, lateral view. 3, *Caliprobola speciosa* (Rossi). 4, *Hadromyia* (*Chrysosomidia*) *pulcher* (Williston). Fig. 5–7. Male genitalia of *Caliprobola speciosa* (Rossi), lateral view. 5, 9th tergum. 6, 9th sternum. 7, aedeagus.

to the aedeagal apodeme. *Blera* may be a paraphyletic group, and *Somula* may be only a highly specialized derivative from 1 of the groups now included in *Blera*. Too little is known of the phylogeny of *Blera* to classify *Blera* and *Somula* with certainty.

Blera group (fig. 27–36): In my revision of the Neotropical milesiine genera (Thompson, 1972) I divided the genera of the tribe Milesiini into 6 groups following in part the tribal arrangement of Hull (1949) (his Xylotinae = Milesiini). One of these groups is the *Blera* group, characterized by: 1, a produced frontal prominence (fig. 3); 2, bare and undeveloped metasternum (fig. 2); 3, elongate, singular, and tubular ejaculatory process (fig. 29, 32–33, 36); and 4, elongate ligula and open lateral membranous area on the 9th sternum in the male (fig. 28, 31, 35).

Chalcosyrphus Curran (fig. 37–39): *Chalcosyrphus* has been considered a member of the tribe Myoleptini and as either a separate genus or a subgenus of *Lejota* Rondani. The reasons for this association were probably based on the basal position of the anterior crossvein and the overall dark coloration of these flies, both symplesiomorphic character states. As *Chalcosyrphus* does not have the swollen and spinose anterior femora of the Myoleptini (*q.v.*), it can not be included in that taxon. *Chalcosyrphus* has a prominent metasternum and concave face, apomorphic characters which indicate a placement in the *Xylota* group (*q.v.*). The combination of swollen hind femora, slightly arcuate hind tibiae, and pilose metasternum and face suggest that *Chalcosyrphus* is the plesiomorphic sister-group to *Xylotomima* (*q.v.*). With the exception of the ventrolateral spur on the superior lobe of the male genitalia, all the distinctions between *Chalcosyrphus* and *Xylotomima* are minor and may not even be valid when the full range of variation in *Xylotomima* is known. Thus, I am treating *Chalcosyrphus* and *Xylotomima* as subgenera of *Chalcosyrphus*.

Chrysosomidia Curran (fig. 1, 4, 11–13): The species of *Chrysosomidia* were originally described in the genus *Caliprobola* Rondani. Shannon (1926:40) noted that these species differ "considerably" from the type-species of *Caliprobola* by their head shape. Curran formalized this distinction by naming the genus *Chrysosomidia*. Hull (1949:368–369) treated *Chrysosomidia* as separate from *Caliprobola* and noted that the distinctions between *Chrysosomidia* and *Xylota* were "weak." Thus the synonymy of *Chrysosomidia* under *Caliprobola* in the recent North American Diptera Catalog (Wirth, *et al.*, 1965:608) was surprising. *Chrysosomidia* differs from *Caliprobola* as follows: 1, the face is concave and without a tubercle (fig. 4); 2, the frontal prominence is low (fig. 4); 3, the metasternum is developed (fig. 1); 4, the hind femur has distinct apicoventral spines; 5, the surstyle has a distinct ventral lobe and a simple apical lobe (fig. 11); 6, the 9th

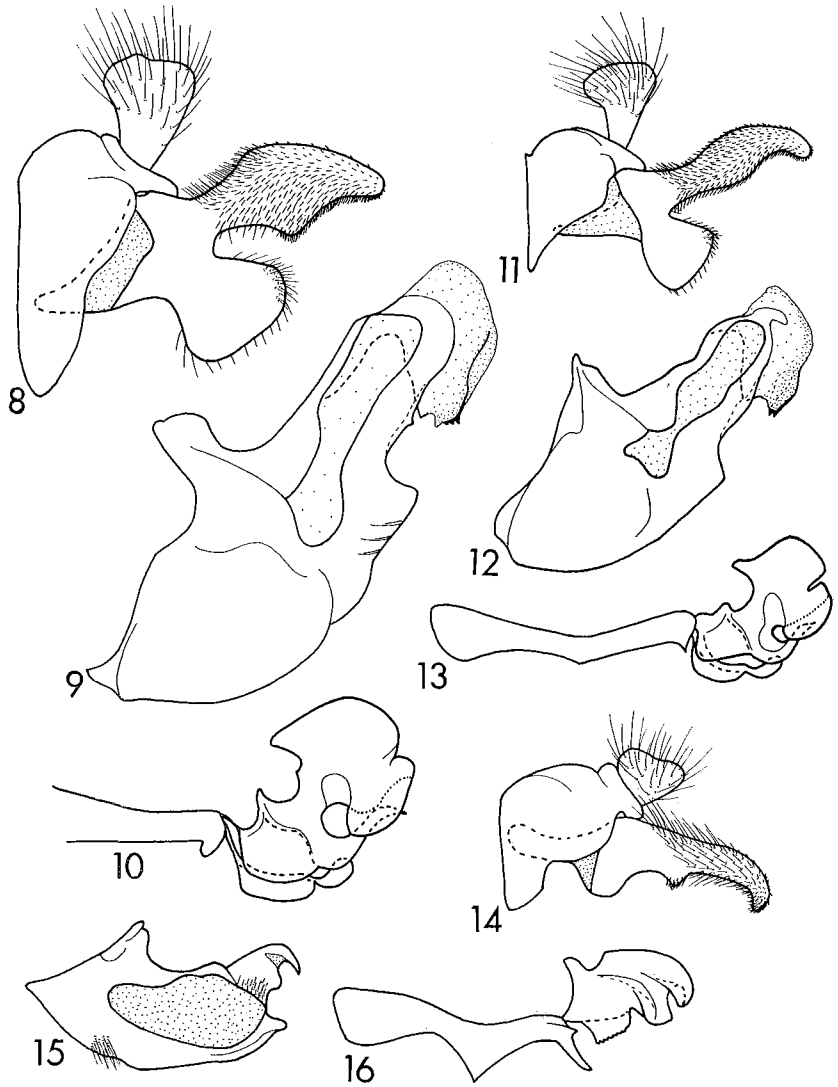

Fig. 8–10. Male genitalia of *Hadromyia* (*s.s.*) *grandis* Williston, lateral view. 8, 9th tergum. 9, 9th sternum. 10, aedeagus. Fig. 11–13. Male genitalia of *Hadromyia* (*Chrysosomidia*) *crawfordi* (Shannon), lateral view. 11, 9th tergum. 12, 9th sternum. 13, aedeagus. Fig. 14–16. Male genitalia of *Cynorhinella bella* (Williston), lateral view. 14, 9th tergum. 15, 9th sternum. 16, aedeagus.

sternum is without a distinct ligula, but has an enclosed lateral membranous area (fig. 12); and 7, the aedeagus is of a xylotine type (fig. 13). *Chrysosomidia* is very closely related to and is here considered as a subgenus of *Hadromyia* Williston. *Chrysosomidia* and *Hadromyia* are the only 2 taxa of the *Xylota* group with completely yellow faces (synapomorphy). The differences between the 2 taxa, with the exception of the spur on the middle femur of the male of *Hadromyia*, are the consequences of 1 being a bee mimic. *Hadromyia* is a bumble bee mimic; thus it is larger and more robust than the typical fly of the *Xylota* group and has a distinctive yellow and black pilose color pattern. These differences are not of sufficient gravity to indicate to me an absolute age of origin to warrant separate generic status for the 2 taxa (see also under *Crioprora*).

Crioprora Osten Sacken (fig. 46–48): *Crioprora* is very similar to and is the sister group of *Brachypalpus* Macquart as indicated in the key and phylogeny. The principal difference between *Crioprora* and *Brachypalpus* is the shape of the face, which is produced much more forward in *Crioprora*. Absolute ranking can only be determined by the geologic age of the origin of the taxon and the relative ranking is determined in respect to the phylogenetic relationships of the taxon (*i.e.*, sister-groups must be of equal rank). Thus, *Crioprora* and *Brachypalpus* must have the same rank, but because we know nothing of the past history of these flies it is difficult to assign a categorical rank to these taxa. However, in the absence of such evidence I feel it is proper to equate degree of morphological divergence with geological age, especially when this is done in reference to a phylogeny. Considering the position of *Crioprora* and *Brachypalpus* in the phylogeny of the *Xylota* group and the relative amount of morphological difference between the 2, I believe they should be accorded subgeneric rank. On this basis I also consider *Chrysosomidia*, *Hadromyia*, *Chalcosyrphus* and *Xylotomima* (*q.v.*) as subgenera.

Cynorhinella Curran (fig. 14–16): *Cynorhinella* is somewhat of an enigma to me; it does not appear to fit readily into any of the groups of genera I recognize in the tribes Milesiini or Brachyopini. The small ventrolateral tubercle on the apical ⅕ of the hind femur may indicate a relationship with the *Tropidia* group of the tribe Milesiini. The basic ground plan of the *Tropidia* group is characterized by a ventrolateral protuberance on the hind femur and a developed metasternum which has a membranous crease basolaterally. This characteristic crease may be the result of the incomplete closure of the developing metasternum, which would suggest that the sister-group to this taxon has an undeveloped metasternum. *Cynorhinella* has an undeveloped metasternum and may be the plesiomorphic sister-

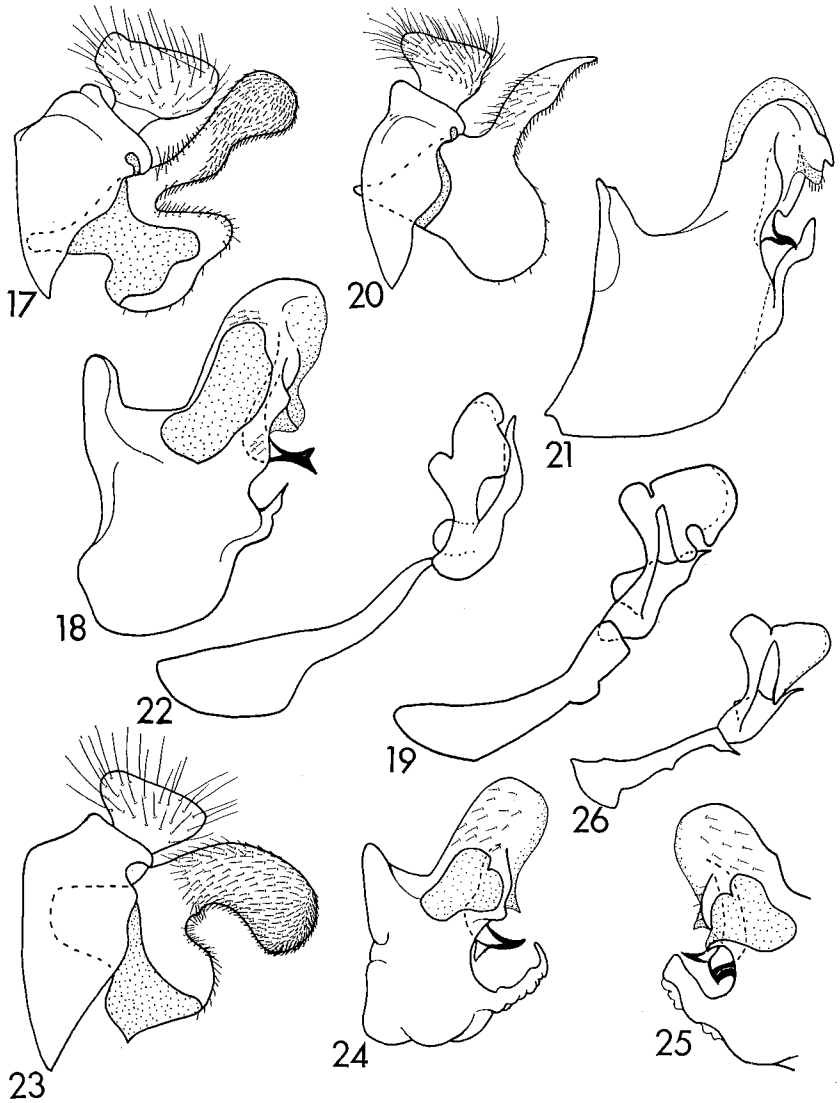

Fig. 17–19. Male genitalia of *Chalcosyrphus* (*Xylotomima*) *inarmatus* (Hunter), lateral view. 17, 9th tergum. 18, 9th sternum. 19, aedeagus. Fig. 20–22. Male genitalia of *Chalcosyrphus* (*Xylotomima*) *vecors* (Osten Sacken), lateral view. 20, 9th tergum. 21, 9th sternum. 22, aedeagus. Fig. 23–26. Male genitalia of *Chalcosyrphus* (*Xylotomima*) *dimidiatus* (Brunetti), lateral view. 23, 9th tergum. 24, 9th sternum, right side. 25, 9th sternum, left side. 26, aedeagus.

group to the *Tropidia* group. Thus, I have tentatively included *Cynorhinella* with that group.

Lejota Rondani (fig. 34–36): *Lejota* has usually been considered a member of the tribe Myoleptini (Fluke & Weems, 1956; Wirth, *et al.*, 1965:590; Thompson, 1968). As *Lejota* does not have all the femora swollen and spinose, it cannot be closely related to *Myolepta* (*q.v.*). Boyes and van Brink (1967) have suggested, on the basis of similar karyotypes, that *Lejota* belongs in the tribe Milesiini and is closely related to *Blera*. *Lejota* is quite similar to *Blera* although most of these similarities are based on symplesiomorphy. However, *Lejota* shares a number of synapomorphic character states with those genera here considered as the *Blera* group (*q.v.*). *Lejota* differs from *Blera* and the other genera of the *Blera* group in the structure of the male genitalia; the very elongate and curved ejaculatory process and the jointed dorsal lobe of the aedeagus (fig. 36) are unique (autapomorphy). I consider *Lejota* a valid genus of the *Blera* group in the tribe Milesiini.

Myolepta Newman and tribe Myoleptini: Shannon (1923:19) established this tribe for those syrphids with "all the femora swollen and spinose on lower side." This character state is unique among syrphids and clearly demonstrates the monophyly of the taxon. Other authors, especially Fluke and Weems (1956) and Thompson (1968), enlarged the tribe to include groups which lack swollen and spinose femora. As the tribal limits were expanded, they became more nebulous. In 1972 I abandoned my attempts to define the tribe, combined Myoleptini *sensu* Shannon with the tribe Brachyopini (= Chrysogasterini), and transferred the other genera I had previously included in it to either that tribe or to the Milesiini. The relationships of the genera transferred to the tribe Milesiini are here discussed under *Chalcosyrphus*, *Cynorhinella*, and *Lejota*.

Xylota Meigen (fig. 40–42): *Xylota* was restricted by Shannon (1926) to those species which had the metasternum bare and a few other characters in common. Hippa (1968) refined Shannon's definition by adding a number of male genitalic characteristics and by noting that there were a few exceptions to the metasternal character. These exceptions were *Xylotomima pigra* (Fabricius) and *X. fulviventris* (Bigot) and *Xylota lenta* Meigen. *Xylotomima pigra* and *X. fulviventris*, while having most of the metasternum bare, almost always have a few long posterolateral hairs on it. These species have

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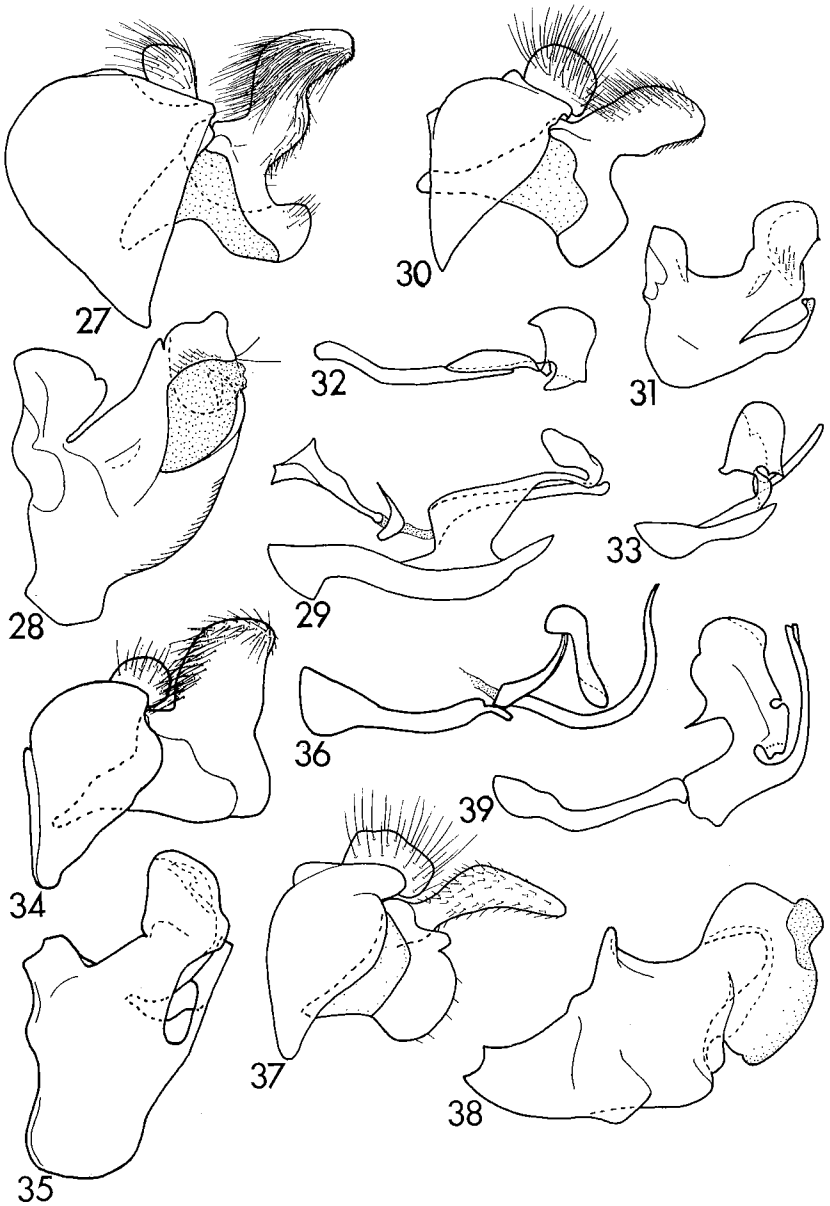
Fig. 27–29. Male genitalia of *Somula decora* Macquart, lateral view. 27, 9th tergum. 28, 9th sternum. 29, aedeagus. Fig. 30–32. Male genitalia of *Blera fallax* (Linnaeus), lateral view. 30, 9th tergum. 31, 9th sternum. 32, aedeagus. Fig.



33. Aedeagus of *Blera nigra* (Williston), lateral view. Fig. 34–36. Male genitalia of *Lejota ruficornis* (Zetterstedt), lateral view, drawn from holotype of *beckeri* Shannon. 34, 9th tergum. 35, 9th sternum. 36, aedeagus. Fig. 37–39. Male genitalia of *Chalcosyrphus* (*s.s.*) *depressus* (Shannon), lateral view, drawn from holotype. 37, 9th tergum. 38, 9th sternum. 39, aedeagus.

the characteristic spur of *Xylotomima* (*q.v.*) on the superior lobe of the male genitalia. Thus the "bare" condition in these species is due to convergence. *Xylota lenta* has the metasternum completely bare and does not have a spur on the superior lobe. *Xylota lenta* agrees with *Xylota* in having an enlarged metathoracic spiracle, long arista, and a bare metasternum. As noted by Hippa (1968), this species differs from the typical *Xylota* (*sensu sylvarum* Linnaeus) species by the shape of the aedeagus, which has elongate ejaculatory processes. Because some *Xylotomima* species also have elongate ejaculatory processes, Hippa (1968) placed *lenta* in that genus. The elongate ejaculatory processes in *lenta* and *Xylotomima nemorum* (Fabricius) appear to be of a different nature and origin and thereby the results of convergence. I consider *lenta* a member of *Xylota* but would perhaps place it in a separate subgenus. This subgenus could be distinguished from *Xylota, sensu stricto,* by the lack of a spur on the hind trochanter of the male and the elongate ejaculatory processes. These are characteristics of the male only and until female characters are found I prefer not to name this subgenus. *Xylota makiana* (Shiraki) belongs to this *lenta* group.

Xylota group: "Xylotinae" was originally set up for elongate, rather bare flies with concave faces. In the present classification of Syrphidae this taxon is treated as only an informal group of genera in the tribe Milesiini (see under *Blera* group). The search for the sister-group of these typical xylotine flies has led to the inclusion of genera which do not have the characteristic facies of *Xylota.* However, all the genera now included in the *Xylota* group have an unique form of the aedeagus or a modification thereof. The basic ground plan condition of the xylotine aedeagus is illustrated by *Hadromyia* (fig. 10, 13), *Brachypalus* (fig. 45) and *Sterphus* (see Thompson, 1973). This basic structure includes a large, laterally flared ventral lobe, a pair of lateral lobes (= ejaculatory processes) between which is the ejaculatory duct, and an enlarged dorsal lobe, which has its posterior surface flared so that the lateral lobes extend along the resultant groove. A tentative phylogeny of the *Xylota* group is presented (Diagr. 1). While all phylogenies are hypotheses and thereby tentative, I labelled this one tentative because I am not sure of the status of 1 character. The presence of bare metasterna in all the groups of clade D may not be true synapomorphy. Thus either clade E may be the sister-group to clades $C + F$ or clades $C + H$ (= *Xylota* of older authors) may be the sister-group to clades $G + E$ (the traditional view). Also, *Pocota* has not been included in this phylogeny because I am uncertain of its placement in the *Xylota* group.

Xylotomima Shannon (fig. 17–26): *Xylotomima* was erected for those species of *Xylota* of authors which have the metasternum pilose.

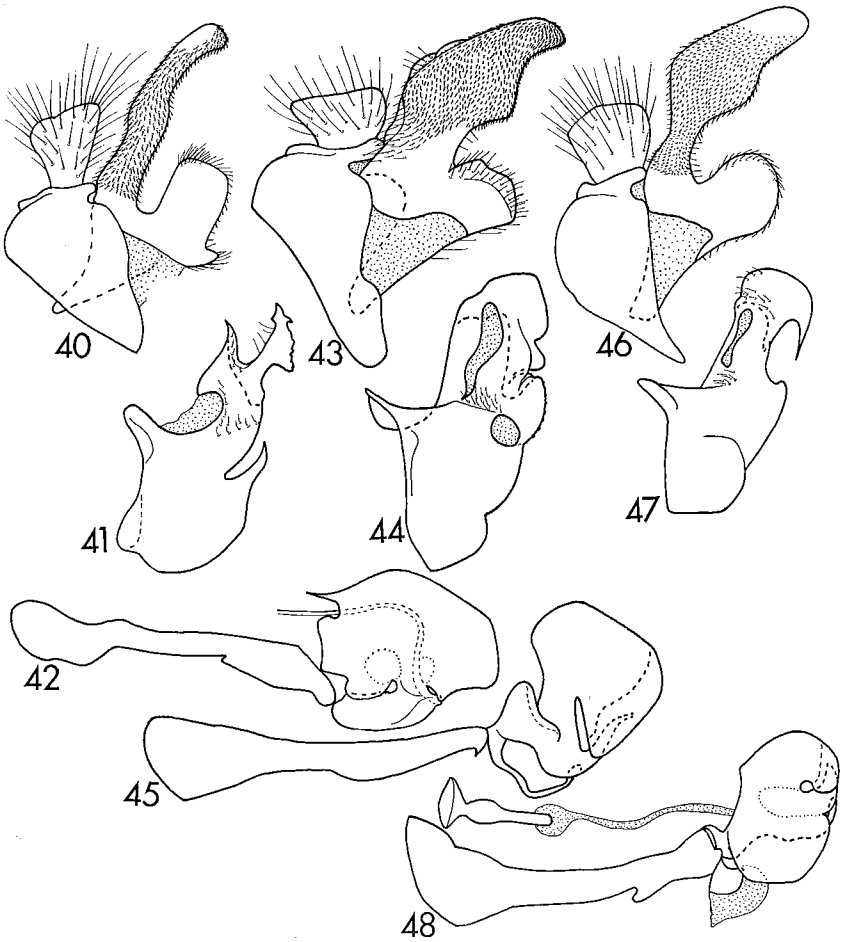
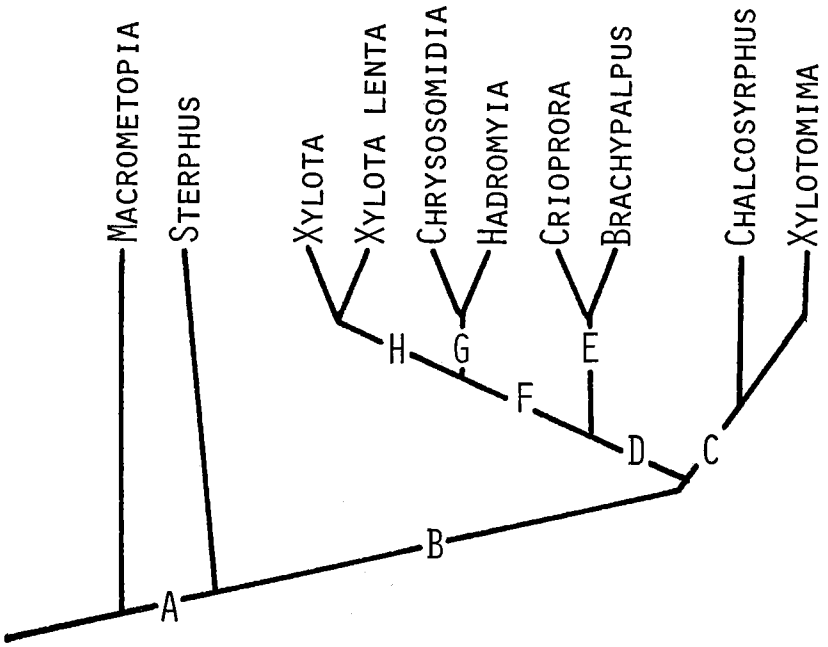


Fig. 40–42. Male genitalia of *Xylota sylvarum* (Linnaeus), lateral view. 40, 9th tergum. 41, 9th sternum. 42, aedeagus. Fig. 43–45. Male genitalia of *Brachypalpus* (*s.s.*) *valgus* (Panzer), lateral view. 43, 9th tergum. 44, 9th sternum. 45, aedeagus. Fig. 46–48. Male genitalia of *Brachypalpus* (*Crioprora*) *alopex* (Osten Sacken), lateral view. 46, 9th tergum. 47, 9th sternum. 48, aedeagus.

At the same time Shannon erected *Xylotodes* for those species of *Brachypalpus* which also has a metasternum pilose. The differences Shannon noted between the 2 genera were the head shape ("broadly elliptical" versus "triangular") and length and density of the body pile ("inconspicuous" versus "usually fairly long and dense"). These differences are rather minor and not accepted here. *Neplas* Porter, a Neotropical group, also has pilose metasternum and is separated



Diagr. 1. Phylogenetic diagram of the *Xylota* group.

The synapomorphic character states for the principal clades are: A, eyes bare, metasternum developed, apical cell (R 4 + 5) with long petiole; B, face concave; C, hind femora enlarged; D, metasternum bare; E, hind femora massive and each with an apicoventral tubercle, aristae short and thickened; F, head shape elliptical, cheeks elongate, eyes round; G, face entirely yellow; H, aristae elongate, metathoracic spiracles enlarged. The autapomorphic character states for the genera and subgenera are: *Macrometopia*, uniquely shaped aedeagus, which has a greatly enlarged dorsal lobe; *Sterphus*, metasternum bare (paraphyletic?): *Chalcosyrphus*, eyes dichoptic, aedeagus with dorsal lobe enlarged, surstyles strongly dimorphic, ejaculatory processes elongate, mesonotum depressed in front of scutellum; *Xylotomima*, face bare, superior lobe with strong ventrolateral spur; *Brachypalpus*, not known (paraphyletic?); *Crioprora*, epistoma produced forward; *Hadromyia*, middle femora of male with basal spur; *Chrysosomidia*, middle coxae with posterior surfaces bare; *Xylota lenta* group, hind trochanters of male without spurs, aedeagus with long ejaculatory processes; *Xylota*, uniquely shaped aedeagus which has the lateral lobes forming internal spurs.

from *Xylotomima* and *Xylotodes* by a number of characters (see Thompson, 1972:157–158). *Cheiroxylota* Hull is the palaeotropic counterpart of *Neplas* and agrees with all the essential characteristics of *Neplas* except that the face is not as strongly carinate. All these taxa have 1 unique characteristic in common, a strong ventrolateral spur on the superior lobe of the male genitalia. Also, the aedeagus has the same basic structure, although the precise shape of the dorsal lobe and the length of the ejaculatory processes are somewhat variable.

The distinctive characteristics of *Neplas* (and *Cheiroxylota*), such as the greatly swollen hind femora, strongly arcuate hind tibiae, carinate pleurotergite and face, etc., are only those of magnitude and can be found in lesser degrees in many species of *Xylotomima* (*cf.* especially *X. metallica* (Wiedemann)). Thus I consider *Xylotomima* + *Xylotodes* + *Cheiroxylota* + *Neplas* to represent a single monophyletic morphocline and clade. The question is how many genera should be recognized for the components of this clade. Whereas *Neplas* (and *Cheiroxylota*), the end point of the morphocline, is amply distinct and thereby recognizable, the other components are not. The recognition of *Neplas* as a distinct genus would leave the other components as a paraphyletic genus, thus, I prefer to recognize 1 subgenus for the whole clade (*v. Chalcosyrphus*).

Key to the Eristaline Genera Treated in This Paper

1. All femora swollen and with strong apicoventral spines ..... (Brachyopini (pt.)) ..... *Myolepta* Newman
— Front 4 femora slender and without spines ..... (Milesiini (pt.)) 2
2. Metasternum developed (fig. 1); face always concave (fig. 4); male usually holoptic and frequently with spur on hind trochanter or tibia ..... (*Xylota* group) 3
— Metasternum not developed (fig. 2); face usually tuberculate or flat (fig. 3); male frequently dichoptic and always with simple legs ..... (*Blera* group) 9
3. Metasternum bare 4
— Metasternum pilose, always with at least some long hairs posterolaterally ..... *Chalcosyrphus* Curran 8
4. Face yellow in ground color; abdomen completely dark, without yellow or orange markings; hind femur slender ..... *Hadromyia* Williston 5
— Face usually completely black in ground color, rarely partly yellow; if partly yellow, then either abdomen with yellow or orange spots or hind femur greatly enlarged 6
5. Abdomen black, black pilose except yellow pilose on 4th tergum; male with long basal spur on middle femur; large, robust, bumble bee mimics (western Nearctic) ..... *Hadromyia* (*Hadromyia*)
— Abdomen brassy yellow pilose, with shiny metallic fasciae; middle femur simple; smaller and slender flies, not bee mimics (Nearctic) ..... *Hadromyia* (*Chrysosomidia* Curran)
6. Head triangular in anterior view; face extensively shiny; cheek broad, much broader than metathoracic spiracle; 3rd antennal segment kidney-shaped, wider than long; hind femur greatly enlarged, arcuate, with a small apicoventral tubercle (frequently hidden by tibia); arista short, shorter than width of face ..... *Brachypalpus* Macquart 7
— Head elliptical in anterior view; face pollinose; cheek narrow, narrower than metathoracic spiracle; 3rd antennal segment orbicular; hind femur neither greatly enlarged nor arcuate, without ventral tubercle; arista long, much longer than width of face (Holarctic; Oriental) ..... *Xylota* Meigen

7. Face straight under antennae, with epistoma strongly produced forward and beyond antennal bases (Nearctic) ..... *Brachypalpus* (*Crioprora* Osten Sacken)
— Face concave, with epistoma not produced and ending at or before level of antennal bases (Holarctic) ..... *Brachypalpus* (*Brachypalpus*)
8. Face and cheek pilose, mostly shiny; anterior crossvein (r–m) before middle of discal cell (M 1 + 2); male with eyes narrowly separated and with tubercle on hind trochanter; frequently with flattened area in front of scutellum (Nearctic) ..... *Chalcosyrphus* (*Chalcosyrphus*)
— Face bare; face and cheek extensively pollinose; anterior crossvein usually at or beyond middle of discal cell; male with eyes holoptic and without tubercle on trochanter; never with flattened area in front of scutellum (all regions except Australian) ..... *Chalcosyrphus* (*Xylotomima* Shannon)
9. Face, thorax, legs, and abdomen all black; anterior crossvein (r–m) basal, before middle of discal cell (M 1 + 2) 10
— Face and/or abdomen always partially pale, yellow to reddish brown, frequently legs and humerus also partially yellow; position of anterior crossvein variable 11
10. Apical cell (R 4 + 5) with long petiole, about as long as humeral crossvein (h); frontal prominence produced forward, so that tip of epistoma and bases of antennae are approximately even or with antennal bases extended beyond tip of epistoma (Holarctic) ..... *Lejota* Rondani
— Apical cell with a very short petiole, less than ½ as long as humeral crossvein; frontal prominence low; epistoma produced forward, so that tip of epistoma projects greatly beyond antennal bases (Nearctic) ..... *Cynorhinella* Curran
11. Abdomen elongate, with 3 pairs of large yellow lateral spots; wing with brown anterior margin; anterior crossvein at outer ⅓ of discal cell; frontal prominence greatly produced (eastern Nearctic) ..... *Somula* Macquart
— Abdomen never with yellow spots, sides or basolateral corners of terga sometimes yellow; other characters variable (*v.i.*) 12
12. Abdomen elongate; terga with apical margins brassy and with brassy yellow pile; frontal prominence greatly produced; wing with orange anterior margin and brown apex; anterior crossvein at outer ⅓ of discal cell (Palaearctic) ..... *Caliprobola* Rondani
— Abdomen oval, never with apical fasciae of brassy yellow pile or yellow ground color; frontal prominence never greatly produced; wing hyaline or uniformly darkened; anterior crossvein at most only slightly beyond middle of discal cel (Holarctic) ..... *Blera* Billberg

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