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**THE PLACEMENT OF THE SUBGENUS  
*PROTOLEPIDOSTOLA* HULL (Diptera:  
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OF TWO NEW SPECIES**

F. CHRISTIAN THOMPSON

**THE PLACEMENT OF THE SUBGENUS  
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Syrphidae) WITH THE DESCRIPTION  
OF TWO NEW SPECIES<sup>1</sup>**

F. CHRISTIAN THOMPSON

10 Edmunds Road, Wellesley Hills, Massachusetts, 02181

ABSTRACT

Two new species of the subgenus *Protolepidostola* Hull are described: **problematica** (Panama) and **evansi** (Mexico). The subgenus is here removed from synonymy with subgenus *Myolepta* (*Eumyiolepta*) Shannon and recognized as a valid subgenus of *Myolepta* Newman in the tribe Myoleptini. The tribe, genus and subgenus are recharacterized and keys given to their genera, subgenera, and species respectively.

The discovery of two new species has aided in the correct placement of the subgenus *Protolepidostola* Hull. This group was erected by Hull (1949) for what he believed was an aberrant member of the genus *Lepidomyia* Loew (= *Lepidostola* Mik). Fluke and Weems in their revision of the Myoleptini (1956) suggested that this unusual species, *scintillans* Hull, was actually a *Myolepta* (*Eumyiolepta*). This disagreement arose out of the fact that *scintillans* was known only from the male, whereas both sexes are necessary for accurate generic placement. The two presently described species are represented by the previously unknown female of *Protolepidostola* Hull; thus it is now possible to correctly place and evaluate this group.

<sup>1</sup> Accepted for publication July 21, 1967.

## The Tribe Myoleptini

A small group of rather diverse flies characterized by: 1) sexual dimorphism of the face; 2) at least hind femora enlarged and armed; 3) metasternum not well developed; 4) apical cell ( $R_5$ ) acute and drawn out to the wing margin; and 5) similar genitalic structure. The tribe is a very plastic group and as such it is difficult to define accurately. There are genera which show one or another exceptions to all the above characteristics, yet all these groups appear to be very closely related and distinctly separate from all other Cheilosiniinae except possibly *Chrysogaster*. *Cynorhina* and the Temnostomini of Xylotinae are the groups which appear to be the most closely related to the tribe. This relationship is an indication of the artificiality of these subfamily groupings. I consider the following genera to belong to the tribe: *Lepidomyia* Loew, *Lejota* Rondani, *Chromocheilosia* Hull and Fluke, *Cynorhinella* Curran, *Cacoceria* Hull, *Myolepta* (*Myolepta* Newman, *Eumyiolepta* Shannon and *Protolepidostola* Hull) and probably *Alipumilio* Shannon.

Fluke and Weems (1956) in their study of the group did not discuss or define the tribe as a whole, perhaps because they were not sure of the limits of the tribe, which is reflected by the genera they included or did not include in it. They correctly included *Lepidomyia* Loew but incorrectly included *Chalcosyrphus* Curran of the Xylotini. Also they excluded *Cynorhinella* Curran, *Chromocheilosia* Hull and Fluke, and *Cacoceria* Hull, which are all good genera of Myoleptini. These changes will be discussed in more detail in other papers.

*Lepidomyia* Loew, which Fluke and Weems included in the tribe solely on the grounds of genitalic similarity, is one of the problem groups. A well-developed facial tubercle is present in both sexes of this genus, an exception to the normal sexual dimorphism of this character in the tribe. On the other hand, the similarity of the genitalia, the femoral armature and shape, the presence of scalelike pile, and the similar facial shape and structure indicate that this must be one of the groups most closely related to *Myolepta*. The only differences between the two are the presence in *Lepidomyia* of a tubercle in the female and an elongate third antennal segment.

*Protolepidostola* lacks these two characteristics and therefore is placed in *Myolepta*. Fluke and Weems placed the genotype in the subgenus *Eumyiolepta*, but it is my belief that the distinctive head shape of *Protolepidostola* gives sufficient grounds for the retention of the group. This characteristic head shape illustrates the close relationship between *Myolepta* and *Lepidomyia* and suggests that the tubercle in the female of *Lepidomyia* might be a secondary development, not a primitive condition. It will be of interest to note whether the eyes of living *Protolepidostola* show the metallic patterns which are distinctive of living *Lepidomyia* and *Chrysogaster*.

## Key to the Genera of Myoleptini

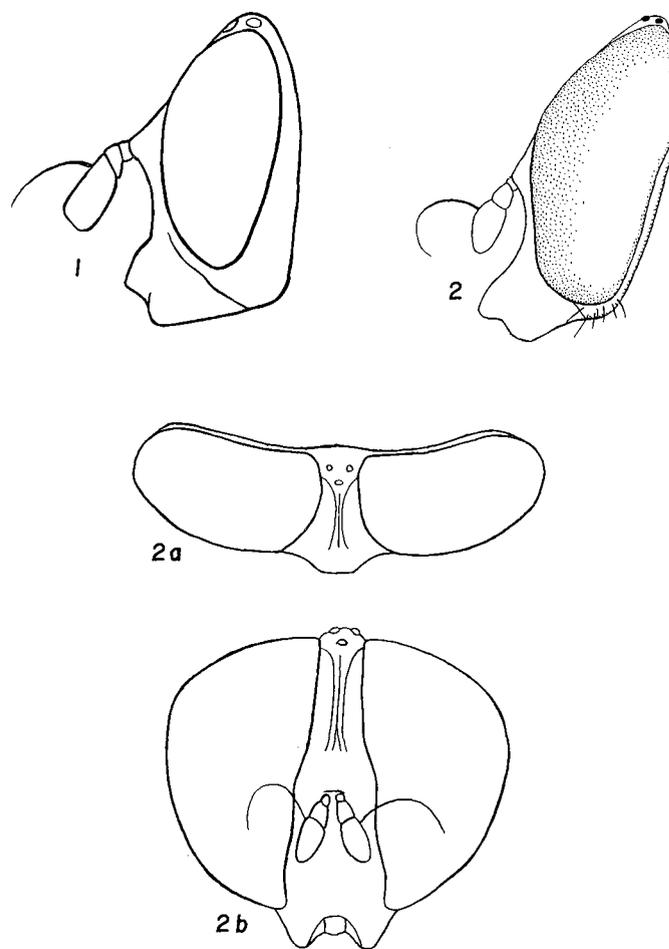
1. Antennae elongate, longer than or as long as the face; third antennal segment elongate, more than twice as long as wide ... 2  
Antennae short, never as long as face; third antennal segment short and oval ..... 3
2. Abdomen distinctly constricted; third antennal segment of male bifurcate; anterior four femora without spines .....  
..... *Cacoceria* Hull (Neotropical)  
Abdomen not constricted; third antennal segment simple; all femora with spines ..... *Lepidomyia* Loew (New World)
3. Abdomen greatly constricted; anterior margin of wing dark ...  
..... *Odyneromyia* Shannon and Aubertin (Neotropical, not of Myoleptini, but Temnostomini)
- Abdomen not constricted; wings hyaline ..... 4
4. Face greatly produced forward; hind femora usually with a large apical tooth ..... *Cynorhinella* Curran (Nearctic)  
Face not produced forward; hind femora without an apical tooth .. 5
5. Legs simple, never armed with teeth or spines; frontal prominence greatly produced, projecting well beyond the oral margin .....  
..... *Lejota* Rondani (Holarctic)
- At least the hind femora swollen and armed; frontal prominence not projecting beyond oral margin ..... 6
6. Hind femora microdentate and greatly swollen .....  
..... *Alipumilio* Shannon (Neotropical)
- Hind femora armed with spines, not teeth, and not greatly swollen ..... 7
7. Eyes pilose; anterior four femora not armed .....  
..... *Chromocheilosia* Hull and Fluke (Neotropical)
- Eyes bare; anterior four femora armed .....  
..... *Myolepta* Newman (Holarctic, Oriental and Neotropical)

The Genus *Myolepta* Newman

Small, usually dark flies. Face not produced forward, tuberculate in the males and concave in the females. Antennae inserted on a frontal prominence, always shorter than face, and with third segment short and oval. Eyes holoptic in males, dichoptic in females, and always bare. Metasternum bare or pilose and not well developed. Scutellum without a ventral fringe. All femora swollen and armed ventrally with spines. Wings with apical cell ( $R_5$ ) acute and drawn to the wing margin. Type-species: *Musca luteola* Gmelin.

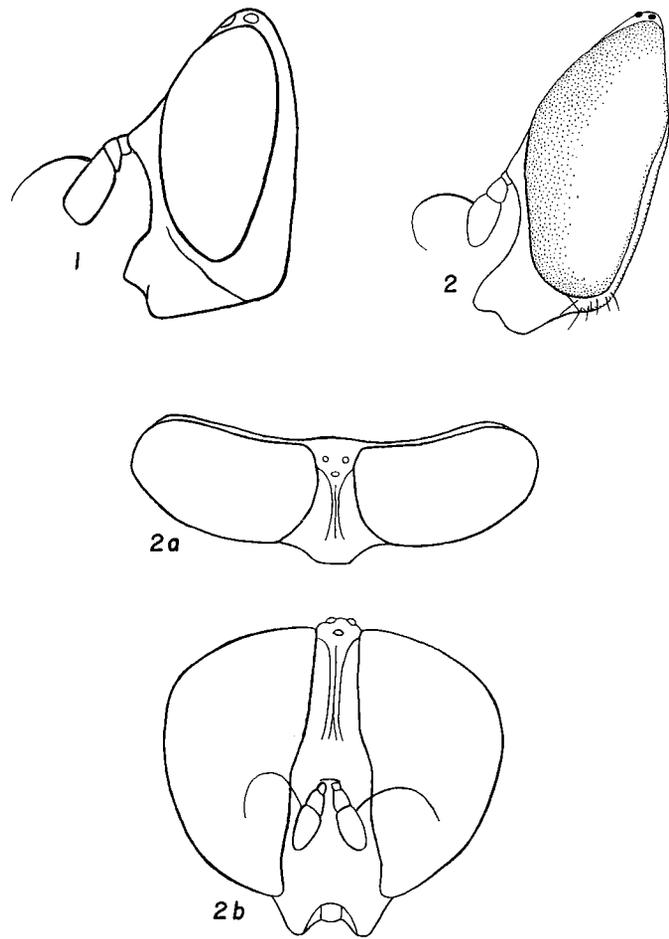
Key to the Subgenera of *Myolepta* Newman

1. With scalelike pile on thorax and sometimes on head and abdomen ..... 2  
Never with scalelike pile on body, although pile may be wiry ...



Heads of *Myolepta* spp. Fig. 1, *M. (Eumyiolepta) strigilata* Loew. Fig. 2, *M. (Protolepidostola) problematica*, sp. n. Fig. 1, 2, lateral view. Fig. 2a, dorsal view. Fig. 2b, frontal view.

- *Myolepta* Newman (Holarctic, Oriental, and Neotropical)  
 2. Head short, occiput reduced laterally; small compact flies (Fig. 2, a, b) ----- *Protolepidostola* Hull (Neotropical)  
 Head normal, not short; occiput not reduced laterally; not compact flies (Fig. 1) ----- *Eumyiolepta* Shannon (New World)



Heads of *Myolepta* spp. Fig. 1, *M. (Eumyiolepta) strigilata* Loew. Fig. 2, *M. (Protolepidostola) problematica*, sp. n. Fig. 1, 2, lateral view. Fig. 2a, dorsal view. Fig. 2b, frontal view.

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 Head normal, not short; occiput not reduced laterally; not compact flies (Fig. 1) ----- *Eumyiolepta* Shannon (New World)

The Subgenus *Protolepidostola* Hull

Small compact flies with scale-like pile on some parts of body. Head very short, compressed longitudinally; face narrow, deeply concave in female, tuberculate in male; antennae inserted on a low frontal prominence at or below middle of head; eyes very large, occupying two-thirds or more of head width, flattened; front narrow, occupying less than one-third of head width, with an impressed medial groove on upper three-fourths in female, distinctly punctuate on either side of this groove; occiput reduced laterally, just a mere line along upper one-half of the eyes, flattened. Antennae short, not longer than face; third segment short and oval, about twice as long as second segment. Thorax short and compact, metasternum bare, scutellum triangular without ventral fringe and apical groove. All femora swollen and armed with two ventral rows of short spines, mesotibiae armed with spines at its apex, hind tibiae with black setae basoventrally. Wings short, apical cell ( $R_5$ ) acute and drawn out to the wing margin, and with the spurious vein absent or indistinct. Abdomen short and compact. Type-species: *Lepidostola scintillans* Hull.

These flies closely resemble *Alipumilio* Shannon. The short, compressed head, with large flat eyes, reduced occiput, long narrow front and short concave face in the female; the short thorax and abdomen are all like *Alipumilio*. This resemblance may represent a convergence in appearance, probably the result of mimicry, due to having the same group of models.

It is possible that some of the species now included in *Eumyiolepta* might belong to *Protolepidostola*. *Myolepta* (*Eumyiolepta*) *braziliana* Shannon is most likely a *Protolepidostola*. The small size, the absence of the spurious vein, and the spurred apical crossvein all suggest this placement. *Myolepta* (*Eumyiolepta*) *minuta* Fluke also appears to be a *Protolepidostola*. Again the small size and peculiar wing venation would suggest this. Due to the lack of material, the placement of these two species is tentative. Their placement in the following key is based only on their original descriptions. It should be noted that *Myolepta transversa* Hine belongs to *Cerogaster*, not *Eumyiolepta* as placed by Fluke and Weems (1956), and probably should be renamed since *Syritta transversa* Walker is also a *Cerogaster*. This action, however, should be put aside until the genus is revised.

Key to the Species of *Protolepidostola* Hull

1. Apical crossvein twice angled, with short spurs at the angles; legs not bicolored, yellowish brown ..... *braziliana* (Shannon) 1927 (Brazil)
- Apical crossvein not twice angled or spurred; legs bicolored ..... 2
2. Wings with three brown clouds near the apex; apical cell ( $R_5$ ) not acute or drawn out to the wing margin ..... *minuta* (Fluke) 1956 (Argentina)

- Wings without brown clouds; apical cell acute and drawn out  
to wing margin ..... 3
3. Apical three protarsal segments black ..... 4  
Apical two protarsal segments black .....  
..... **problematica**, sp. n. (Panama)
4. Hind femora dark brown; squamae with white margins .....  
..... **evansi**, sp. n. (Mexico)  
Hind femora mostly orange; squamae with basal margin brown ---  
..... *scintillans* (Hull) 1946 (Brazil)

*Myolepta* (*Protolepidostola*) **problematica**, new species

Head shiny black, front with black and white pile. Antennae brown. Thorax with white scales and appressed black pile, squamae with brown margins. Legs dark except for orange basal tarsal segments and hind femora. Wings orange-tinted and without spurious vein. Abdomen completely orange.

**FEMALE.** Length 6 mm. *Head:* shiny black. Face with a few thickened opaque white hairs on side of epistoma and a band of white pubescence along sides and transversely under antennae where the band widens into a medial triangular patch and two large lateral patches; front with similar band of white pubescence along its sides, similar thickened white opaque pile scattered all over surface and black pile in the punctures; occiput completely covered with white pubescence, pile reduced, almost microscopic. Antenna brown, third segment lighter. Arista longer than antenna, orange.

*Thorax:* shiny black. Prothorax completely gray pollinose. Mesothorax except sternopleuron and hypopleuron covered with evenly spaced white scales; dorsum with appressed short black pile. Wings orange tinted, completely microtrichose. Squamae dirty white with brown margins. Halteres light orange. Legs black except for orange on bases of fore and middle tibiae, basal three tarsal segments of all legs, hind trochanters and the basal seven-eighths of the hind femora; with pale pile.

*Abdomen:* orange, with sparse white pile and a few scattered black hairs on third segment.

*Holotype:* female. Canal Zone, Barro Colorado, PANAMA, 25 July 1924 (Nathan Banks). The type is deposited in the Museum of Comparative Zoology, Harvard University (#31270).

*Discussion:* This species is related to *evansi*, new species, but it can be easily separated by the characters given in the key and by: 1) the much narrower face and front; 2) the shorter and more swollen hind femora; 3) the completely orange abdomen.

*Myolepta problematica* can be separated from *scintillans* Hull, which is somewhat more distantly related than *evansi*, by: 1) lack of creamy yellow pubescence on front; 2) lack of golden scales on

face and tip of abdomen; 3) orange hind femora and dark hind tibiae; 4) completely orange abdomen; 5) apical two protarsal segments dark; and 6) white, not golden, scales on thorax. The first two of these differences might be due to sexual dimorphism.

*Myolepta (Protolepidostola) evansi*, new species

Head shiny black, front with white pile only. Antennae brown. Thorax with white scales and appressed black pile, squamae all white. Legs dark except orange basal tarsal segments. Wings orange tinted and without a spurious vein. Abdomen mostly black with orange on lateral margins of first, second and third segments.

FEMALE. Length 7.5 mm. *Head*: shiny black. Face with band of white pubescence along sides and transversely under antennae where it widens into a medial triangular patch and two large lateral patches; a few fine white hairs on sides of epistoma; cheeks mostly covered with white pubescence and white pile; front with band of white pubescence along its sides which widens into large lateral patches at upper and lower ends of medial groove; and with a thickened white hair arising from each puncture; vertex with black pile; occiput completely covered with white pubescence and the occipital pile reduced, almost microscopic. Antennae orange brown. Arista orange except medial one-third brown.

*Thorax*: shiny black. Prothorax completely gray pollinose. Mesothorax except for sternopleuron and hypopleuron completely covered with evenly spaced white scales; dorsum with appressed short black pile. Wings orange tinted, completely microtrichose. Squamae and halteres white. Legs reddish brown except as follows: reddish on apices of femora and bases of tibiae; black on coxae, apical three protarsal segments and apical two meso- and metatarsal segments; yellow on all the remaining tarsal segments. Leg pile golden except white on coxae and black on apical tarsal segments.

*Abdomen*: black except orange on the lateral one-third of the first and second segment, the lateral one-fourth on the basal three-fourths of the third segment and all of the fifth segment. First three segments slightly white pollinose and the last two shiny. Pile of abdomen light. Venter orange with light pile.

*Holotype*: female. 16 km. east of Chilpancingo, Guerrero, MEXICO: 4700 feet; 30 July 1962 (H. E. Evans). The type is deposited in the Museum of Comparative Zoology, Harvard University (#31271).

*Discussion*: *Myolepta evansi* is very closely related to *scintillans* Hull but can be separated by: 1) lack of creamy yellow pubescence on the front; 2) lack of golden scales on face and fourth abdominal segment; 3) more extensive black area on abdomen; 4) completely white margins of squamae; and 5) longer thorax (thorax longer than broad, not broader than long). For the relationship of *evansi* to *problematica*, see the discussion under the latter.

## ACKNOWLEDGMENTS

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## REFERENCES

- Fluke, C. L., and Weems, H. V., Jr. 1956. The Myoleptini of the Americas. Amer. Mus. Novitates No. 1758. 23 p.
- Hull, F. M. 1946. The Genus *Lepidostola* Mik. Amer. Mus. Novitates No. 1326. 15 p.
- . 1949. The morphology and inter-relationship of the genera of syrphid flies, recent and fossil. Trans. Zool. Soc. London 26(4):257-408.
- Shannon, R. C. 1927. A review of the South American two-winged flies of the family Syrphidae. Proc. U. S. Natl. Mus. 70(9) #2658:1-34.