COSTA RICAN MYCETOPHILIDAE

(DIPTERA)

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(Plate XIII)

A collection of Diptera from the Republic of Costa Rica, secured by this Academy, made by Heinrich Schmidt contained the Mycetophilidae (exclusive of the Sciarinae) listed below.

The collection was made in 1930 at San José. San José is in the central plateau of the country, 3,868 feet above sea-level, and the center of a rich agricultural region. The rainy season is generally from April or May to December. The mean temperature is about 68° F.[1]

Two species of Mycetophilidae have been described from Costa Rica, *Ceroplatus minimax* Edwards and *Zygomyia aurantiacea* Edwards. Neither of these was represented in the Schmidt collection.

Three species in this collection apparently represent forms hitherto recorded only from Nearctica. There are three extensions in range of Neotropical species. Two new subspecies and ten new species are described.

Macrocera unica new species (Pl. XIII, figs. 1 and 2.)

This species resembles *Macrocera nobilis* Edwards in wing markings, and *M. valdiviana* Philippi in coloration except the median mesonotal stripe is not "T"-shaped.

Male. Total length 5 mm.; wing length 4.5 mm. Head brownish; ocelli surrounded by an area of black. Head furrows deep. Antennae yellow; scape slightly brownish. Prothorax yellow. Mesonotum yellow with three wide brown stripes; the median stripe abbreviated behind, not reaching the scutellum; the lateral stripes curving towards the lateral margins of

[1] Encyclopaedia Britannica, 14th Edition, Articles on San José and Costa Rica.

Monoclona abnormalis new species

These specimens possess vein Cu_1 at the wing margin; the macrotrichia are reflexed; Sc_2 ends in R_1 almost at the base of R_s; and they lack anepisternal setae. I consider them to as members of the genus *Monoclona* which have retained a short remanent of vein Cu_1.

This species differs from *Monoclona maculata* Edwards and *M. bicolor* (Enderlein)[2] and *Acnemia binocellaris* Edwards in the possession of a median ocellus. It lacks the wing markings of *A. fulvicollis* (Philippi).

Male. Total length 3 mm. Head brown. Palpi black. Antennae brown, yellow basally; flagellar pubescence white. Ocelli three, in a straight line; each ocellus surrounded by a narrow ring of black. Thorax yellow; mesonotum dusky with indications of dark stripes at the acrostical and dorsocentral rows. Anepisternites and pteropleurites bare; pleurotergites and postnotum setose; scutellum with four strong setae and several smaller setae. Legs yellow. Wings hyaline; C extends beyond tip of R_5; Sc_2 ends at or just beyond the base of R_s; R_4 present; stem of M little longer than r-m; Cu_1 an incomplete vein at the wing margin; anal strong. Halteres yellow. Abdomen deep brown with indications of basal yellow triangles on the tergites. Male terminalium yellow.

Holotype.—♂ ; San José, Costa Rica; August 21, 1930; (H. Schmidt); [Academy of Natural Sciences, Philadelphia. Type no. 6562].

Paratype.—1 ♂ ; San José, Costa Rica; I 4, 1930; (H. Schmidt).

Dziedzickia nigra new species

This species differs from *D. pubercornis* Edwards in the shorter antennae, the long Sc, the presence of macrotrichia on veins M and Cu, and the yellow first abdominal segment. It differs from *D. fiebrigi* Edwards in color, in the shorter stem of M, and in the position of the Cu fork.

Male. Total length 3 mm. Head black, shining; palpi and bases of antennae brownish. Thorax black; membrane surrounding the anterior spiracles and the wing bases, the halteres, and the hypoleurites yellow. Mesonotal disk bare except for biserial dorsocentral and acrostical hairs.

[2] = *Acnemia bicolor* End. + *A. vittidorsum* End. according to Edwards (Rev. Ent., Rio de Janeiro, IV, p. 363, 1934) who has examined the types.

the mesonotum anteriorly, reaching posteriorly to the scutellum, and giving off lateral branches to the wing bases. Scutellum yellow. Pleura brown, yellow below the wing bases. Legs yellow, distal ends of the meso- and metacoxae brown; tips of the fore tibiae suddenly widened with an apical comb (see fig. 2). Wings as figured (fig. 1). Halteres yellow. Abdomen yellow; distal half of second and third abdominal tergites dusky; sixth to eighth tergites dusky. Styles simple with two teeth as in *M. geminata* Johannsen.

Holotype.— ♂ ; San José, Costa Rica; November 2, 1930; (H. Schmidt); [Academy of Natural Sciences of Philadelphia, Type no. 6561].

Platyura (Proceroplatus) pictipennis Williston (Pl. XIII, fig. 6.)

1896. *Platyura pictipennis* Williston, Trans. Ent. Soc. London, 1896, p. 257; pl. 8, f. 10.

1925. *Platyura* (*Proceroplatus*) *pictipennis* Edwards, Trans. Ent. Soc. London, 1924, p. 523.

San José, Costa Rica; IV 5, VI 27, 1930; (H. Schmidt); 4 ♂.

The wing band in cell R_5 is wider than in Williston's figure. Abdominal tergites II–VI are dark basally and pale apically as in Williston's specimen.

They differ from Nearctic specimens of *P. elegans* Coquillet in not having abdominal segment V entirely yellow and in the structure of the male terminalium (fig. 6).

The antennae are shorter than in *P. catharinae* Edwards, there is a yellow line along the center of the mesonotum, and a hyaline spot at the tip of cell R_5.

Platyura (Lyprauta) chacoensis Edwards?

1931. *Platyura* (*Lyprauta*) *chacoensis* Edwards, Konowia, x, p. 77.

San José, Costa Rica; IV 29, IX 14, 1930; (H. Schmidt); 3 ♂.

These specimens agree with Edward's description except in the color of the mesonotum. The mesonotum is as described for *P.* (*L.*) *defecta* Edwards, but the brown cloud is at the wing tip. The halteres are entirely yellow.

Mycomyia tantilla Loew

1869. [*Sciophila*] *tantilla* Loew, Berl. Ent. Zeit., XIII, p. 140.

San José, Costa Rica; V 5–VI 19, 1930; (H. Schmidt); 2 ♂.

This species has only been recorded hitherto from Nearctica.

Pleurotergites bare.[3] Legs yellow; trochanters blackish. Wings hyaline; Sc ends in R at half the distance from the humeral cross-vein to the base of R_s, R_4 absent; stalk of M slightly longer than r-m. Cu forks under the proximal end of the r-m cross-vein. Halteres yellow. Abdomen black except the first and most of the fourth tergites, the posterior margins of the second and third tergites, and the venter of first to fifth tergites which are yellow.

Holotype.— ♂ ; San José, Costa Rica; June 14, 1930; (H. Schmidt). [Academy of Natural Sciences of Philadelphia. Type no. 6563].

Paratype.—1 ♂ ; same data; VII 1, 1930.

Leia schmidti new species (Pl. XIII, fig. 4.)

This species is very similar in coloration to the Nearctic species, *Leia bivittata* Say; the abdominal fasciae are not emarginate as is often the case with *L. bivittata* Say; the wings often lack the preapical fascia; the postnotum is rarely black or brown, usually yellow; the male terminalium differs. In Enderlein's key [4] the hyaline-winged forms run to *L. axillipunctum* Enderlein but veins M_3 and Cu_1 are complete to the wing margin; the fasciate-winged forms run to couplet 15 but differ in abdominal color. Edwards' species [5] all lack the large black mesonotal spots at the wing bases.

Male. Total length 4 mm. Head yellow, somewhat brownish between the ocelli; the three ocelli immediately surrounded by black. Antennae black except the scape and the undersides of the three basal flagellar joints. Thorax yellow with two large black spots at the wing bases which extend on the mesonotum from the scutellum anteriorly to the rudiments of the transverse suture, separated medially by yellow, and extend over the pteropleurites, pleurotergites, and hypopleurites; scutellum yellow with two strong scutellar setae; postnotum black to yellow. Wings hyaline or with preapical fascia; M_3 and Cu_1 reach the wing margin; Cu_1 narrowly detached at its base. Halteres yellow. Fore tibiae with a small sub-basal seta on the flexor surface; middle tibiae with four setae on the flexor surface. Legs yellow, tips of coxae, trochanters, and hind femora with black spots. Abdomen largely black with narrow yellow bases on segments

[3] The absence of pleurotergal hairs I have not considered of generic importance, as this species is so similar in other respects to those species possessing pleurotergal setae.

[4] Stett. Ent. Zeit., LXXII, 187, 1911.

[5] Rev. Ent., Rio de Janeiro, III, pp. 311-319. 1933.

one to six, seventh and eighth segments yellow; the rudimentary eighth segment with short setae. Terminalium black, anal lobes yellow (fig. 4).

Female. Similar to the male. In three specimens there is an indication of a median stripe, but they are otherwise apparently identical.

Holotype.— ♂ ; San José, Costa Rica; September 7, 1930; (H. Schmidt); [Academy of Natural Sciences of Philadelphia. Type no. 6564].

Allotype.— ♀ ; San José, Costa Rica; VIII 3, 1930; (H. Schmidt).

Paratypes.—20 ♂ ; 13 ♀ ; San José, Costa Rica; IV–IX 16, 1930; (H. Schmidt).

Leia bipunctata new species (Pl. XIII, fig. 5.)

This species is similar to *Leia schmidti* differing in having the black mesonotal spot above the wing base divided into two spots by a transverse yellow line; the hind femora with apex blackish, especially below; scutellum with four setae; postnotum yellow with its lateral portions black; vein M_3 bent toward M_{1+2} near the wing margin. Terminalium roughly similar to *L. schmidti* but the styles are more boot-shaped, the median ventral lobe is more rounded at the tip (fig. 5).

Holotype.— ♂ ; San José, Costa Rica; July 7, 1930; (H. Schmidt); [Academy of Natural Sciences of Philadelphia, Type no. 6565].

Allotype.— ♀ ; San José, Costa Rica; VI 11, 1930; (H. Schmidt).

Paratypes.—2 ♂ ; same data; April and VI 11, 1930; (H. Schmidt).

Leia oblectabilis (Loew)

1869. [*Glaphyroptera*] *oblectabilis* Loew, Berlin Ent. Zeit., XIII, p. 146.

Eighty-three specimens from San José taken from June through September apparently do not differ from Nearctic specimens.

Leia circumfera new species

This species runs to *L. picticornis* Kertéz in Enderlein's key,[4] but the center of the scutellum and the head are black in this species. This species is close to *L. diversipes* Edwards, the front tibiae possess a stout sub-basal seta on the flexor surface; the

color of the legs differ; the wings are hyaline; the stem of M is longer; the halteres are yellow. This species differs from *L. monoleuca* Edwards in lacking the terminal white antennal segment and in leg coloration.

Female. Total length 4 mm. Head black, face and palpi brown; scape yellow, flagellum brown. Thorax black, shining except humeral angles of the mesonotum, lateral portions of the scutellum, the membranes surrounding the anterior spiracles and the wing bases yellow. Pronotum brownish, yellow ventrally. Scutellum with two strong setae. Wings hyaline, stalk of M $\frac{7}{9}$ as long as r-m; M_3 and Cu_1 do not reach the wing margin; Cu_1 narrowly broken at its base. Halteres yellow. Legs yellow; hind coxae dusky at the base, trochanters dusky, middle and hind femora with black edges all around their circumference in lateral aspect. Abdomen black, yellowish below at its base. The paratype has basal yellow bands on the second to fifth abdominal segments but is otherwise similar.

Holotype.— ♀ ; San José, Costa Rica; June 20, 1930; (H. Schmidt) ; [Academy of Natural Sciences of Philadelphia. Type no. 6566].

Paratype.— ♀ ; Same data; June 19.

Leia analis new species (Pl. XIII, fig. 3.)

This species runs to *L. truncatovenosa* Enderlein and *L. axillipunctum* Enderlein in Enderlein's key but differs from the former in the slight break at the base of Cu_1; Cu_2 is complete, the tibiae of all but one individual lack the brown spots below and the scutellum is yellow. It differs from the latter in having the wing spot small, Cu_2 not straight beyond the prominent bend but bent anteriorly at its tip. It differs from the " completa group " in having M and Cu_1 not reaching the wing margin; it resembles the " incompleta group ", but lacks the apical wingband, the fore tibiae have a stout bristle on their flexor surfaces; there are only two scutellar setae.

Male. Total length 3.2 mm. Head yellow; three ocelli surrounded by black. Antennae and palpi yellow. Thorax yellow; mesonotum with minute black spot above the wing bases; pleura yellow; scutellum yellow with two strong scutellar setae; postnotum yellow. Wings hyaline; M_3 and Cu_1 do not continue to the wing margin; Cu_1 narrowly detached at its base. Halteres yellowish-white. Legs yellow, fore tibiae with a strong black subbasal setae on the flexor surface. Abdominal tergites one through four yellow with wide brown posterior margins, tergites five and six dark

brown with yellow posterior margins, tergites seven and eight yellow, terminalium yellow (fig. 3).

Female. Similar to male in size, leg structure, wing venation, and color except the abdomen which is almost uniformly brown.

Holotype.— ♂ ; San José, Costa Rica; September 7, 1930; (H. Schmidt); [Academy of Natural Sciences of Philadelphia. Type no. 6567].

Allotype.— ♀ ; San José, Costa Rica; IX 5, 1930; (H. Schmidt).

Paratypes.—6 ♂ , 3 ♀ ; San José, Costa Rica; V 5, 1930, VII 20-29, 1930, IV 2-10, 1930; (H. Schmidt).

One male differs strikingly in coloration but not in structure from the type and other paratypes. The abdomen is similar to that of the female; top of head brown; mesonotum with three stripes; pleura especially pleurotergites brown; postnotum brown.

Leia bivittata tropicalis new subspecies

This species belongs to the " fasciata group " having the second antennal segment with a seta and the rudimentary eighth segment of the male with a row of setae. It lacks the wing spot and band of *L. falculata* Edwards and the anepisternites and pleurotergites are not black. *L. fasciata* (Kertéz) differs in the black anepisternite. This subspecies differs from *L. halterata* (Kertéz) in the larger spot over the wing bases, legs without brown marks, no wing bands or spots, halteres entirely yellow. I consider these specimens as subspecies of *L. bivittata* Say.

This species is similar to *L. bivittata* Say but the lateral spots on the mesonotum are large, oval, shining black, but not connected posteriorly with a broad black pleural area, the pleura being entirely yellow. Scutellum with four strong setae. Postnotum yellow. Legs yellow. Wings hyaline, venation as figured by Johannsen for *L. bivittata* Say.[5] The terminalium is identical in form except in the form of the tips of the supra-anal lobes (median ventral process of Johannsen, fig. 98 l.c.). Abdomen yellow with black posterior margins to the tergites.

Holotype.— ♂ ; San José, Costa Rica; September 10, 1930; (H. Schmidt); [Academy of Natural Sciences of Philadelphia. Type no. 6568].

Allotype.— ♀ ; Same data; VII 15, 1930.

[5] Maine Agr. Exp. Sta., Bull. 196, fig. 207, 1911.

Leia bivittata punctiformis new subspecies

Differs from the above subspecies only in having the mesonotal spots minute.

Holotype.—♂ ; San José, Costa Rica; June 28, 1930; (H. Schmidt) ; [Academy of Natural Sciences of Philadelphia. Type no. 6569].

Paratype.—1 ♂ ; same data; VII 16, 1930.

Leiella bicolor new species

This species is apparently very similar to the genotype, *L. ochreocalcar* End., but the lateral margins of the mesonotum are broadly yellow and the first and fourth abdominal segments are yellow. The wing fascia is at the distal end of the wing as in the specimens of *L. ochreocalcar* noted by Edwards in the Dresden and Vienna Museums.

Male. Total length 4 mm. Head black above, yellow below the ocelli. Antennae with scape and basal flagellar joints yellow, flagellum darkened distally. Prothorax yellow, pronotum with a long, strong seta at its cephalo-dorsal angle. Mesonotum black with wide yellow lateral margins. Scutellum black with 4 strong marginal setae. Postnotum black. Membrane surrounding the anterior thoracic spiracle yellow. Anepisternites, sternopleurites, pteropleurites and pleurotergites black. Anepisternites and sternopleurites longer than broad. Wings with a brown spot in base of cell Sc, distal third of wing brown, deeper towards the costal margin. Base of R_s present. M_{1+2} and Cu_1 detached at their bases. Halteres yellow. Coxae yellow; trochanters black; fore femora darkened at their bases, middle and hind femora black, each side with a lateral, oval, yellow spot. Abdomen black, tergites one and four yellow, venter of one to four yellow. Terminalium black.

Holotype.— ♂ ; San José, Costa Rica; August 22, 1930; (H. Schmidt) ; [Academy of Natural Sciences of Philadelphia. Type no. 6570].

Novakia distincta new species

This is the first Neotropical species to be referred to this genus. Three ocelli with the laterals removed from the eye margins by about twice the diameter of the ocellus; the short Sc ending free, the very short R_1, the nearly horizontal r-m which is twice as long as R_1 seems to place this species in *Novakia.*

Male. Total length 1.8 mm. Head black, palpi yellow; antennae black, scape brown. Second joint of scape with a long dorsal seta. Ocelli three; the laterals removed from the eye margins by about twice the diameter of an ocellus. Thorax black; scutellum with four marginal setae, the median pair longer. Mesonotal and scutellar setae yellowish. Legs yellow; middle and hind coxae blackish at base; middle femora below and hind femora black; hind tibiae blackish. Middle femora with a sensitive area on their extensor surfaces above which the femora are slightly swollen. Wings hyaline; C extends beyond R_s three-fifths of the distance to M_{1+2}; Sc short, ending free; R_1 very short; one-half as long as r-m which is longitudinal in position; M forks under the base of R_s; Cu forks proximad of M fork; Anal vein fine but distinctly setose, ends at the level of the Cu fork. Halteres yellow, abdomen black including terminalium. Seventh segment retracted.

Female. Similar to male.

Holotype.— ♂ ; San José, Costa Rica; September 2, 1930; (H. Schmidt); [Academy of Natural Sciences of Philadelphia, Type no. 6571].

Allotype.— ♀ ; same data; IX 10, 1930.

Paratypes.—6 ♂ , same data; IX 5-19, 1930; (H. Schmidt).

Allodia callida Johannsen

1911. *Allodia callida* Johannsen, Maine, Agr. Exp. Sta., Bull. No. 196, p. 319, fig 135.

San José, Costa Rica; IX 7 and 13, 1930; (H. Schmidt); 2 ♂ .

There is but one other species described as belonging to this genus in the Neotropical region, *Allodia brevicornis* Enderlein, Edwards [6] suggests that the latter belongs to *Neallodia.*

These specimens have the costa ending at the tip of R_5; they are identical with specimens from New York.

Sceptonia ornatifemora new species (Pl. XIII, figs. 7 and 8.)

There is only one described Neotropical species in this genus, *S. longicornis* Enderlein. This species differs from Enderlein's southern Brazilian one in size only, according to Enderlein's description which gives mostly characters of generic rank. Because of the difference in range and size I consider these two forms as distinct species.

[6] Rev. Ent., Rio de Janeiro, II, p. 147, 1932.

Male. Total length 2.3 mm. Head black shining, antennal bases yellow. Thorax black, wing bases and halteres yellow. Legs yellow; extreme bases of hind coxae blackish, hind femora with their apical halves black. Fore tibia slightly longer than fore basitarsus, middle tibia with one seta below. Abdomen black, terminalium yellow and somewhat similar to *S. subnigra* Fisher (= *S. nigra* Mg.) as figured by Johannsen[7] nec *S. nigra* Mg. of Edwards,[8] but differs in the form of the styles (figs. 7 & 8).

Female. Similar to the male.

Holotype.— ♂ ; San José, Costa Rica; August 4, 1930; (H. Schmidt); [Academy of Natural Sciences of Philadelphia. Type no. 6572].

Delopsis planiventris (Enderlein)

1911. *Plastocephala planiventris* Enderlein, Stett. Ent. Zeit., LXXII, pp. 176-178.

San José, Costa Rica; V 15, 1930; (H. Schmidt); 1 ♀.

I believe this species is Enderlein's *Plastacephala planiventris*. If so, *Plastacephala* is a synonym of *Delopsis* as was suggested by Edwards.[9]

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[7] Maine Agr. Exp. Sta., Bull. 200; fig. 96, 1912.

[8] Trans. Ent. Soc. London, 1924: pl. 57, figs. 158, 159.

[9] Rev. Ent., Rio de Janeiro, II, p. 148, 1932.

EXPLANATION OF PLATE XIII

Fig. 1.—*Macrocera unica*—wing.

Fig. 2.—*Macrocera unica*—tip of fore tibia.

Fig. 3.—*Leia analis*—lateral aspect of male terminalium.

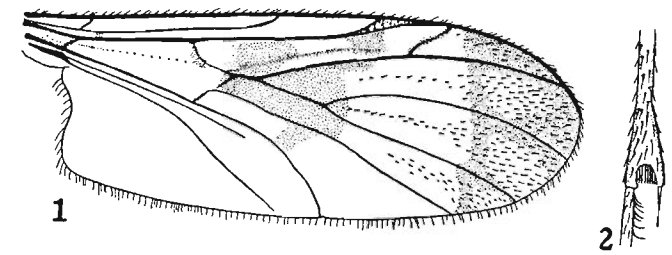
Fig. 4.—*Leia schmidti*—dorsal aspect of male terminalium.

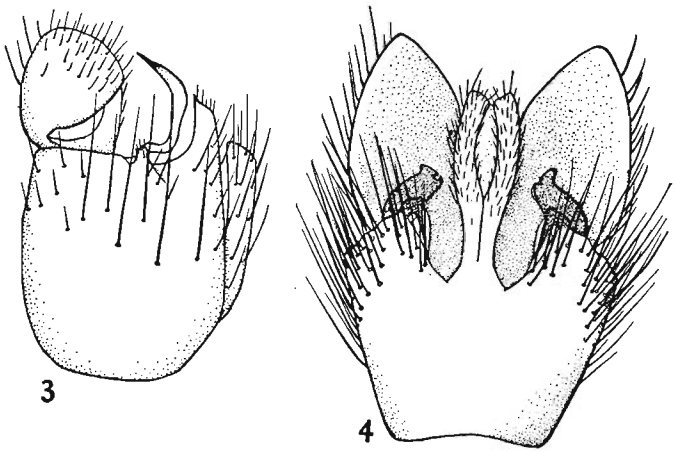
Fig. 5.—*Leia bipunctata*—dorsal aspect of male terminalium.

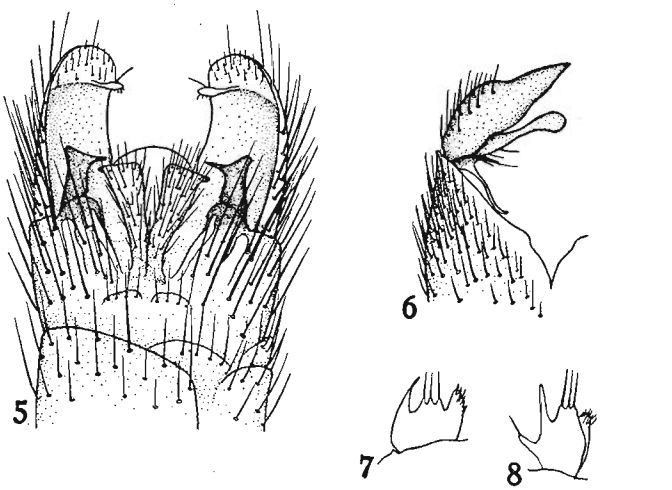
Fig. 6.—*Platyura pictipennis*—ventral aspect of left style.

Fig. 7.—*Sceptonia ornatifemora*—dorsal aspect of right style.

Fig. 8.—*Sceptonia ornatifemora*—lateral aspect of style, dorsal to the left.







FISHER—MYCETOPHILIDAE