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A New Species of *Lepiselaga* Macq.
with Remarks on Related Genera

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 A NEW SPECIES OF *LEPISLAGA* MACQ.
 WITH REMARKS ON RELATED GENERA

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The discovery by Dr. Vernon Lee of a new species of *Lepiselaga* in Colombia, provides the opportunity to review the taxonomy of the group and to make some suggestions as to the relationships of the species to each other, as well as to other genera usually considered to be related.

Lutz (1913) erected the subfamily *Lepidoselaginae* to contain *Lepiselaga*, *Selasoma*, *Himantostylus*, and *Stigmatophthalmus*, the last two described as new. Lutz accepted Osten Sacken's invalid emendation of *Lepiselaga* to *Lepidoselaga*, but used both interchangeably in this publication. He also stated that the subfamily would contain other unnamed Australian and African species. Enderlein (1925) retained the group as a tribe *Lepiselagini* for 9 more or less unrelated genera, but including *Lepiselaga* and *Himantostylus*, though not *Selasoma* or *Stigmatophthalmus*, which were placed in the tribes *Tabanini* and *Dichelacerini* respectively. Kröber (1934) included *Lepiselaga* and *Selasoma* in the subfamily *Lepiselaginae*, but placed *Himantostylus* in the *Stenotabaninae* and relegated *Stigmatophthalmus* to the position of a subgenus of *Di cladocera* in the subfamily *Tabanini*. Fairchild (1942) placed *Lepiselaga* and *Selasoma* in *Tabaninae*, tribe *Lepiselagini*. Finally Mackerras (1955) included all the Neotropical *Tabaninae* with bare basicosta in one tribe, *Diachtorini*.

As presently known, *Selasoma*, *Stigmatophthalmus* and *Himantostylus* are monotypic, each containing but a single rather aberrant species, and will be discussed first.

Selasoma Macquart

1838, Dipt. Exot. 1(2): 187. Type *Tabanus tibialis* Fab.

Kröber (1934) included also *T. nigrocoeruleum* Rond. 1850 and *S. giganteum* Lutz 1913. The latter is a species of *Stibasoma*, as noted earlier (Fairchild 1961), while recent examination of the type of *nigrocoeruleum* in Naples shows it to be the same as *Di cladocera acheronitens* Kröb. 1931 (New synonymy). *S. tibiale* has a wide range in the Neotropics, being recorded from Oaxaca, Mexico to southern Brasil, but seems everywhere uncommon and local.

The position of *Scelasoma*, similar in its coloration and incrassate tibiae to *Lepiselaga*, is dubious. It has generally been placed near *Lepiselaga* (Lutz 1913, Enderlein 1925, Kröber 1934) but there are fundamental points of difference. The basicosta bears a fair number of setae, the palpi are greatly inflated but not flattened, the frons is narrow with a rugose linear callus nearly filling it and without tubercle or ocelli at vertex, the labella are large and wholly membranous, the first antennal segment is not elongate, the second bears a dorsal tooth and the basal plate of third is wide and flattened. The eyes are unpatterned in life, dull greenish black, while those of *Lepiselaga* and *Himantostylus* are characteristically banded. According to Lutz (1913) the species is crepuscular and bites horses on the belly. Records from Panama confirm this.

Stigmatophthalmus Lutz

1913, Mem. Inst. Osw. Cruz, 5(2): 174, 184-185, Pl. 13, fig. 23. Type *Stigmatophthalmus altivagus* Lutz.

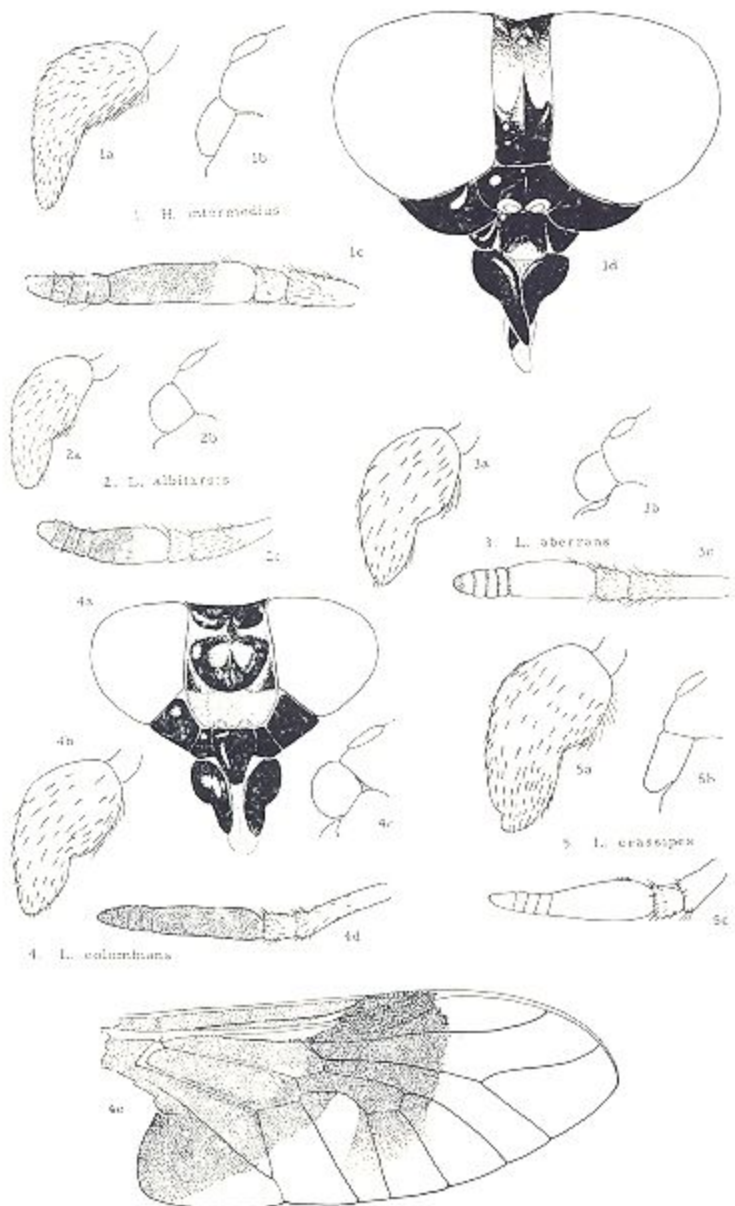
Stigmatophthalmus altivagus Lutz was placed by Lutz (1913) with *Scelasoma* and *Lepiselaga*, by Enderlein (1925) near *Stibasoma*, and by Kröber as a subgenus of *Di cladocera*. It has, however, setose basicosta, large membranous labella, and no vestiges of ocelli. The wing pattern is somewhat like *Scelasoma*, though more extensively black, and the fore tibiae slightly incrassate. Except for the wing color, there seem to be no characters that would exclude it from *Tabanus*, much less allow placement in the *Diachlorini*. It certainly does not seem in any way related to *Lepiselaga* or even *Scelasoma*. Lutz figures the species as with green eyes with a single dark band. I have given a figure of head structures elsewhere (Fairchild 1961). Nothing is recorded of its habits, and it seems to have been taken only about Petropolis and in the mountains of Sta. Catarina in southern Brasil.

Himantostylus Lutz

Fig. 1

1913, Mem. Inst. Osw. Cruz, 5(2): 174, 183-184, Pl. 13, fig. 22. Type *H. intermedius*.

The genus and species were based on a single male from eastern Peru. Stone (1934) later described the female from Bolivia. A long series of females and a single male were secured in Darien, Panama, in 1963, and there are other specimens collected by Luis E. Peña at Quincemil, Dept. Cuzco, Peru, Oct. 1962 in the collection of Dr. L. L. Pechuman. Panama specimens are darker, having the cubital cell and anal area as dark as the basal cells, not paler as in the type and other Peruvian material.



Himantostylus Lutz, as suggested by Stone (1934) and Barretto (1949), is very similar to *Lepiselaga* but differs structurally in having a strong tubercle at vertex with well marked vestiges of ocelli, a quite different frontal callus, and in lacking the narrowed discal cell. The labella are also without sclerotized strips, and the palpi less highly modified. The palpi of male *Himantostylus* are porrect, oval, inflated and shiny, those of *Lepiselaga* are decumbent and similar to the female, though more slender and less flattened.

Many of the peculiarities and similarities of *Lepiselaga* and *Himantostylus* may be due to what might be termed mimetic convergence. All the species bear a strong resemblance in size, coloration, and to some extent in actions, to stingless bees of the genus *Trigona*. This resemblance is strongest in *Himantostylus* and the subgenus *Conoposelaga*, less marked in *L. crassipes*. The latter at least is preyed upon by certain solitary wasps, as noted by Bates over a century ago (Bequaert 1926). *Himantostylus intermedius* is especially bee-like in its actions. In a jungle camp on the Rio Tacarcuna, Darien Province, Panama, I collected a good series of this species, and had an opportunity to observe its actions. The flies flew silently close to the ground, clustering on my canvas and rubber boots and seldom alighting above the ankles. They crawled busily over the boots in the manner of stingless bees investigating an attractive surface, but were unable to penetrate the thick material. When a hand was placed on the boots, they crawled over the fingers, but made no attempt to bite. *L. crassipes* also seems to prefer the lower part of the body, and also sometimes crawls about in a bee-like manner, but it bites viciously when a suitable site is found. Little is recorded as to the habits of the other species. Lutz (1913) notes that the original series of *L. aberrans* was taken at 3 p. m. and bit man and horses avidly. The original specimens of *L. albitarsis* were collected by D'Orbigny in 1827. His original journal is preserved in the

EXPLANATION OF PLATE 15

Figures of heads, notopleural lobes and wing are to the same scale. The wing measures 5.3 mm. Figures of antennae and palpi are also to the same scale, but twice the magnification of heads.

Fig. 1 *Himantostylus intermedius* Lutz. a, palpus; b, dorsal view of notopleural lobe; c, antenna; d, head, frontal view, Panama. Fig. 2 *Lepiselaga (Conoposelaga) albitarsis* Macq. a, palpus; b, notopleural lobe; c, antenna, Argentina. Fig. 3 *Lepiselaga (Conoposelaga) aberrans* Lutz. a, palpus; b, notopleural lobe; c, antenna. Paratype. Fig. 4 *Lepiselaga (Conoposelaga) colombiana* n. sp. a, head; b, palpus; c, notopleural lobe; d, antenna; e, wing. Holotype. Fig. 5 *Lepiselaga (Lepiselaga) crassipes* Fab. a, palpus; b, notopleural lobe; c, antenna, Panama.

Museum d'Histoire Naturelle in Paris, and Dr. Tsacas kindly secured for me a photocopy of the parts dealing with Diptera. D'Orbigny records under number 9533-37, the number borne by the types, that the species lives on the banks of the Parana along its whole length, that its bites are very painful and that the local inhabitants, who already suffer much from the attacks of mosquitoes and a multitude of other insects, fear this species greatly, as it torments them cruelly and returns ceaselessly to the attack. These remarks indicate that *albitarsis* as well as *aberrans* have feeding habits similar to *crassipes*, but different from *Himantostylus*.

In summary, I believe that *Stigmatophthalmus* and *Selasoma* are both isolated and unrelated genera best placed in the tribe Tabanini. They may well be relatively old elements whose connections have disappeared. *Stigmatophthalmus altivagus* is a rather rare species, seemingly confined to the higher altitudes of the coast range of south eastern Brasil. *Selasoma* is widespread from Mexico to Brasil, but apparently local in occurrence. *Himantostylus* I believe belongs in the *Diachlorini*, but I think its resemblances to *Lepiselaga* are more likely due to mimetic convergence rather than close relationship in a phylogenetic sense. To me it appears closer to *Diachlorus* and *Stenotabanus* than to *Lepiselaga*, but it is in any event rather isolated.

I give below a key to the genera discussed here. All the species are black or largely so, with basally black wings, rather stout and chunky build, and tibiae more or less inflated.

KEY TO THE GENERA

1. Discal cell (1st M_2) of wings constricted, the vein forming its posterior margin strongly arched upward, the cell entirely infuscated. *Lepiselaga* 2.
Discal cell normal, either wholly or partly hyaline, or with a hyaline spot. 3.
2. Frons about twice as high as wide, parallel sided, the vertex without bare area. Notopleural lobes not strongly protruding. Body when undenuded clothed with greenish iridescent scales. (*Lepiselaga*)
Frons as wide or wider than high, widened below, the vertex protuberant and shiny. Notopleural lobes strongly inflated and protuberant. Body without greenish scales (*Conoposelaga*)
3. Basicosta bare. Small species less than 9 mm. long. Antennae slender, the basal plate of third segment subcylindrical, about twice length of style. Three distinct ocelli at vertex. Wing basally black or dusky to ends of basal cells, beyond this wing

- glass clear with yellow veins and stigma. *Himantostylus*
 Basicosta at least sparsely setose. Large species generally over
 12 mm. Basal plate of antennae broad, or with a strong dorsal
 angle. No ocelli. Wing more extensively black, the discal cell
 at least half black. 4+
4. All tibiae greatly inflated. Palpi greatly inflated and shiny. Sub-
 callus, face and cheeks largely shiny. Basal black of wing extend-
 ing to middle of discal cell, with a small clear spot in first and
 second basal cells near apex. Antennal plate broad and flattened,
 much longer than style, obtusely angulate above. *Selasoma*
 Fore tibiae slightly inflated, others normal. Palpi slender, polli-
 nose. Subcallus, face and cheeks brown pollinose. Basal black
 of wing extending beyond end of discal cell, the latter with a
 small transverse oval hyaline fenestra beyond middle. Antennal
 plate with a strong acute dorsal angle, almost a spine, the plate
 but slightly longer than style. *Stigmatophthalmus*.

Lepiselaga Macquart

1838, Dipt. Exot., 1(1): 153. Kröber, 1934, Rev. Ent. 4(2): 252. Fairchild
 1942, Ann. Ent. Soc. Amer., 35(3): 290. Type *Tabanus lepidotus* Wied.
 (= *crassipes* Fab.)

Hadrus Perty, 1833, Del. Anim. Artic., Brasil, p. 183 (nec Dejean 1833
 Coleoptera).

Lepiduselaga Osten Sacken, 1876, Mem. Boston Soc. Nat. Hist., 2: 435.

Conoposelaga Barretto, 1949, An. Fac. Med. Univ. S. Paulo, 24: 87-88. Type
Lepiselaga aberrans Lutz.

The most recent definition of the genus is by Fairchild (1942).
 To this may be added the condition of the discal cell, which is nar-
 rowed in the middle by the strong anterior bending of vein M_2 where
 it forms the posterior border of the discal cell.

L. aberrans Lutz, (Fig. 3) for which Barretto erected the genus
Conoposelaga, differs from *L. crassipes* (Fig. 5) most notably in the
 inflated notopleural lobes, inflated scutellum, broad frons with shiny
 vertex, and longer first antennal segment. These characters are to
 a considerable extent shared by *L. albitarsis* Macq. (Fig. 2) and the
 new species described below, so that there is justification for Barretto's
 action. I prefer, however, in view of the obviously close relationship
 of the four species, to retain *Conoposelaga* in a subgeneric sense.

***Lepiselaga* (*Conoposelaga*) *colombiana* n. sp.**

Fig. 4

A small black species resembling *L. albitarsis* but with narrower
 frons, longer third antennal segment, and abdomen black tomentose
 dorsally.

Female. Length 6 mm., of wing 5.5 mm. Eyes short and sparsely pilose. Frons as figured, largely black and shiny, the pollinose areas dark brown. Subcallus yellow brown, wholly shiny and rather inflated. Frontoclypeus and genae wholly shiny black. Antennae and palpi as figured. Proboscis short, about equalling head height, the labella small and compact, at least partially sclerotized.

Mesonotum black, thinly dark pollinose with scattered brassy hairs, the notopleural lobes globose, shiny, sparsely dark haired. Scutellum black and shiny, somewhat inflated. Pleura and sternum dark brown pollinose, sparsely black-haired. All legs, except white tarsi, black and black-haired. All tibiae strongly incrassate. Halteres brown with brown knob. Wing as figured, the costal cell and basal cells dark yellowish brown, rest of pattern blackish.

Abdomen with first tergite velvety black with a small patch of yellow at extreme sides. Second tergite velvety black in middle third, lateral thirds shiny yellow. Third and fourth tergites largely velvety black, the lateral yellow decreasing posteriorly. Remaining tergites shiny black. The abdomen also bears scattered long yellow hairs, denser laterally and posteriorly. Beneath the abdomen is wholly shiny, yellow on first two or three segments, black on the remainder.

Holotype female, Barbascal, Intendencia de Meta, Colombia, 23 Sept. 1964, Vernon Lee coll. To be deposited in M.C.Z., Cambridge, Mass.

Paratype female, same data. The paratype is slightly smaller and with considerably less yellow on abdomen. The species can be separated from related species by the characters given in the key.

Key to species of *Lepiselaga*

1. Basal plate of third antennal segment longer than first two antennal segments. Black wing pattern with about 9 small round clear spots. Frons about twice as high as wide, with a small round basal callus. No bare area at vertex. Whole dorsum, including frons, with greenish metallic scales.
 (*Lepiselaga*) *crassipes* Fab.
- Basal plate shorter than first two antennal segments. Black wing pattern with no more than 3 round clear spots. Frons as wide as high or wider, the callus large and diffuse, the vertex extensively bare. Body without greenish scales. . . (*Conoposelaga*) 2.
2. Tergites 2 to 4 of abdomen orange yellow, with broad transverse orange pollinose bands. Dark wing pattern brownish, with a spur reaching hind margin in fourth posterior cell (3rd M).
 *aberrans* Lutz.

Abdomen at most yellowish horn colored at sides of anterior segments. Posterior spur of wing pattern fails to reach hind margin.

3. Frons markedly wider than high, much wider below than at vertex. Third antennal segment basally yellow, the plate much less than twice length of style. Posterior spur of dark wing fascia narrow, ending abruptly. Only first tergite velvety black, the rest shiny. *albitarsis* Macq.
 Frons about as high as wide, slightly widened below. Third antennal segment black, the plate twice length of style. Posterior spur of wing fascia broad, fading out in fourth posterior cell before wing margin. Tergites 1 to 4 extensively velvety black dorsally. *colombiana* n. sp.

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