

New or little-known Tipulidae in the collection of the Deutsches Entomologisches Institut (Dipt.).

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(With 2 fig.)

Through the kindness of Dr. Walther Horn, I have been privileged to examine the undetermined Tipulidae in the collection of the Deutsches Entomologisches Institut. Several of the species included in this collection proved to be of unusual interest. In this paper, I am discussing certain Tipuline forms from Brazil and Chile, together with a few critical notes on the genera of *Tipulinae* described by Enderlein in 1912. I wish to extend my very sincere thanks to Dr. Horn for the opportunity of examining this rich series of crane-flies. All material has been returned to Dr. Horn.

Ozodicera (Ozodicera) epicosma n. sp.

General coloration of the thorax buffy yellow, the praescutum with

four brown stripes that are confluent behind; wings with a handsome pattern, the costal region broadly dark brown, the posterior margin paler brown, the median portion cream-colored.

Male. — Length 23 mm; wing 18 mm; antenna about 6 mm.

Frontal prolongation of the head elongate, reddish brown, darker laterally and beneath, the nasus short and stout; palpi dark brown. Antennae with the scape and pectinated segments brownish yellow, the branches and terminal simple segments darker; pectinations a little longer than the segments that bear them, with the exception of the last which is a little shorter; simple flagellar segments elongate, together about a fourth longer than the combined pectinate segments. Head brown; vertex at its narrowest point only a trifle wider than the first scapal segment.

Pronotum brown. Mesonotal praescutum obscure buffy yellow, with four brown stripes that are confluent behind, the intermediate pair separated from one another only on the anterior half; scutal lobes brown, the posterior lateral third more buffy; scutellum and postnotum brown, the color concealed by a heavy buffy-yellow pollen. Pleura brown, the color about concealed by a heavy whitish to yellowish pollen; dorso-pleural membrane dark brown, to produce a dorsal longitudinal stripe. Halteres dark brown, the base of the stem a little paler. Legs with the coxae brown, sparsely pruinose; trochanters darker brown; femora brownish yellow, the bases brighter, immediately before the tips with a vague darker ring; tibiae brown, the tips narrowly darkened; tarsi brownish black. Wings handsomely patterned, the costal margin being broadly dark brown, the median portion cream-colored, the posterior third more greyish brown; the dark anterior border includes the prearcular cells; cells *C*, *Sc*, *Sc*₁, 2nd *R*₁, the broad bases of cells *R* and *M*; a large oval area at origin of *Rs*, and a very broad seam on the anterior cord, cell 1st *R*₁ being darkened except for a pale suffusion on the basal third; the cream-colored center includes the broad bases of cells *Cu*, 1st *A* and 2nd *A*; the portions of cells *R* and *M* not darkened, as discussed above, and an extensive area beyond the cord, including most of cells 1st *M*₂ and *R*₅ and the adjoining portions of cells *R*₃ and the extreme base of cell *M*₁; posterior cord and outer end of cell 1st *M*₂ broadly seamed with darker brown; the dark posterior border includes all of the remaining cells of the wing, cells 2nd *M*₂, *M*₃ and *M*₄ being uniformly infused, the infuscation being connected with the anterior darkened region around the wing-tip; veins brown, dark brown in the darkest areas, more yellowish brown in the creamy portions. Venation: Cell *M*₁ broadly sessile, the proximal end being longer than *r-m*.

Abdomen reddish brown, the lateral margins of the tergites darker brown, becoming broader behind; distal sternites and the hypopygium

darker brown. Male hypopygium small. Ninth tergite relatively short, the caudal margin with a narrow V-shaped median notch, the lateral lobes thus formed broadly obtuse to subtruncate. The combined ninth sternite and basistyle elongate. Caudal margin of the dististyle produced into a slender, gently curved, reddish hook, the tip of which is weakly and unequally bifid.

Hab. Brazil (Espírito Santo).

Holotype, ♂, Porto do Cadi, March 1921 (F. Hoffman); Arp. dedic. 1921.

Ozodicera epicosma is well-distinguished by the body-coloration and the handsomely patterned wings. The only allied species so far described is *O. bimaculata* Enderlein, likewise from Espírito Santo, in which the thorax is bright rust-yellow and the highly contrasted wing-pattern is less conspicuously developed.

Holorusia ocellata (Enderlein).

1912. *Icriomastax ocellata* Enderlein; Zool. Jahrb., Syst., 32:9—10.

1917. *Icriomastax ocellata* Enderlein; Zool. Anzeig., 49:61—62; fig. 6. (wing), fig. 7 (palpus).

A female in the Deutsches Entomolog. Institut. collection from Joinville, Santa Catharina, Brazil, August—October, 1922, taken at electric light. Enderlein's type was from Espírito Santo. From the present specimen, it can be demonstrated that the genus *Icriomastax* is invalid and must be placed in the synonymy of *Holorusia*. The spurs of cross-veins in cells *R* and *1st A*, as shown in Enderlein's type and offering primary characters for the separation of the group from allied Tipuline genera, are quite lacking in the present specimen, and these must be considered as being adventitious rather than supernumerary. Other species of *Holorusia* have the maxillary palpus with the terminal segment relatively short, and this character must be held as being of very doubtful value. I cannot clearly detect the bifid nature of the nasus in the present specimen. As indicated by Edwards for the genus *Macromastix* (Trans. N. Z. Inst., 54: 333; 1923), the nature of the nasus varies greatly even within closely allied groups of species.

The writer's earlier opinions (Proc. U. S. Nat. Mus., 44: 486—487; 1913) of Enderlein's Tipuline genera may now be somewhat modified as a result of several years experience with the group, during which period representatives of all of these genera and supposed genera have been examined.

Otenacrosclis Enderlein is very close to *Holorusia* Loew. and has more recently been placed in the synonymy of the latter by Enderlein himself (Zool. Anzeig., 49: 60; 1917). However, both Edwards and the writer still feel inclined to recognize the group as valid, although real-

izing the extreme close affinities with *Holorusia*. As so restricted, the genus includes numerous Palaeotropical species. *Holorusia* is essentially Neotropical, with only the genotype, *rubiginosa* Loew, occurring in the Nearctic region, and a subgenus of doubtful position (*Zelandotipula* Alexander) in New Zealand.

Icriomastax Enderlein must be placed in the synonymy of *Holorusia*, as indicated above. Edwards (Trans. N. Z. Inst., 54: 333; 1923) had suspected that this genus, as well as *Phymatopsis* Skuse and *Pehlkea* Enderlein, might prove to be synonyms of *Macromastix* Osten Sacken. *Phymatopsis* is now much better known in the adult condition, and the immature stages of the genotype have recently been discovered. It has been found that members of the genus have subapterous females with long, chitinized valves to the ovipositor, a character that at once excludes the group from *Macromastix*. The true affinities of *Pehlkea* are considered below.

Stegasmonotus Enderlein and *Pehlkea* Enderlein, are, in the opinion, of the writer, synonyms of *Tanypremma* Osten Sacken. The reasons for such an assignment have been given in an earlier paper (Journ. N. Y. Ent. Soc., 22: 206; 1914).

Malpighia Enderlein is very doubtfully distinct from *Ctenophora* Meigen.

Phacelodocera Enderlein should be maintained as distinct, at least until the numerous species of the Australian genus *Plusiomyia* Skuse are better known. The genera *Ptilogyne* Westwood, *Plusiomyia* Skuse, *Platyphasia* Skuse, and the present group are all very closely related to one another, differing chiefly in various modifications of the antennae.

Dihexaelomus Enderlein is considered by the writer as constituting a valid subgenus of *Ozodicera* Macquart.

Tipulodina Enderlein, placed by its author in the Limoniine Pediciini, is now represented by numerous Ethiopian and Oriental species, a few of the latter occurring further northward in the south-eastern Palaeartic region. Although the structure of the adult offers very few satisfactory characters for separating the group from *Tipula* Linnaeus, the pupa shows features that are much more like those of *Prionocera* Loew. The group may be held as valid unless more evidence to the contrary is forthcoming.

Aldrovandia Enderlein, placed by its author in the Limoniine Eriopterini, is certainly a valid genus. The venation suggests affinities with *Ozodicera* Macquart, but the whole habitus of the fly points strongly toward *Tanypremma* Osten Sacken.

Holorusia horni n. sp.

Anterior half of mesonotum dark brown, the posterior half abruptly

pale; antennae bicolorous, the flagellum dark with the apices of the individual segments narrowly pale; pleura yellow, the dorsal portion of the pleurotergite dark; wings with the costal region narrowly dark brown, followed by a broad subhyaline area, the posterior half of the wing infuscated; cell M_1 sessile; abdominal tergites dark brown, paler medially.

Female. — Length about 21 mm; wing 23 mm.

Frontal prolongation of the head light brown, the nasus elongate, dark brown, tufted with yellow setae; palpi much longer than the antennae, dark brown, the terminal segment passing into obscure orange. Antennae with the scapal segments obscure brownish yellow, the apex of the first segment darker; flagellar segments black, the apices of the segments narrowly pale; extreme base of the first flagellar segment restrictedly paler; terminal three antennal segments more uniformly darkened. Head rich fulvous brown, with a capillary dark brown vitta and a paler brown cloud on either side of the median line of the posterior vertex.

Pronotum brown. Mesonotal praescutum almost uniformly opaque brown, the usual interspaces scarcely of a different color, with a sparse clothing of yellow setae; humeral region very restrictedly obscure yellow; scutum abruptly dimidiate, the anterior half dark brown, the posterior half buffy-yellow; scutellum pale brown, indistinctly variegated with paler on either side of a capillary dark vitta; anterior ridge of the parascutella dark brown; postnotal mediotergite light brown, paling into white on the caudal portion, the cephalic lateral corners dusky. Pleura yellow, the dorso-pleural region darker; dorsal half of the postnotal pleurotergite dark brown, confluent with the abdominal stripes. Halteres dark brown, the extreme base of the stem restrictedly pale. Legs with the coxae and trochanters yellow; legs very long and slender; femora and tibiae brownish yellow, the tips narrowly infuscated; tarsi obscure brownish yellow, passing into darker at tips; basitarsi much longer than the tibiae. Wings with the costal margin narrowly dark brown, followed by a broad whitish subhyaline longitudinal stripe, the posterior half of the wing entirely dusky; the dark costal margin includes all of cells C , Sc , Sc_1 , the stigma in cells $1st R_1$ and $2nd R_1$, and the extreme cephalic margin of cell R ; a brown spot at extreme base of cell M ; a small clearly-defined brown spot on vein Cu near midlength of cell M ; the pale stripe includes the narrow bases of cells Cu , $1st A$ and $2nd A$, almost all of cells R and M , and adjoining portions of cells $2nd R_1$ before the stigma, crossing the cord into cells R_2 , R_3 and base of R_5 ; center of cell R_3 and apex of R_5 darkened; veins dark brown, the

obliterative areas extensive. Venation: Cell R_3 very constricted near midlength; cell M_1 narrowly sessile.

Abdominal tergites broadly dark brown sublaterally, the basal segments broadly pale medially, this color becoming narrower behind; lateral margins of the tergites narrowly pale; sternites testaceous yellow. Ovipositor with the valves pale, the tergal valves very compressed.

Hab. Brazil (Sao Paulo).

Holotype, ♀, Butantan, August 9, 1920, (R. Fischer).

This very interesting crane-fly is named in honor of my friend, Dr. Walther Horn, to whom I am greatly indebted for many kindnesses in the past. *Holorusia horni* is readily distinguished by the striking body- and wing-coloration, the bicolorous antennae and the sessile cell M_1 .

Holorusia homochroa, n. sp.

General coloration yellowish to fulvous; mesonotal praescutum with four brown stripes, the broader lateral stripes darker; wings almost uniformly suffused with light brown, the stigma darker; male hypopygium with the region of the ninth sternite produced strongly ventrad, the narrow apices tufted with long yellow setae.

Male. — Length about 22 mm.; wing 25 mm.

Frontal prolongation of the head brownish fulvous, the nasus elongate; palpi black, the last segment a trifle longer than segments two and three taken together. Antennal scape dark reddish brown; flagellum broken. Head fulvous, with a narrow and relatively indistinct median line posteriorly; vertical tubercle low.

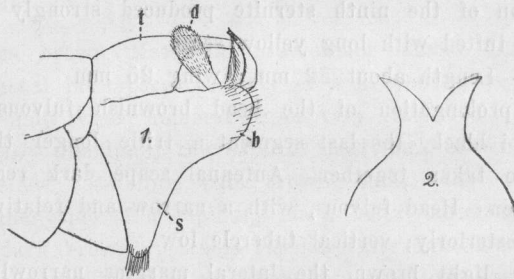
Pronotum light brown, the lateral margins narrowly lined with four brown stripes, the intermediate pair paler brown, relatively narrow, separated by a line of the ground-color that is about one-third as wide as the stripe; lateral stripes darker brown, conspicuous; humeral region and the sublateral portions of the praescutum vaguely darkened; scutum obscure yellow, each lobe largely covered by a slightly oblique brown marking, the median line at the suture less distinctly darkened; scutellum broad, yellow; postnotum similar, a trifle darkened posteriorly. Pleura light brownish fulvous, the dorso-pleural membrane clearer in color. Halteres light brown, the knobs darker. Legs with the coxae brownish fulvous; trochanters fulvous; femora reddish brown, the tips scarcely darkened; tibiae light brown, the tips very narrowly infuscated; tarsi brown, the outer segments passing into black. Wings almost uniformly suffused with light brown, the stigma darker brown; veins somewhat more distinctly seamed with brown, leaving the centers of the cells a trifle paler; veins pale, the radial vein between the wing-root and arculus incrassated and blackened. Venation: Vein R_3 strongly

arcuated, as in the genus; cell R_3 relatively narrow at its inner end, strongly narrowed before and at mid-length, the outer end widely expanded, the cell at the wing-margin as wide as, or wider than, cell R_2 ; petiole of cell M_1 subequal to or shorter than m .

Abdomen reddish brown, brighter fulvous basally, the eighth sternite darker at base. Male hypopygium (Fig. 1) massive, the 9th tergite (t) produced medially into a lobe (Fig. 2) that splits into two divergent flattened blades, the surface and mesal margins of which are provided with short setae. Combined 9th sternite and basistyle extensive, the former region (s) produced strongly ventrad, narrowed toward apex and here tufted with long yellow setae. Viewed caudally, the sternite is seen to have a deep V-shaped notch. Region of the basistyle (b) with relatively long and conspicuous yellow setae. Outer dististyle (d) short clavate.

Hab. Chile (Malleco).

Holotype, ♂, Victoria, (von Bodemeyer).



Holorusia homochroa n. sp.

Fig. 1. Male hypopygium; lateral aspect. b = region of the basistyle; d = outer dististyle; s = 9th sternite; t = 9th tergite.

Fig. 2. Male hypopygium. Dorsal aspect of 9th tergite.